

WATS II REPORT/DATA SET

National Report to WATS II for Trinidad and Tobago Nadra Nathai-Gyan, Dr. Carol James and Geddes Hislop 12 October 1987

WATS2 068





With a grant from the U.S. National Marine Fisheries Service, WIDECAST has digitized the databases and proceedings of the **Western Atlantic Turtle Symposium (WATS)** with the hope that the revitalized documents might provide a useful historical context for contemporary sea turtle management and conservation efforts in the Western Atlantic Region.

With the stated objective of serving "as a starting point for the identification of critical areas where it will be necessary to concentrate all efforts in the future", the first Western Atlantic Turtle Symposium convened in Costa Rica (17-22 July 1983), and the second in Puerto Rico four years later (12-16 October 1987). WATS I featured National Reports from 43 political jurisdictions; 37 presented at WATS II.

WATS I opened with these words: "The talks which we started today have the multiple purpose of bringing our knowledge up to date about the biological peculiarities of the marine turtle populations of the western Atlantic; to know and analyse the scope of the National Reports prepared by the scientific and technical personnel of more than thirty nations of the region; to consider options for the orderly management of marine turtle populations; and in general to provide an adequate forum for the exchange of experiences among scientists, administrators, and individuals interested in making contributions for the preservation of this important natural resource."

A quarter-century has passed, and the results of these historic meetings have been lost to science and to a new generation of managers and conservationists. Their unique importance in providing baseline data remains unrecognized, and their potential as a "starting point" is neither known nor appreciated.

The proceedings document what was known at the time concerning the status and distribution of nesting and foraging habitat, population sizes and trends, mortality factors, official statistics on exploitation and trade, estimated incidental catch, employment dependent on turtles, mariculture operations, public and private institutions concerned with conservation and use, legal aspects (e.g. regulations, enforcement, protected areas), and active research projects.

Despite the potential value of this information to agencies responsible for conducting stock assessments, monitoring recovery trends, safeguarding critical habitat, and evaluating conservation successes in the 21st century, the National Reports submitted to WATS II were not included in the published proceedings and, until now, have existed only in the private libraries of a handful of agencies and symposium participants. To help ensure the legacy of these symposia, we have digitized the entire proceedings – including National Reports, plenary presentations and panels, species synopses, and annotated bibliographies from both meetings – and posted them online at http://www.widecast.org/What/RegionalPrograms.html.

Each article has been scanned from the original document. Errors in the scan have been corrected; however, to be true to the original content (as closely as we can discern it), potential errors of content have not been corrected. This article can be cited (with the number of pages based on the layout of the original document) as:

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Karen L. Eckert WIDECAST Executive Director June 2009

WESTERN ATLANTIC TURTLE SYMPOSIUM II

NATIONAL REPORT

TRINIDAD AND TOBAGO

Prepared by Nadra Nathai-Gyan National Representative;

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WILDLIFE SECTION FORESTRY DIVISION

MINISTRY OF FOOD PRODUCTION, MARINE EXPLOITATION, FORESTRY AND THE ENVIRONMENT

OCTOBER 1987

Trinidad and Tobago National Report to WATS II (1987)

This report has been prepared for the Western Atlantic Turtle Symposium II (WATS II) scheduled for October 11th to 16th, 1987 at Mayaguez, Puerto Rico.

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A. INTRODUCTION

Trinidad and Tobago are the most southerly of the Caribbean chain of islands with Trinidad lying close to the Orinoco Delta of the mainland of South America (approximately 12 km or 6.2 miles) and Tobago lying 34 km or 20 miles north east of Trinidad (Figure I).

The twin island nation comprises of an area of 5,123 sq. km (1,980 sq. miles) of which Trinidad 's approximately 4,828 sq. km (1,864 sq. miles). Both islands lie between 10° - 12° north latitude and 60° 62° west longitude. The total population of Trinidad and Tobago is estimated to be 1,149,300 persons with 1,106,300 in Trinidad and 43,000 in Tobago (Central Statistical Office, June 1983).

