

Investigation of trade in
Hawksbill Turtles
in Vietnam

TRAFFIC SOUTHEAST ASIA

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A TRAFFIC Southeast Asia Field Report

**Investigation into exploitation of Hawksbill Turtles
(*Eretmochelys imbricata*) in Vietnam**

Centre for Natural Resources and Environmental Studies (CRES)
University of Hanoi, Vietnam

April 1994 (revised version)

INTRODUCTION

The Hawksbill Turtle (*Eretmochelys imbricata*) is a widespread marine reptile species, known to nest in at least sixty countries in the tropics and sub-tropics, but suspected to be in decline in many parts of its range (Groombridge and Luxmoore, 1989). It is listed in the 1994 IUCN Red List of Threatened Animals as "Endangered" globally (Groombridge, 1993), its populations having suffered large-scale exploitation for eggs and tortoiseshell. Pacific populations of the species were transferred to CITES Appendix I from Appendix II in 1977.

One of the 30 species of chelonian native to Vietnam, the Hawksbill Turtle was reportedly common and found all along the coast of the country in the early part of the present century (Bourret, 1941). However, after decades of habitat disturbance and direct exploitation, it is now listed in "The Red Data Book of Vietnam" as "Endangered", though still thought to be widely distributed along the coasts and around the islands of the country - from Quang Ninh, Hai Phong (Cat Ba), to Thanh Hoa, Quang Tri (Cua Tung), Quang Nam-Da Nang, Quang Ngai, Binh Dinh, Khanh Hoa, Binh Thuan, Ninh Thuan, Kien Giang (Ha Tien, Phu Quoc, Tho Chu), Con Dao, Hoang Sa and Truong Sa archipelagos (MoSTE., 1992). Nesting appears to have been limited mainly to the off-shore islands, but little detailed information is available (Groombridge and Luxmoore, 1989).

Historically, this species has been heavily exploited in Vietnam, principally for the production of tortoiseshell goods, but also for food and preparation of medicinal products. Over-exploitation is not solely a recent trend - in the 1920s population reductions were attributed to excessive egg collection and harvesting in some areas was halted for a number of years (Le Poulain, 1941). However, Vietnam did not figure as a prominent supplier to the Japanese tortoiseshell (known there as "bekko") industry, the major user of this product in recent decades (Groombridge and Luxmoore, 1989).

In recent years the amounts of Hawksbill turtle products on sale in the country have again increased drastically, particularly tortoiseshell jewellery, curios, spectacle frames and stuffed turtles which are offered to the growing number of tourists who visit the country.

Table 1. shows the numbers of such items observed in tourist shops along Dong Khoi Street in Ho Chi Minh City during one day in May 1993 (CRES, 1994). TRAFFIC Southeast Asia observations during 1993 and 1994 in Ho Chi Minh City have revealed similar quantities for sale (Broad, pers. comm.). The trade is supplied through the capture of adult animals and the collection of juveniles and eggs from nesting beaches for rearing purposes (CRES, 1994).

Table 1. Hawksbill Turtle products on sale in Ho Chi Minh City, May 1993
Source: CRES (1994)

Item	Quantity	Price (USD) each
Bangle	250	2
Spectacle frame	120	80
Fan	150	80
Comb	142	29
Knife	53	10
Small box	75	54

Anecdotal reports received in 1992 during general surveys of wildlife trade in Vietnam (CRES, 1994), suggested that exploitation was exerting enormous pressure on Hawksbill Turtle populations in Vietnam and that together with development pressure at nesting beaches, this harvest was a serious threat to the species' survival in the country.

In response to these concerns, TRAFFIC Southeast Asia developed an investigation into Hawksbill Turtle exploitation in collaboration with the Centre for Natural Resources and Environmental Studies (CRES) of the University of Hanoi. The aim of the study was to obtain baseline information on harvest of and trade in this species, in order to develop recommendations for the government of Vietnam on steps to be taken to conserve the Hawksbill Turtle in the context of the long-term economic development of Vietnam. The project complemented simultaneous investigation of trade in tortoises and freshwater turtles in the country, the results of which are to be published separately.

INVESTIGATION RESULTS

Preliminary research indicated the importance of three sites for the investigation, all in central and southern Vietnam: Nha Trang, Con Dao and Kien Giang. At each site, the aim was to document the harvest and use of Hawksbill Turtles, through interviews with fishermen, traders and tortoiseshell processors. The research was carried out in September-November 1993, and the rainy season conditions at that time caused some logistical problems.

1. Kien Giang Province

1.1. Background

Kien Giang Province is situated along the south-western coastline of Vietnam, directly adjacent to Cambodia. The human population was estimated to total 1,266,000 in 1991, thought to be growing in number at a rate of around 2.4% per annum. Owing to its long coastline and numerous off-shore islands, Kien Giang has well developed agroforestry and fishing industries. Approximately 15% of the population is situated in rural coastal areas, depending largely on fishing. Kien Giang includes a large area (at least 13,000ha) of coastal habitats and Hawksbill Turtles are believed to have been quite common in this many parts of the province in the past.

During the war in Vietnam in the 1960s and early 1970s, coastal forests in the Province were severely damaged and large areas destroyed as a result of intensive napalming and spraying of toxic chemicals, mainly Agent Orange, is thought to have adversely affected the size of the Hawksbill

Turtle population through direct poisoning and alteration of habitat. Additionally, after the war there was an increased demand for curios and jewellery made from Hawksbill shell. Nesting beaches were raided for eggs and also for adult females, which were used for captive-raising or immediate sale. Young Hawksbills have also been heavily hunted for captive raising, so they can be traded when they reach adulthood. As a result, the species has become increasingly rare in the province.

At present, Hawksbill Turtles are found mainly in the Ha Tien, Phu Quoc and Kien Hai districts, especially on Hai Tac, Nam Du and Tho Chu islands, and in northern Phu Quoc. There are three Hawksbill ranching sites in Kien Giang Province: two are in Ha Tien district and the other is on Hon Mot island in Phu Quoc district.

