THE SARAWAK MUSEUM JOURNAL

https://museum.sarawak.gov.my

The Sarawak Museum Journal
Vol. XXXIV No. 55
December 1985

ISSN: 0375-3050
E-ISSN: 3036-0188

Citation: Leh, C. M. U. et al. (1985). Temperature-related Phenomena Affecting the Sex of Green Turtle (*Chelonia Mydas*) Hatchlings in the Sarawak Turtle Islands. The Sarawak Museum Journal, XXXIV (55): 183-194

TEMPERATURE-RELATED PHENOMENA AFFECTING THE SEX OF GREEN TURTLE (*CHELONIA MYDAS*) HATCHLINGS IN THE SARAWAK TURTLE ISLANDS

Leh, Charles M.U., S.K. Poon and Y.C. Siew
(Department of Zoology, University of Malaya)

ABSTRACT

Eleven clutches with a total of 1089 green turtle eggs replanted in the sand hatchery on the Island of Talang Talang Besar, Sarawak, at bottom depths of 52 cm, 56 cm and 60 cm, produced 6.3% to 13.8% males, 81.3% to 91.3% females and 2.5% to 5.0% intersex hatclings. The results obtained indicate that the present conservation practice in Sarawak produces a favourable sex ratio among hatchlings. The temperature regime during the middle third of egg incubation (critical period) is relatively constant between 29.7 + 1.0°C and 30.3± 1.2°C. There was a 12.5% drop in the number of female hatchlings per 1°C drop in temperature during the middle third of incubation on this island hatchery.

TEMPERATURE-RELATED PHENOMENA AFFECTING THE SEX OF GREEN TURTLE *(CHELONIA MYDAS)* HATCHLINGS IN THE SARAWAK TURTLE ISLANDS

by

Leh, Charles M.U.,

S.K. Poon and Y.C. Siew
(Department of Zoology, University of Malaya)

Abstract

Eleven clutches with a total of 1089 green turtle eggs replanted in the sand hatchery on the Island of Talang Talang Besar, Sarawak, at bottom depths of 52 cm, 56 cm and 60 cm, produced 6.3% to 13.8% males, 81.3% to 91.3% females and 2.5% to 5.0% intersex hatchlings. The results obtained indicate that the present conservation practice in Sarawak produces a favourable sex ratio among hatchlings. The temperature regime during the middle third of egg incubation (critical period) is relatively constant between 29.7 ± 1.0°C and 30.3 ± 1.2°C. There was a 12.5% drop in the number of female hatchlings per 1°C drop in temperature during the middle third of incubation on this island hatchery.

Introduction

Three islands, namely Talang Talang Besar, Talang Talang Kecil and Satang Besar situated off the coast of South-West Sarawak provide natural nesting beaches for a large population of green sea turtles (Fig. 1). Satang Besar is located at about 110°9' E., 1°47'N., approximately 7.3 kilometres offshore and about 18 kilometres from Santubong, the mouth of Sarawak River. The two Talang Talang islands lie less than 2 kilometres apart at 109°46'E., 1°44'N, approximately 9 kilometres off the mouth of Sematan River.

Conservation of marine turtles has been carried out on these Turtle Islands since the 1950's. Each year some green turtle eggs were replanted in the fenced sand hatchery adjacent to the natural nesting beaches. The young turtle hatchings were then released into the sea almost immediately. Unfortunately there is no record of the sex ratio of the hatchlings released each year. It has been assumed that the sex ratio of the hatchlings produced from the hatchery was similar to that from the wild. Recent work carried out in Costa Rica (Morreale, *et. al.* 1982) indicated that there is a difference in the sex ratio of hatchlings produced from the natural nests and artificially incubated nests.

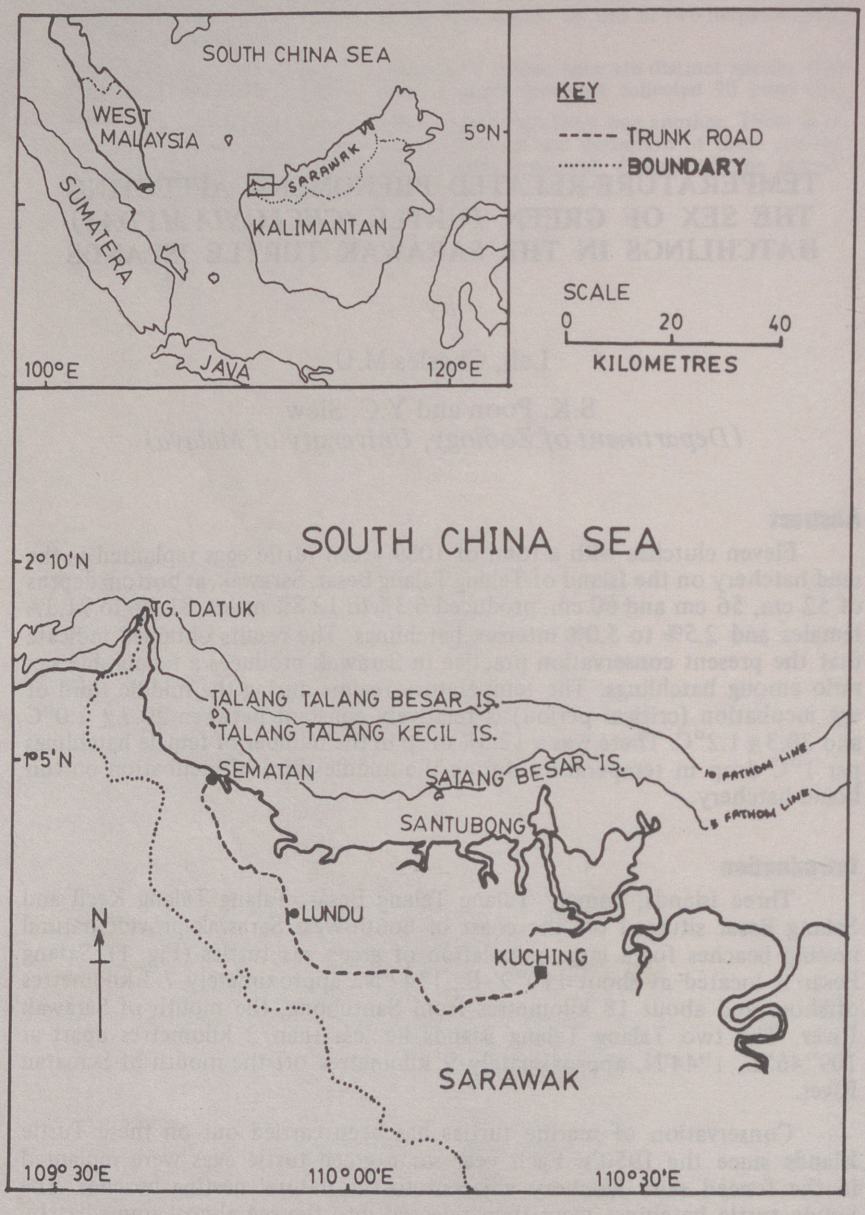

Figure 1. Location of the Turtle Islands of Sarawak, P. Satang Besar, P. Talang Talang Besar and P. Talang Talang Kecil in Sarawak.