The unique physio-geographic layout of both islands provides a wide variety of habitats for numerous species of fauna, including 5 species of marine turtles, which have historically nested on most of the country's sandy beaches (Fig. II: map of Sandy Beaches). Within recent times, increasing human populations and parallel infrastructural, social and economic developments, have served to reduce the number of suitable beaches for marine turtles. Thus, this report focuses attention on the main nesting beaches visited annually by various species of marine turtles with limited references to occasional visits on historical nesting sites.

B. PART 1

SUMMARY OF PAST AND PRESENT STATUS OF SEA TURTLES IN TRINIDAD AND TOBAGO

1. Species Nesting in Trinidad and Tobago

1.1 The leatherback turtle, Dermochelys coriacea. (local name: Caldon)

The leatherback turtle is the dominant species of marine turtle which nests both in Trinidad and Tobago. In Trinidad nesting is confined to the northeast and north coast beaches and in Tobago to the more leeward coast (Figs. III and IV). Trinidad beaches with greatest nesting activity are Matura, Fishing Pond, Paria, Grand Tacarib and Madamas. It is at Matura however, that protection efforts and nesting studies/observations have been undertaken in greatest detail because of its relatively easy accessibility. Plymouth and Turtle Beach are the two more important nesting beaches in Tobago.

Nesting takes place each year from about late March to late August with early arrivals in February and stragglers in September. Indeed, for this season (1987) five (5) leatherback nests and 15-20 hatchling tracks were observed at Fishing Pond as early as late February by Wildlife Enforcement Officers. Late February hatchlings would suggest nesting activity as late as November 1986. Peak nesting occurs in May-June and it is not unusual to count as many as seventeen (17) turtles nesting per night on a 2.5 km stretch of beach at one of the major nesting beaches during this period.

Data collected since 1984 suggests that approximately 500-900 mature female turtles come ashore in Trinidad to nest each year. An increase in nesting was observed in 1985 and this has been paralleled in 1987 (Tables 1 and 3). In fact, this data suggests that for 1987 there seems to have been an unprecedented increase in nesting. Many turtles were observed at the beaches, with damaged fins, bruises (old and new), and round tag holes. No recent information on nesting numbers is available for Tobago. Bacon, 1971 (App. I) reported that the Tobago population numbers only a few dozens and recent verbal reports suggest no significant changes.

1.2. The green turtle, Chelonia mydas

Although no data has been collected in a systematic way, reports are received that the green sea turtle is frequently caught by fishermen in waters of Trinidad and Tobago and it appears that this species is moderately common. Nesting on Trinidad and Tobago beaches occurs occasionally at Paria, Moruga and offshore islands in north west Trinidad. Occasional sightings of nests are made during regular patrols to protect and study leatherback turtles but there is insufficient data to pinpoint its relative abundance, preferred beaches, season (peak season inclusive), etc. It can safely be assumed that nesting is much less common than the leatherback and that at least some nesting activity takes place during the nesting season of the leatherback.

1.3 The hawksbill turtle, Eretmochelys imbricata (Local name: Oxbill)

Pritchard (1984; App. II, pg 23-24) reported that the hawksbill turtle can be found around coral reefs with nesting grounds often very close to favourite feeding grounds. During the period under review, hawksbill nest were observed singly and never in groups at various beaches around Trinidad (sandy and rocky) but only one hawksbill turtle was actually observed nesting at Matura in 1985. Pritchard (1984) further states that actual records of nesting hawksbills in Trinidad are rather few, and appears to be concentrated on the Bocas Islands rather than on Trinidad itself.

1.4 <u>The olive ridley turtle</u>, *Lepidochelys olivacea* (Local name: batali)

Historically, nesting records of olive ridley in Trinidad and Tobago are very rare although it is commonly caught in Trinidad waters. Two recent noteworthy records of nesting by olive ridley are:

- Nesting in western Trinidad, i.e. Orange Valley: nest, and Otaheite: 20 in 1984 (reported by M. Gaskin, 1984)
- Discovery of an olive ridley carcass at Fishing Pond in September 1986 (assumed that the turtle came ashore to nest and became entangled in beach debris rendering it incapable of returning to sea.