1.2. Hawksbill Turtle exploitation in Kien Giang Province

1.2.1 Captive-rearing

The investigation revealed a total of 173 young Hawksbill Turtles being raised in captivity in 1993, however significantly higher numbers were reported to have been raised in earlier years. The ranches rear animals collected as eggs or juveniles in the wild and no captive-breeding is known to take place in these facilities.

a) Ha Tien district:

Bai Sau Hawksbill Ranch in My Duc village in Ha Tien district was established in 1981 by a private owner. In August 1993 there were 20 Hawksbills being raised at this ranch. The owner had previously owned a ranch in Tran Hau, also located in Ha Tien district where he raised about 200 Hawksbills. The site was abandoned because the source of juveniles became less fruitful and the water quality was no longer suitable for raising the turtles.

Bai Truoc Hawksbill Ranch, also in My Duc village, was established in 1990 by another private owner. In August 1993 there were 21 hawksbills being raised at this ranch. However, in 1990 there were in the region of 100 hawksbills being raised there, but many of these were killed because of flooding by large waves and a high incidence of infectious diseases.

b) Phu Quoc district:

The Xa Luc Ranch in Xa Moi village was established in 1992 by a private owner. In November 1993 there were 113 Hawksbills at Xa Luc ranch. The owner of Xa Luc Ranch collects eggs from nesting beaches for captive-rearing purposes. In March 1993, he collected 241 eggs from 2 clutches at the Hon Co Rong, and Hon Ong Hon Ba islands in Cambodian waters. Of these, 201 hatched, but only 113 survived. In 1991, he collected 4 clutches of eggs, containing a total of 250 eggs from the Tho Chu islands and the Hon Ong Hon Ba islands.

Prior to 1992, the owner of Xa Luc Ranch, was contracted by Phu Quoc Import Export Company to establish two hawksbill raising basins in Hon Mot at Xa Moi village. There were about 500 hawksbills being raised there at that time. However, this ranch no longer operates because of the decline in the number of hawksbills and the dissolution of the Phu Quoc Import Export Company.

In addition, there are several small raising sites located in various households in Phu Quoc District, mostly in Ham Ninh village. Recently, five households have captured a total of 13 young hawksbills from the wild to raise in small tanks. These are all being raised for decorative purposes.

c) Kien Hai District

In Kien Hai district there is another small ranch which was established in 1990. In 1993, there were only six hawksbills on this ranch which are being raised purely as personal pets and not for sale.

1.2.2. Capture of adult Hawksbills

Interviews revealed that in 1993, in addition to the turtles captured for captive-rearing, 56 adult hawksbills were captured for direct use of their shells in Ha Tien and Phu Quoc districts - 30 in Ha Tien and 26 in Phu Quoc. The total weight of Hawksbill shell sold in Kien Giang by local fishermen in 1993 was reportedly 50.4 kg. Another 20 kg was imported from Cambodia. In addition, a total of 32 adult Hawksbills - 10 in Ha Tien and 22 in Phu Quoc - were captured for purpose of making stuffed specimens for sale to tourists.

Local fishermen reported that female Hawksbills are sometimes intercepted just prior to nesting. In early 1993, a female hawksbill on her way to find a nesting site was captured by naval forces on Rong beach, Tho Chu Island. From June to December 1993, another 9 nesting females were captured and killed by naval personnel and local fishermen.

1.3. Processing of Hawksbill products

Shell plates from the carapace and marginal scutes, known as "tortoiseshell", are taken from both wild-caught and captive-raised Hawksbills and sold to processing establishments for producing jewellery, spectacle frames and curios. In addition, some animals are stuffed and prepared for sale as curios. Tortoiseshell is processed into many different items, including: combs, hand-fans, bracelets, hair-slides, match boxes, spectacle frames, cosmetic boxes, rings and ear-rings.. Turtle collectors sell tortoiseshell and specimens direct to the processing establishments, rather than through middlemen.

Table 2. Hawksbill Turtle products processed in Kien Giang Province in 1993

Product	Processing establishments		Total	Price (dong/item)
	Ha Tien	Phu Quoc		
	Number	Number		
Comb	18	12	30	30,000-100,000
Hand-fan	12	2	13	300,000
Bracelet	32	19	51	30,000
Hairpin	24	12	36	25,000
Hairslide	16	27	43	10,000-20,000
Match box	4	27	4	35,000
Cosmetic box	6	27	6	80,000
Framed spectacle	18	27	18	70,000-80,000
Ring	32	4	6	20,000
Earring	25	4	25	18,000
Stuffed Hawksbill	9	8	17	300,000-600,000

In 1993, there were two hawksbill processing centres in Kien Giang province. The total production of and wholesale value of items processed by those facilities is summarised in Table 2. The total monetary value of the annual production of these operations was approximately 20 million dong (USD2,000).

One of the processing operations is located in Ha Tien Town and it was established before 1950. The operation processes both tortoiseshell and stuffed turtles. In 1993 40 kg of scales were processed, of which 20 kg had been imported. The second operation is in Ham Ninh town, Phu

Quoc district. This centre usually manufactures items in response to specific orders. In 1993 2 kg of scales were processed and 10 stuffed specimens were polished. Other stuffed hawksbills were used for local display or sale to other traders.

In addition, to the manufacturing of jewellery and curios, some Hawksbill shell is used as an ingredient in traditional medicine. The shell is renowned for a sweet taste and effectiveness as an antidote, antipyretic, antispasmodic in cases of blood poisoning, smallpox, heat convulsions and febrile delirium. A normal dose is 3-8g (Keys, 1976).

1.4 Trade in Hawksbill products

The price of unprocessed tortoiseshell depends on the colour and vein quality. The prices of the different classes of scale in 1993 were:

- First-class scales:	3,500,000 dong/kg
- Second-class scales:	2,500,000 dong/kg
- Third-class scales:	1,500,000 dong/kg

Hawksbill products and stuffed specimens are sold to tourists visiting Phu Quoc and Ha Tien. Hawksbill products are also transported for sale in Ho Chi Minh City, but they are not directly exported out of the country from this province.

