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# BRITISH COLONISATION AND THE SPATIAL SHAPE OF SARAWAK, BORNEO

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## ABSTRACT

Modern history has witnessed Sarawak's first foreign occupation on 24.9.1841 by James Brooke. During his time, the area under his jurisdiction was about 3,000 square miles. Its coastline was from Tanjung Datu to Kuala Sungai Samarahan. The river of Sarawak and Lundu was part of this stretch. The width of its area was 60 miles inland. If reached the border of Kalimantan. During this period, Kalimantan was under Dutch rule. The total population of Sarawak in 1841 was estimated to be 10,500 people, 1,500 of them Malays livingnear the coastline. The number of Chinese merchants and gold miners was estimated to be 1,000 people and the Land Dayaks estimated to be 8,000 people, lived mostly in the hilly interior region. In 1860, Mukah was conquered by James Brooke. He became the first Rajah of Sarawak after defeating Shariff Masahor. In 1882, the territory from Tanjung Kidurong (Bintulu division) to Tanjung Baram were surrendered to Charles Brooke (second Rajah ofSarawak). From 1885 to 1905,Limbang, Trusan and Lawas which were previously parts of Sabah, became parts of Sarawak. Throughout history, from 1841 to 1905, Sarawak has changed its borders seven times. This paper will discuss that particular historical period from the spatial perspective. Among other things, the focus will be on the pattern and directions of Sarawak's border. GIS was used to map and analyse the pattern of the border's changes from the aspect of social-economy and morphology.

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Modern history has witnessed Sarawak's first foreign occupation on 24.9.1841 by James Brooke. During his time, the area under his jurisdiction was about 3,000 square miles. Its coastline was from Tanjung Datu to Kuala Sungai Samarahan. The river of Sarawak and Lundu was part of this stretch. The width of its area was 60 miles inland. It reached the border of Kalimantan. During this period, Kalimantan was under Dutch rule. The total population of Sarawak in 1841 was estimated to be 10,500 people, 1,500 of them Malays living near the coastline. The number of Chinese merchants and gold miners was estimated to be 1,000 people and the Land Dayaks estimated to be 8,000 people, lived mostly in the hilly interior region. In 1860, Mukah was conquered by James Brooke. He became the first Rajah of Sarawak after defeating Shariff Masahor. In 1882, the territory from Tanjung Kidurong (Bintulu division) to Tanjung Baram were surrendered to Charles Brooke (second Rajah of Sarawak). From 1885 to 1905, Limbang, Trusan and Lawas which were previously parts of Sabah, became parts of Sarawak. Throughout history, from 1841 to 1905, Sarawak has changed its borders seven times. This paper will discuss that particular historical period from the spatial perspective. Among other things, the focus will be on the pattern and directions of Sarawak's border. GIS was used to map and analyse the pattern of the border's changes from the aspect of social-economy and morphology.

## INTRODUCTION

There are many studies and publications on Sarawak's history. However, most of these studies have focused on the writing and historical research about events without taking into accounts the spatial element as well as its role in influencing a particular historical event. This includes research and publication done by Buyong Adil (1981); Abdul Rahman Haji Ismail (1977); Naimah S. Talib (1985), Low, H. (1988); Reece, R.H.W. (1982); Porter, A.F.

(1967); Brooke (1973); Brooke, M. (1848); Baring-Gould, Sabine (1909); Chang P.F. (1999); Runciman, S. (1960) and Ooi K.G. (1996 & 1997).

The use of mapping element and GIS in Historical Geography especially in the study of administration boundary changes has been carried out in many countries. One of them was carried out by the Queen Mary and Westfield College in London which looked at the changes in the local government's administration boundary in England and Wales from the middle of 19th century to 1973 (Ben White *et al.*, 1998). In this study the GIS technology was used for data keeping and management as well as to display the boundary changes according to time.

Other studies that applied GIS and observed the spatial phenomenon such as delimitation and historical socio-economy were Merrick Lex Berman (2003), Ian Gregory & Humphrey Southall (2000), Humphrey Southall (2003), David Rumsey & Meredith Williams (2002), Andrew A. Beveridge (2002), Amy Hillier (2002) and Ian N. Gregory and Humphrey Southall (2002). In the study done by Ian Gregory and Humphrey Southall (2002), GIS was used to look at the changes in census boundary used in England's population census. Although there were many studies which used GIS for database management and display, the use of GIS to understand boundary changes and the morphology of a place is still new and has not been carried out widely in Malaysia.

Morphology is an observation on changes of shapes and boundaries which are usually correlated to the density of development in a city (Mayhew, 1997; Johnston *et al.*, 2000). Batty and Longley (1987) for example used the Fractal Dimension (FD) to observe the boundary changes of the city of Cardiff, United Kingdom from 1886 to 1992. In their evaluation, it was found that the city's FD changed from 1.141 in 1886 to 1.117 in 1901 and 1.109 in 1992. This finding showed that there was no apparent city morphology changes in the period studied. This showed that this city's boundary pattern expanded in the same shape and direction from 1886 to 1992.

The little value changes showed the characteristic of a self-similarity although it was studied in varying scales. Other than that,

the shape index also can be used in understanding morphology of an area where a dense area has the value of shape index close to 1 (Longley *et al.*, 2001). Both methods were frequently used to evaluate spatial structural changes of an area (Batty and Longley, 1994; Coa and Lam, 1997; White and Engelen, 2000). This study has used GIS to map the physical changes of Sarawak's administration boundary from 1841 to 1905 and also to evaluate the morphology's changes of the changed boundary as well as correlating these changes with Sarawak's socio-economics and politics.

## Data and Methods

This study was based on historical map, documents and related studies about boundary change obtained from historical records in Kuala Lumpur National Archive, National Archive's Branch in Sarawak as well as from the Sarawak Land and Survey Department. The integration of various information sources created a rich database for cross-reference and to determine the reliability of the sources. The boundary map of British rule expansion was used to look at the direction and expansion pattern of that boundary. By using GIS the coordinates of the historical map used was registered to Malayan Rectified Skew Orthomorphic (RSO) coordinates used in Malaysia and Brunei. GIS was also used in the database formation, boundary change and administration unit analysis, and the display of the result in the form of maps and tables. In this study the Shape Index (SI) and Fractal Dimension (FD) was used to evaluate the pattern of boundary change in the study area. SI has a value of $1 \leq SI \leq \infty$ where 1 indicates a most dense shape representing a circle while a higher value indicates a less dense shape. The value of SI can be calculated by using the following formula:

$$SI = \frac{P}{3.54\sqrt{A}} \quad \text{.....(1)}$$

where,

$SI$ = shape index

$P$ = perimeter

$A$ = width