Figure 1. Regional location map of Trinidad and Tobago.

Editor's note (2009): The figure was redrawn from the map featured in the original national report.



Figure II. Map of Trinidad showing sandy beaches.

Editor's note (2009): The figure was redrawn from the map featured in the original national report.



Figure III. Marine turtle nesting area of Trinidad.

Editor's note (2009): The figure was redrawn from the map featured in the original national report.



Figure IV. Marine turtle nesting areas of Tobago. Taken from WECAFC studies No. 7- P.R. Bacon (1981).

Editor's note (2009): The figure was redrawn from the map featured in the original national report.

1.5 The loggerhead turtle, Caretta caretta

The loggerhead turtle is the rarest of the marine turtles found in Trinidad and Tobago water and records of nesting are few to non-existent. Confirmed sightings of loggerheads have been made around the north coast and Chacachacare Island (one of the Bocas Islands). In addition in March 1987 two loggerheads shells were discovered at an island river at D'Abadie in east Trinidad, used for recreational purposes and there were signs that the meat may have been cooked not far away from the discarded shells. Fishermen may have captured these in Trinidad waters. Further details in C, Part 2.

2. Factors Affecting Nesting Beaches

2.1 Nesting beaches can be described as high energy sandy beaches where the sand particles have been graded by the waves into zones of a certain texture and size. In the ideal nesting zone sand is less compacted and thus allows for more aeration of nests and easier digging by turtles (evidenced by the difficulty experienced while walking on this loose surface).

2.2 Most of the suitable nesting beaches offer wide, sandy surfaces, have gently sloping inclines and are bordered by unbroken lines of vegetation.

2.3 The undesirable practice of sand mining was allowed at Matura Beach up to 1984, but was terminated thereafter, largely through the efforts of the Wildlife Section, Forestry Division in alerting authorities in the mining sector of the detrimental effects of this practice. Removal of sand resulted in drastic changes in beach contours due to tidal action in quarried areas (large craters, fallen coconut trees on shoreline) leaving no suitable nesting surfaces. Fortunately, with the cessation of this practice, beach conditions were stabilized. For further reference, see Appendices II (pg. 16-18), III (pg. 1), and IV pg. (3-4 and 13).

2.4 Solid waste pollution is a serious problem affecting most turtle nesting beaches and usually consists of any item from logs, branches, dried coconuts, plastics, bottles, fishing nets, and a host of other incidental items either brought in by tides or washed from inland by rivers. During certain months of the year as much as 70% of beach surfaces may be covered by debris resulting in drastic reductions of available nesting surfaces. Observations indicate that the immediate areas selected by the leatherback turtles to nest are mostly wide sandy areas free of debris. Available nesting beach surfaces are further affected by creeping vegetation (*Sesuvium portulacastrum; Ipomea pes cape; Sporobolus; Canavalia*) growing rapidly during the start of the rainy season.

2.5 Due to the high-energy condition of these beaches there is a natural cycle of sand accretion and erosion. At times, the erosion phase can fall within the critical nesting period thus reducing nesting surface as well as destroying nests and eggs (eggs have been found scattered and nests exposed).

2.6 Increased recreational activities at Manzanilla, Mayaro and Guayaguayare beaches have seriously affected nesting at these beaches where significant numbers of leatherback turtles continue to nest annually. Manzanilla and Mayaro may suffer a similar fate to north coast beaches such as Maracas and Las Cuevas where recreational activity has had negative impacts on turtle nesting.

3. Exploitation

3.1 Quantities of sea turtles taken for human use and the kind of use

The leatherback marine turtle is the only marine turtle for which data on exploitation has been collected on a regular basis.