Surveys of tourist shops in Kien Giang province in August 1993 revealed a total of 59 stuffed Hawksbill Turtle specimens on sale. For stuffed hawksbills, prices depend on the size of the specimen. A specimen with a carapace of 10 cm in diameter is valued at about 100,000-150,000 dong. Prices of larger specimens may range from 350,000 to 600,000 dong.

1.5 Conservation of Hawksbills in Kien Giang Province

The prospect for Hawksbill populations in Kien Giang Province is very poor owing to habitat disturbance and direct exploitation through egg-collecting and capture of juveniles and adults. Anecdotal reports suggest that many nesting beaches in the province have been abandoned. There is an urgent need for the development of conservation measures to protect potential nesting beaches and prevent uncontrolled collection of eggs and capture of nesting females. If captive-rearing operations are to continue (for supply of the domestic market), strong control will need to be exerted on the collection of stock in future.

2. Con Dao

2.1. Background

The Con Dao archipelago consists of 16 islands with total area of about 7,571 ha. The islands are situated to the east of the southern tip of Vietnam, approximately 187 km south of Vung Tau (which is 128 km south of Ho Chi Minh City). The site of a major prison complex for over a century and throughout that time, the islands' natural resources suffered intensive exploitation. Many of the coral reefs around the islands were destroyed for building material and a wide range of marine species were harvested for food and sale to mainland markets.

Since the closure of the prison complex in the 1970s, attempts have been made to afford protection to the islands' unique flora and fauna. The archipelago was declared a nature reserve in 1984 and it became a National Park in 1992 (consisting of 14 islands plus a 4 km wide buffer zone around the coast).

According to local sources, Hawksbill Turtles were once abundant in the Con Dao archipelago, but collection for tortoiseshell production disturbed nesting and drastically reduced numbers in the islands' waters. However, since the introduction of protection measures, nesting has been recorded on the beaches of four of the islands (Hon Tre Lon, Hon Bai Canh, Hon Cau and Hon Tai Lon). The nesting beaches are monitored and protected by National Park rangers. Nesting takes place between March and August, and National Park staff have recorded the laying of over 30 clutches a month in total on the islands that are regularly monitored.

2.2 Hawksbill exploitation in Con Dao

The Con Dao islands were reportedly the site of a flourishing industry extracting Green Turtle *Chelonia mydas* oil around the end of the 17th century (Parsons, 1962). No detailed historical accounts of Hawksbill Turtle exploitation in the Con Dao archipelago exist, but some information about more recent harvest is available. Between the late 1970s and 1985, the Handicraft and Fine Arts Enterprise, based in the islands, produced jewellery from Hawksbill carapace for sale to visitors to Con Dao. The enterprise also had a captive-rearing facility. When juveniles reached about 20-30 cm in size, they were slaughtered to produce stuffed specimens for sale and 50-100 such specimens were reportedly sold each year. However, this enterprise was closed-down in 1985 when the first protective measures were introduced in the islands.

Since 1987, specific protection has been afforded to sea turtles around the islands. The islands with nesting beaches have guard posts with forest rangers designated to protect turtles from hunters and egg collectors. The Board of Directors of the Con Dao National Park and the local authority have passed a specific regulation which prohibits marine turtle hunting and violators can be penalised and made to return animals hawksbills back to the sea.

3. Nha Trang

3.1 Background

Nha Trang, 450 km north of Ho Chi Minh City, is the capital of Khanh Hoa Province and its population of over 200,000 people benefit from a thriving fishing industry and the town's growing popularity as a beach resort.

Hawksbill Turtles inhabit almost the whole coastal area of Khanh Hoa Province, but are more concentrated around the islands that have large fish populations, such as Dai Lanh, Hon Cha La, Hon Tre, Hon Noc, Hon Noi and Cam Ranh. Hawksbills are reportedly found in greatest numbers around Hon Noi and Hon Noc islands, the latter being the largest source of fish in the area. No detailed population status information is available though.

3.2 Exploitation of Hawksbills in Nha Trang

There are many Hawksbill trading operations in Nha Trang, but four processing businesses dominate the market, buying both live turtles and carapaces. During visits by the investigators in November 1993, 53 Hawksbills were found in the store of one operation. Traders at these establishments claimed that they sought carapaces of at least 40 cm in diameter for processing. A 40 cm diameter carapace was reported to be worth 600,000 dong. Wholesale prices for finished products were quoted as follows:

Bracelets:	15,000-50,000 dong/item
Fans:	150,000-200,000 dong/item
Spectacle frames:	400,000 dong/item

There are four main retail stores in Nha Trang that sell stuffed Hawksbills. Shop owners reported that they each sell 200-300 specimens per year. In addition, ten smaller stores reportedly sell 10-20 specimens each per year. These figures would suggest that between 900-1,400 stuffed turtles are sold each year in Nha Trang. The average price demanded by the shops per specimen is 1,000,000 dong.

Some of the turtles processed and sold in Nha Trang are collected locally in the province, but others are purchased from Kien Giang Province and from Danang, a major port/city in the centre of the country over 500 km north of Nha Trang. Locally-caught animals were believed to produce a total of 150-200 kg of tortoiseshell annually. One informant claimed that Hawksbill carapace is sometimes purchased from Singapore.

Interestingly, retailers claimed that stuffed turtles are seldom bought by foreign tourists because of their bulk. Instead they are reportedly bought by government institutions and private businesses as presents. During the November 1993, a company from Hanoi was observed to buy 12 stuffed Hawksbills with carapace diameters of over 30 cm. Products made from hawksbill shell are sold to visitors (including foreign tourists) locally or transported to Ho Chi Minh City for sale there.

Overall, interviews with traders indicated that as many as 2,000 Hawksbill Turtles are traded annually in Nha Trang, both as stuffed specimens and for processing into products.

CONCLUSIONS

Hawksbill Turtles are being extensively exploited in Vietnam through egg collection on nesting beaches and capture of both juveniles and adults. The turtles are killed, sometimes after a period of captive-rearing, for use largely in the production of decorative curios, but also for use as an ingredient in traditional medicine. This exploitation, together with destruction and alteration of coastal habitats essential for nesting, has resulted in dramatic reductions in the species population numbers.

Protection measures are urgently required in order to safeguard the future of this species in Vietnam. In the short-term, it should be afforded fully-protected status under the country's wildlife protection legislation, in order to provide a basis for the enforcement of a ban on harvest and trade, at least until the population can be adequately assessed. In addition, domestic sale to foreign tourists must be discouraged as any commercial export would be contrary to the provisions of CITES as the species is listed in Appendix I of the Convention, which Vietnam joined in April 1994.

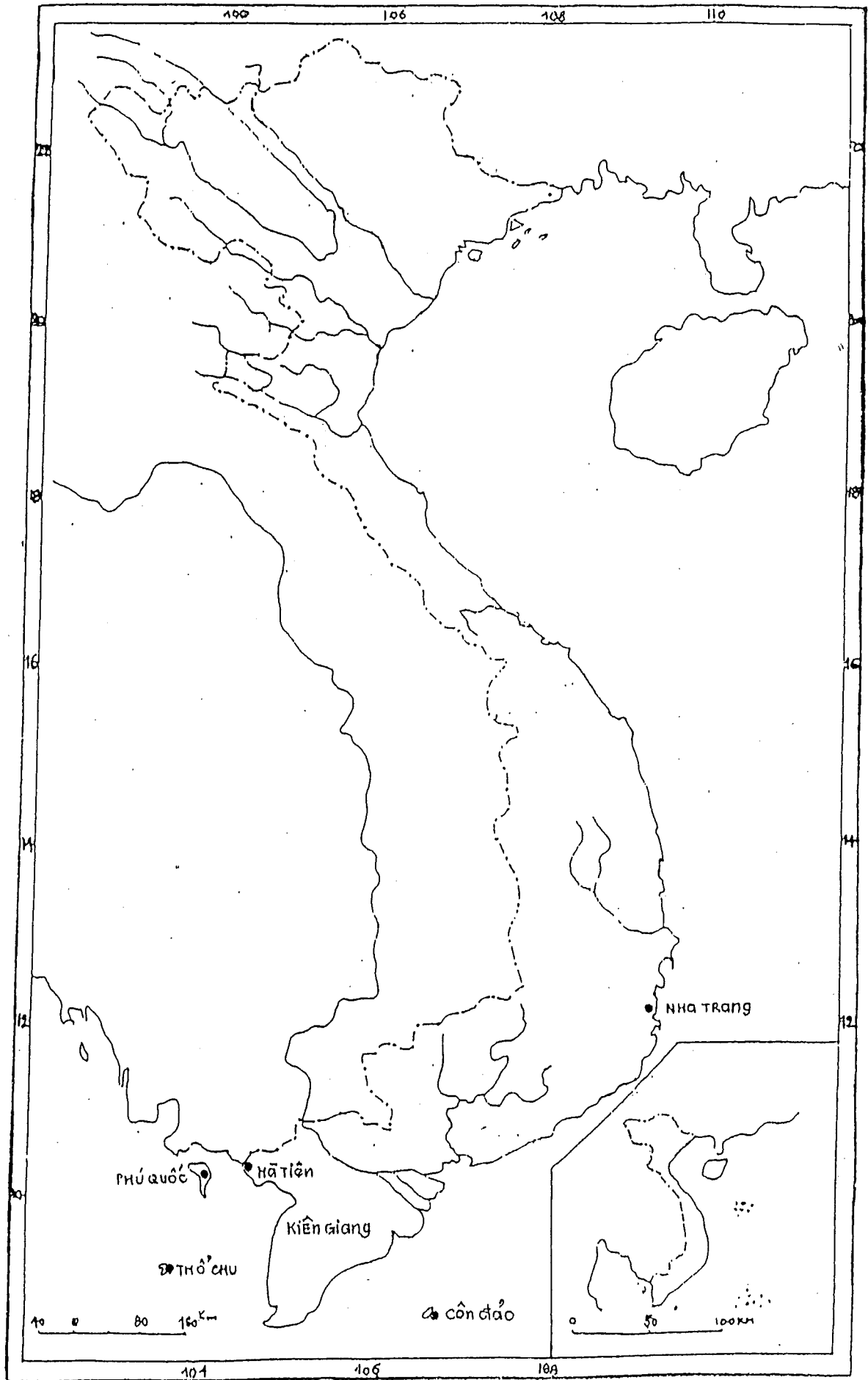
Fishermen and processors currently involved in the trade should be encouraged to suspend the exploitation of the species for a certain period of time. Government instructions and regulations should be publicised and attempts should be made to dissuade foreign tourists and local buyers from purchasing Hawksbill products. Regulations for the prosecution of offenders should be issued.

In conclusion, the plight of the Hawksbill Turtle in Vietnam needs urgent attention, through legislative action and subsequent enforcement of a suspension on commercial use of its products. The example of the conservation measures introduced in the Con Dao archipelago illustrate the fact that protection of this species in Vietnam can be successful, but the challenge of extending this security to all of the species' populations in Vietnam will be far greater. Measures to halt the trade must be complemented by a thorough assessment of the population of this species, in order that long-term management measures can be developed.