In 1985, 68 carcasses were recorded; in 1986, 11 carcasses; in 1987, 28 carcasses for Trinidad. These carcasses were the result of illegal slaughtering of the nesting female turtle while on land. This data is not comprehensive as other evidence of slaughter not based on carcass sightings is difficult to obtain. Some carcasses are buried deep in the sand; are covered with an abundance of vegetation; may be dumped far out at sea and in some instances the entire carcasses may be carried inland to locations where time is taken to dress the meat for sale.

Frequently poachers are unable to cart away all the meat and the carcass is left on spot where rotting occurs. Needless to say, the stench emanating from this rotting carcass spoils the pleasure of people visiting the area to view the nesting turtles. In addition, a certain percentage of both males and females are caught as incidental catch in fisheries (fishing nets and shrimp trawls) or deliberately caught with nets and harpoons. Since 1984 data on incidental catch of marine turtles in fisheries and deliberate catch has not been collected by the Fisheries Division of the Ministry of Food Production, Marine Exploitation, Forestry and the Environment.

Other species are spared the wanton slaughter while on land because of their unobtrusive nesting habits. However, the green, hawksbill and olive ridley turtles are frequently caught in fishing nets. Recent reports indicate that fishermen at Paria, Moruga and Sea Lots design special nets with a mesh size between 6-10 " specifically to harvest green turtles illegally.

There is also serious poaching of eggs often in the day time when long poles are poked into the sand and if the ends come up sticky, the nests are dug-up and the eggs retrieved.

Meat obtained from marine turtles is used for domestic consumption or commercial gains. In the case of the former, it may be prepared in curry, stew or soup (calipee). The latter is a lucrative trade and the meat may be sold in local markets at prices ranging from TT \$2.00/lb wholesale and TT \$5.00-\$6.00/lb. or cooked and sold disguised as "beef-roti" (especially leatherback which is known as "Brazilian Beef" in the north coast villages of Trinidad) for TT \$6.00 - \$8.00 by unscrupulous vendors. In Tobago, hotels-have been known to serve "turtle-steaks" in their menu. The green and hawksbill in that order are preferred by the populace of Trinidad and Tobago due to the edibility of the meat.

An unusual use for the male turtle genital organ has been explored by a 24-year old man from Port-of-Spain. It is grated and formed into a concoction with brandy, punches, peanut, soursop, carrot, etc. He claims that it is a highly successful aphrodisiac (App. V).

Eggs are utilized mainly because of the supposedly aphrodisiac quality and may be eaten raw or cooked (fried). In addition, some people, especially in the poorer rural areas, may also use the eggs for substance.

Fins are sometimes hacked from nesting turtles and used as bait for catching sharks which are usually attracted to the scent of blood. Local shark fishermen have found it profitable to use fins as lures for sharks nearby in the waters and leatherback turtles are mostly affected by this highly undesirable practice.

The only other species of marine turtle exploited for products other than its meat in Trinidad and Tobago is the hawksbill turtle. Shells (tortoiseshell) are utilized in various ways to make jewelry (rings, earrings, bracelets, pendants) carvings, accessories (brooches, pins, hairpins, clips, combs) and souvenirs or curios ("backs" are polished). Pritchard (1984) indicated that the shell and leather of wild green turtles are of little commercial value or importance. For further reference, see Appendices II, pp 26-27, 29; App. IV, pp 2, 13-14.

3.2 Trade in Sea Turtle Products

3.2.a Local

In the past, a localized trade existed in the villages of Trinidad and Tobago where the hawksbill shells were obtained primarily for the handicraft industry. This may still occur since worked items turn up for sale in hotels and other tourist centres. Many homes in Trinidad and Tobago also display polished "backs" which they may have obtained either as a gift or purchased from local "manufacturers".