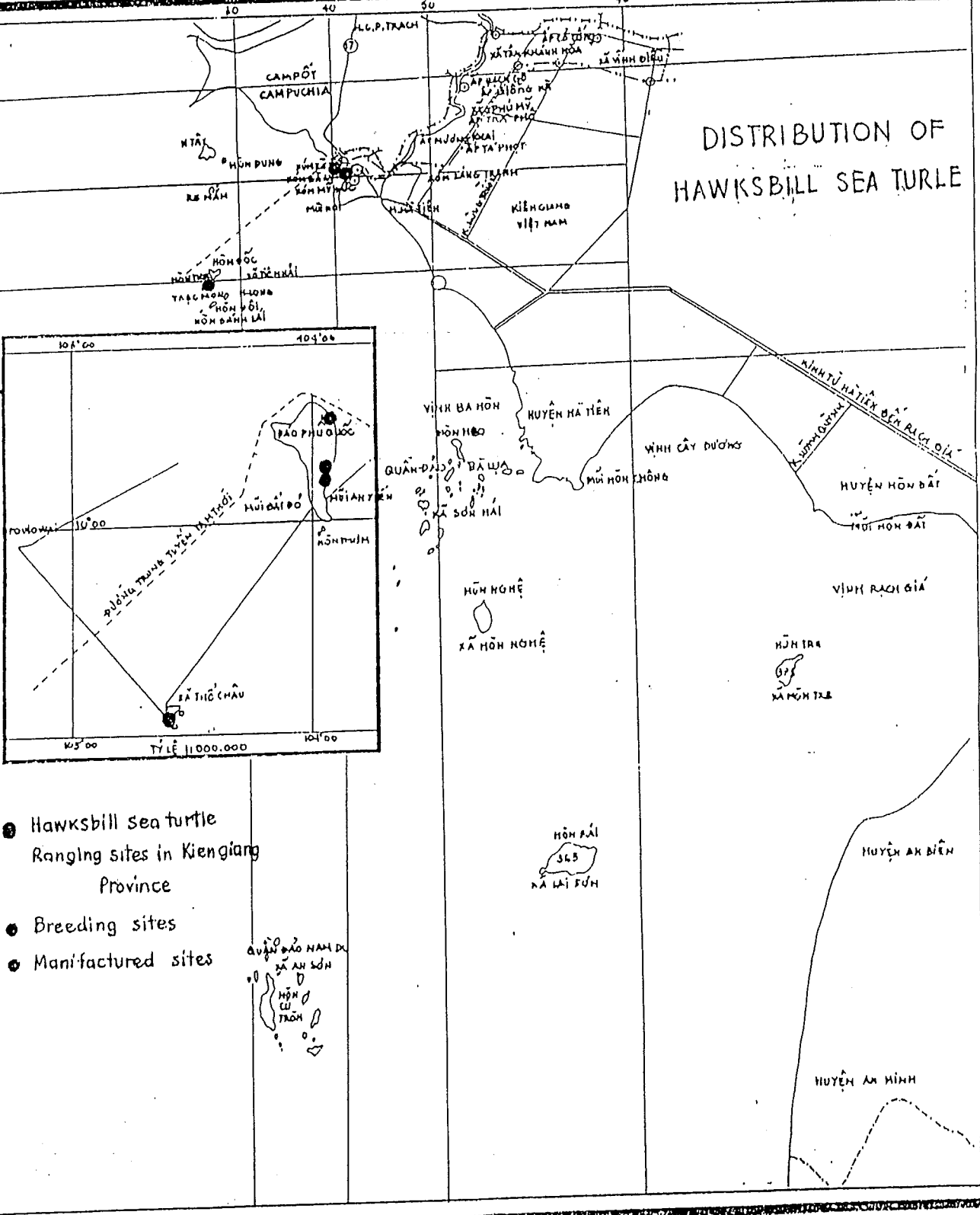
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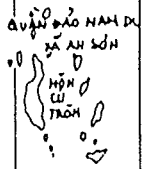
Figure 1: TO SHOW INVESTIGATION SITES



DISTRIBUTION OF HAWKSBILL SEA TURTLE

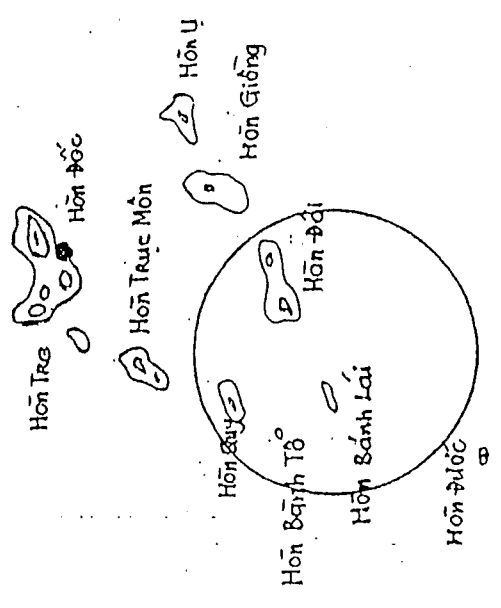
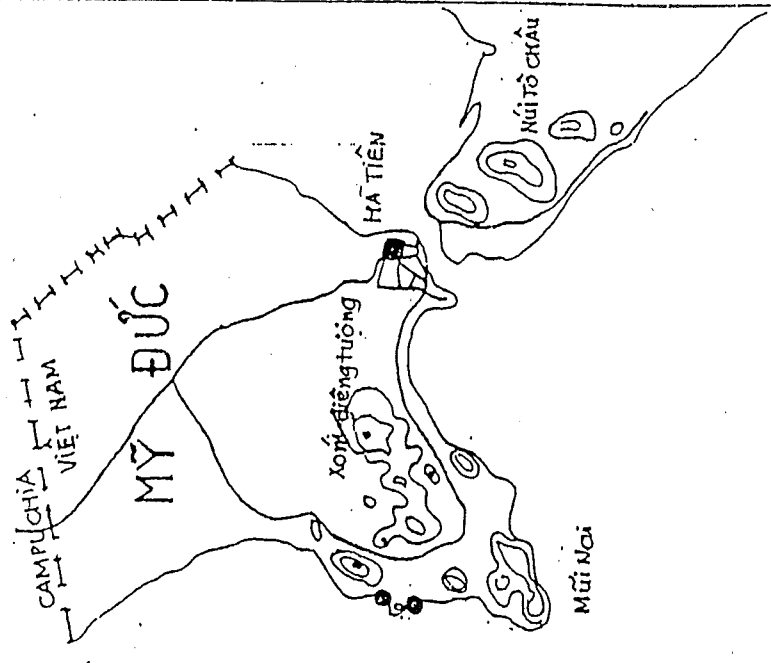


- Hawksbill sea turtle Ranging sites in Kiengiang Province
- Breeding sites
- Manufactured sites



MAP OF TIEN HAI VILLAGE - HA TIEN DISTRICT

SCALE: 1/100.000

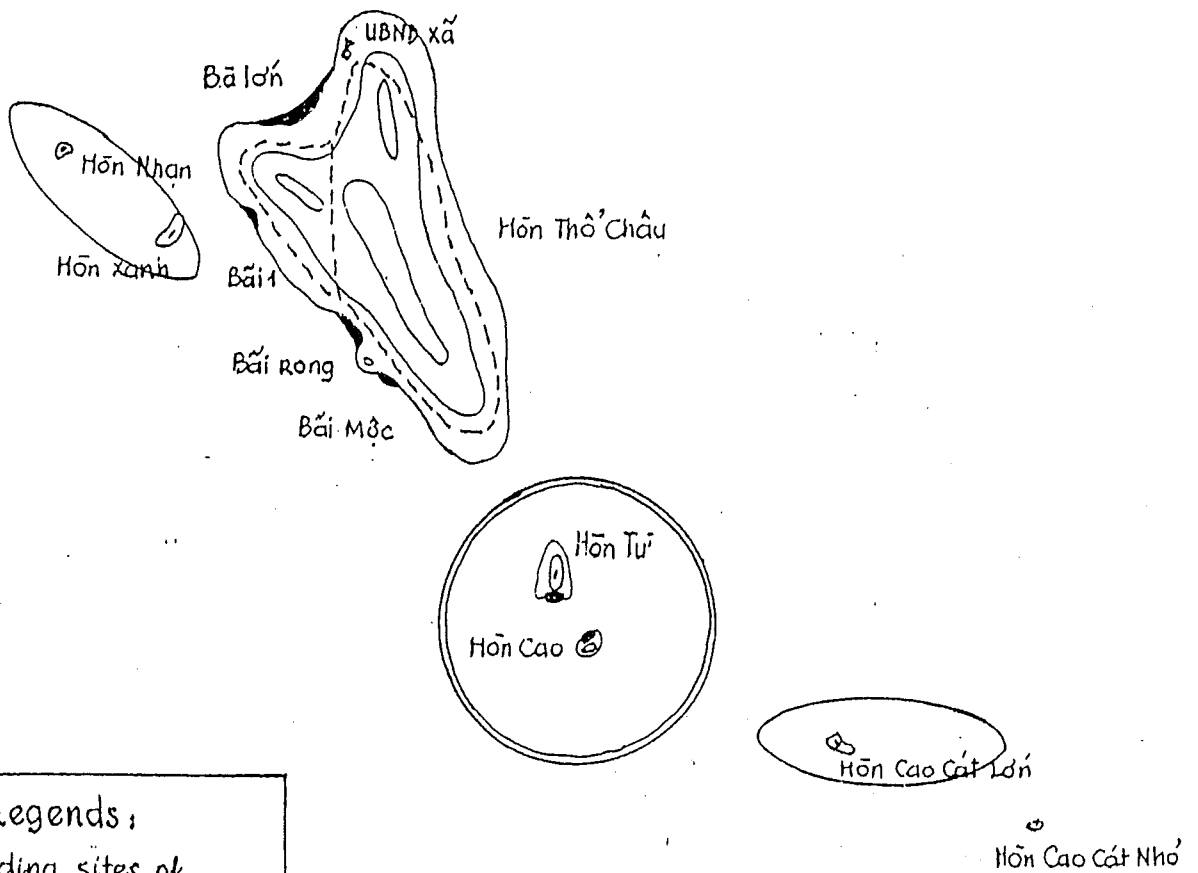


Legends

- Cultured areas of Hawksbill sea turtle
- Manufacturing sites
- Capturing areas

MAP OF THO CHAU ARCHIPELAGO

SCALE : 1/10.000