3.2.b International

Milliken and Tokunaga (1987; App. VI) reported that no trade in "tortoise shell" was received from Trinidad and Tobago between 1970 and 1982, but suddenly appeared in Japanese customs data in 1983, 1984 and 1985 for a total of 1,081 kg (derived from at least 1,000 hawksbill). An investigation was held into 63 kg exported to Japan in 1985 and it was confirmed by the Wildlife Section, CITES Management Authority of Trinidad and Tobago to Traffic (Japan) that it was an illegal exportation. This may have alerted the dealer since in 1986, trade from Trinidad was halted. It is possible that illegal trade may have shifted to another Caribbean country.

Pritchard (1984; App. II pp 26) related that a considerable proportion of the shells of hawksbills caught in Trinidad waters is purchased for \$15 TT - \$20 per pound by Hashim Mohammed of Toco, who then sells it to Mr. Charles Fritz of St. Lucia who visits Trinidad approximately every three months, purchasing shell for export to Japan.

The Trinidad and Tobago delegation of the sixth meeting of CITES held in Ottawa from July 11-24 expressed strong concerns about the exploitation of marine turtles and turtle products in the region. The delegation commended the Japanese delegation for removing its restriction on the Appendix I listing of green turtles but felt that such action had not gone far enough and recommended that similar action should also be taken with regard to the hawksbill turtle. The Trinidad and Tobago delegation also supported proposals made at the conference to reject the French proposal for ranching turtles until mechanisms for tighter control on trade in the Caribbean region involving transhipment of products from various regional territories, including Trinidad and Tobago, through the French overseas departments of Martinique, Guadeloupe and French Guiana were developed. (App. VII). For further information on Exploitation, see Appendix VIII, pg 2-5).

4. Other Known Sources Of Sea Turtle Morality

The question of sea turtle mortality is being broadened to include factors affecting turtle nesting success and other unfavourable conditions.

4.1 A major mortality factor for sea turtles is the accidental capture in fisheries operations (fish nets and shrimp trawls). Turtles are injured or drowned and in cases where they are brought up alive, fishermen kill them and sell the meat to compensate for the damage to the fishing nets. This problem is intensified during the nesting season when turtles "bask" near to shore resulting in more females than males being caught in nets. Turtles are also hunted in the open waters by fishermen using nets or harpoons.

4.2 During the nesting process, leatherback turtles are subjected to lights (torches, cameras), noises, other disturbances from large, sometimes unruly crowds who flock the beaches to observe nesting. These activities undoubtedly disturb and frighten the turtles which may return to sea without laying.

4.3 Nests are dug up by dogs, corbeaux (*Coragyps atratus*; vulture), which utilize eggs for food and there is some evidence that eggs may also be penetrated by ghost crabs (*Ocypoda quadrata*) thus rendering them useless. This situation is grave at Grande Riviere and Madamas Beaches. Corbeaux will also eat the carcasses left on the beaches to rot.

4.4 Based upon repeated observations, it is apparent that dogs₎ corbeaux and ghost crabs also eat hatchlings when they emerge. In addition, some are eaten by shore birds such as gulls and frigate birds and in the waters by sharks and large carnivorous fish.

4.5 Lights are detrimental to hatchlings resulting in disorientation. Some go inland following the lights (in built-up areas, e.g., Grande Riviere) or into the vegetation lining the shore and sooner or later perish.

4.6 Litter on the beach, in addition to reducing the amount of nesting surface available, also present obstacles to hatchlings heading out to sea. Observations have been made on many occasions of hatchlings entangled in beach debris.

4.7 Crowds of visitors lured by the spectacular attraction of turtle nesting walk on beach surfaces where nests are already located. This can seriously affect eggs and hatchlings since compaction can occur to reduce or impede aeration of the nests and emergence of hatchlings.

4.8 Erosion (natural/causal) especially in these high-energy beaches can result in nests being destroyed by tidal actions (washed away, slopes caved-in) leaving eggs scattered and exposed. Observed at Matura, Fishing Pond, Grand Riviere and Madamas.

4.9 At Matura Beach for 1987, it was observed that clay from bordering hillsides was washed down during the rainy season and covered portions of the nesting surface. On hot sunny days when this clay layer hardened, hatchlings were unable to penetrate the surface and in a few nests excavated in this area dead hatchlings were found. Also unusually heavy deposition of sand was observed at Matura in 1987 which could have presented some degree of difficulty to emerging hatchlings.