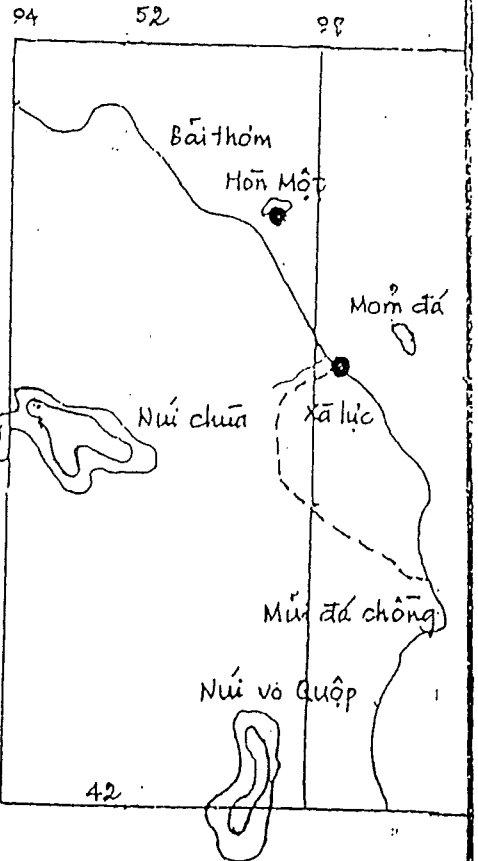
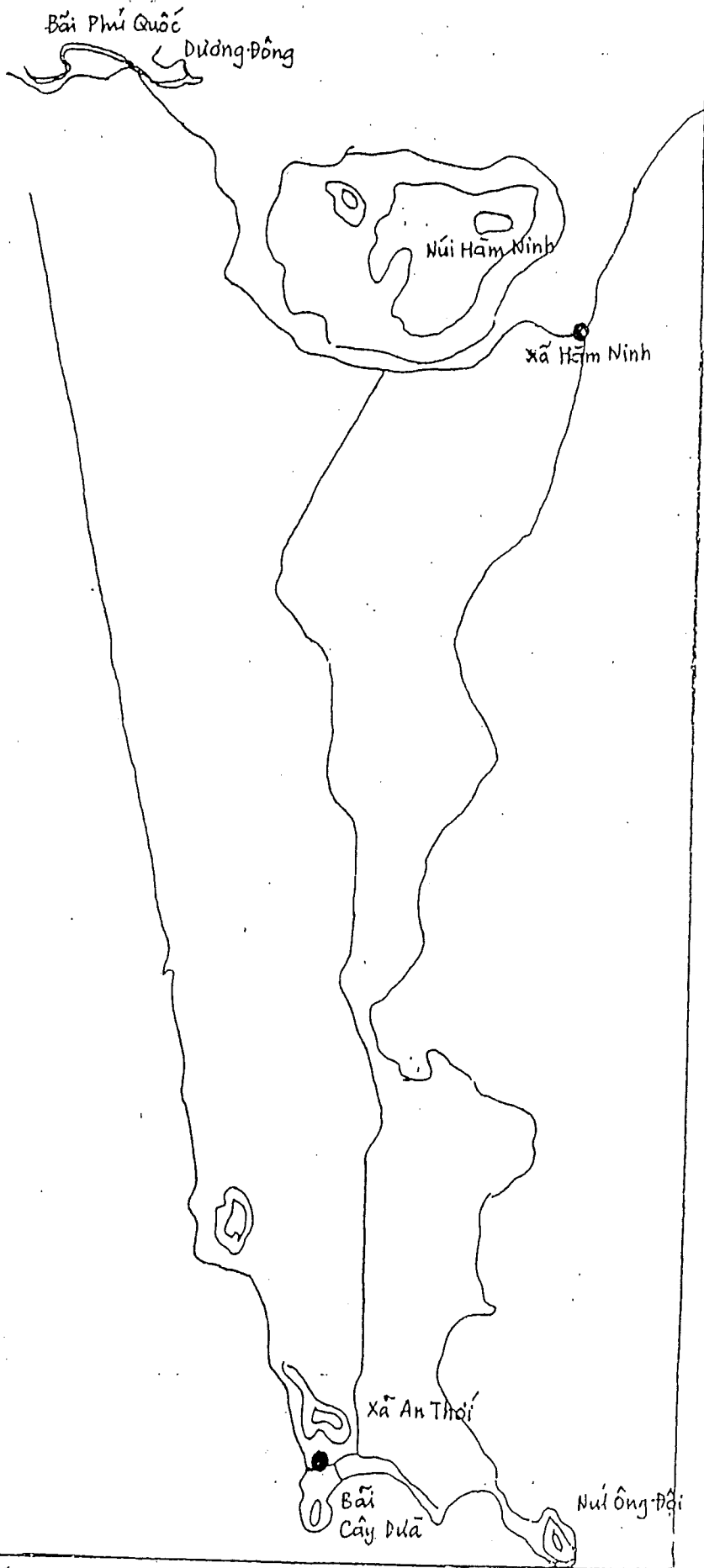


Legends:

- Breeding sites of Hawksbill seaturtle ●
- Capturing areas ○
- Proposed protected areas ⊙
- Trails - - - - -

MAP OF PHU QUOC DISTRICT

SCALE: 1/100.000

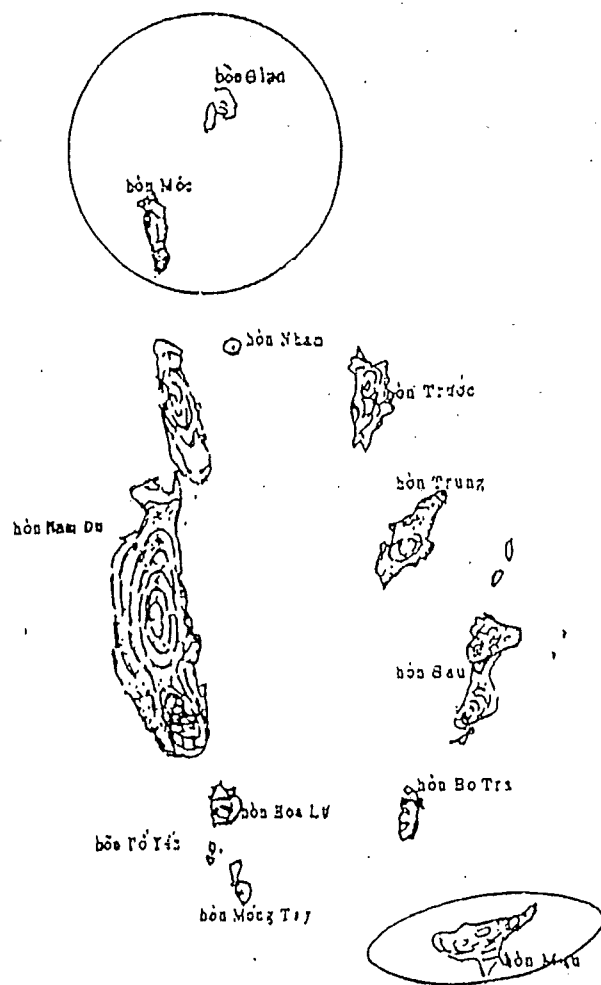


Legends

- Cultured area of Hawksbill seaturtle ●
- Manufactured sites ●
- Selling sites ●

MAP OF NAM DU ARCHIPELAGO

SCALE : 1/100.000



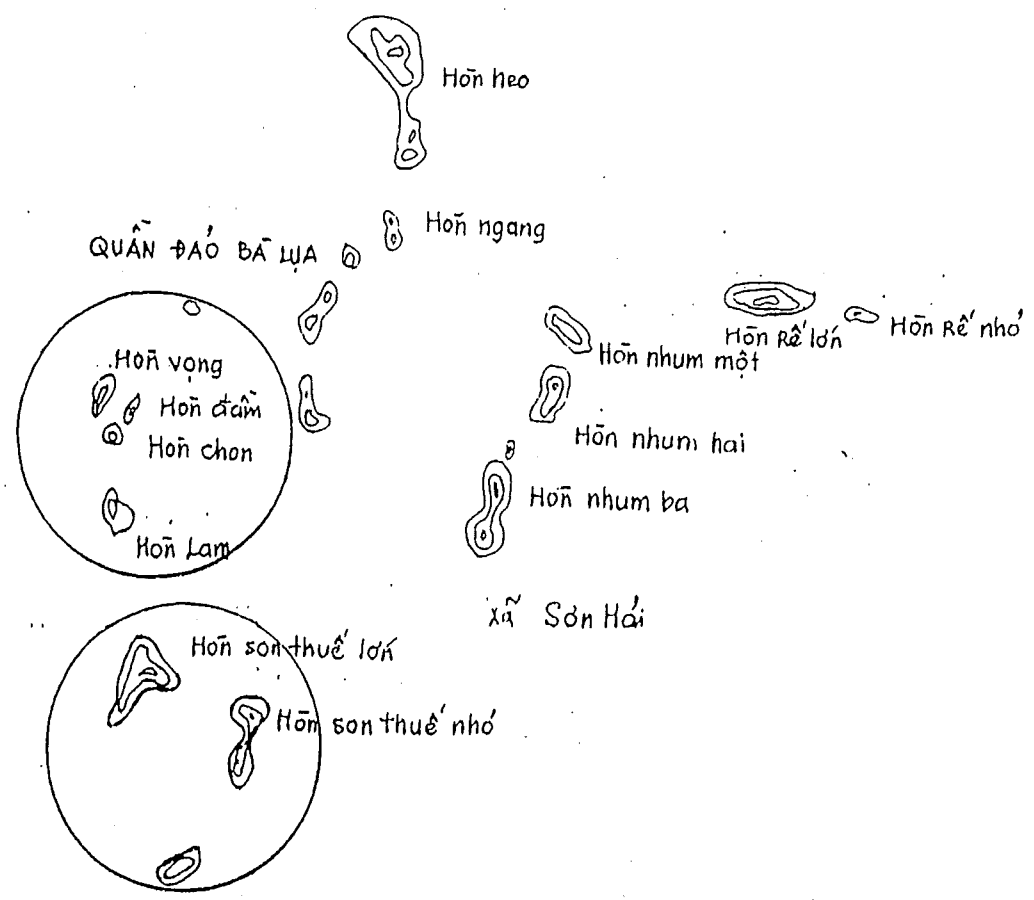
Legend

- Capturing area of Hawksbill seaturtle




MAP OF BA LUA ARCHIPELAGO

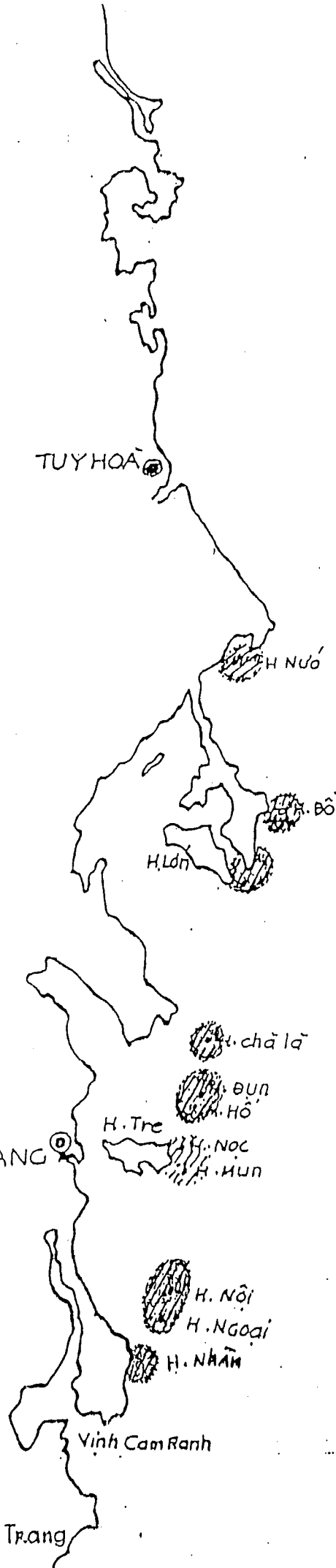
SCALE: 1/100.000



Legend

- Capturing area of Hawksbill sea turtle 

30'
30'
30'
30'
12°



TUY HOÀ

H. NƯỚC

H. ĐỒI MÔI

H. LỚN

H. CHÀ LÃ

H. ĐUN HỒ

NHA TRANG

H. TRE

H. NÓC

H. MÙN

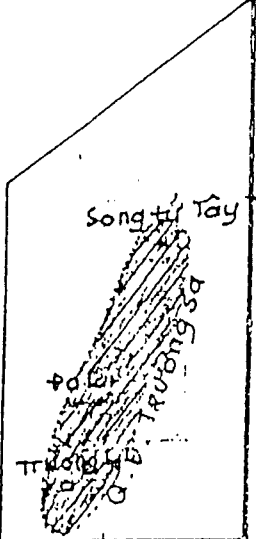
H. NỘI

H. NGOẠI

H. NHÃM

Vinh Cam Ranh

Distribution sites of
Hawksbill sea turtle in Nha Trang



1000

30'