5. Important Sea Turtle Foraging Areas

Sea turtles have been observed feeding and swimming this year (1987) in the waters off the Bocas Islands (north west), Galera Point (north east) and Solado Rock (south west). Luxmoore and Groombridge (1987) cite foraging sites in Trinidad for the green turtle at Gulf of Paria, Toco, Grande Riviere Bay, Soldado Rock and Scotland Bay. Foraging sites in Tobago are Man O' War Bay, Buccoo Reef and Bon Accord Lagoon. For the hawksbill turtle, Salybia Reef, Maqueripe Bay and the north coast neat Toco in Trinidad and Man O' War Bay and Bon Accord Lagoon in Tobago were identified as foraging areas. For further information on Exploitation, see Appendix VIII).

6. Summary of Marine Turtle Research Projects in Trinidad, W.I. (Past, Present and Planned)

The following lists publications (scientific and popular) relating to marine turtle conservation and/or research in Trinidad and Tobago.

 Ingle, R.M. and F.G. W. Walton Smith. 1949. Sea turtles and the turtle industry in the West Indies, Florida and the Gulf of Mexico, with annotated bibliography. Spec. Pub. Marine Lab., University of Miami Press, Miami, Florida. 107 pp. (Leatherback breeding season May-June in Trinidad).

- 2. Carr, A.F. 1956 and rep. 1963. The Windward Road, Adventures of a Naturalist on Remote Caribbean Shores. Knopf, New York. 258 pp. (Trinidad's north coast, fishermen interviews; report of the "batali" (*Lepidochelys olivacea*) for the first time in Trinidad).
- 3. Bacon, P.R. 1967. Leatherback turtles. Jour. Trinidad Field Naturalist's Club: 2-3. (Brief summary of the presence of nesting *Dermochelys* in Trinidad).
- Bacon, P.R. 1969. The leather turtle project. Jour. Trinidad Field Naturalist's Club: 8-9. (Update of Bacon (1967); with 1967/1968 nesting reports and recommendations for conservation) summary of the presence of nesting *Dermochelys* in Trinidad).
- Bacon, P.R. 1970 Studies of the Leatherback turtle, *Dermochelys coriacea* (L.) in Trinidad, West Indies. Biol. Conserv. 2(3):213-217. (General descriptions of nesting colony; nesting adults; summary of breeding season (March to August). Nesting reports at Paria (north coast) and Matura (east coast; 150-200 estimated nesting in Trinidad; slaughters at Matura).
- 6. Status of Sea Turtle Conservation in Trinidad. 1970. Caribbean Conservation Association Environmental Newsletter 1(2) (Oct): 14-17.
- Bacon, P.R and G.K. Maliphant.1971. Further studies on sea turtles in Trinidad and Tobago with a guide to the common species and their hatchlings. Trinidad Field Naturalists Journal 1971: 2-17. (Nesting reports on north and east coast beaches. Adult measurements and timing of nesting. Matura nesting population estimated at 90-120 per year. Nesting reported at Grafton Estate, Tobago; Trinidad population estimated at 500-600, with 200-250 nesting per year).
- 8. Bacon, P.R. 1973. The status and management of sea turtles of Trinidad and Tobago. Report to the Permanent Secretary, Ministry of Agriculture. 40 pp. (mimeo). (Statistics on sales of turtle meat islandwide. Estimates 30% slaughter at Matura and 100% at north coast beaches near villages. Summarise existing relevant legislation with recommendations for enforcement. Turtle sanctuaries proposed at Paria and Matura).
- Bacon, P.R. 1973. Appraisal of the stocks and management of sea turtles in the Caribbean and adjacent regions. Reports to CICAR meeting in Cartagena, Colombia, July 1973. (Brief summary of Trinidad turtle situation; protection only from June 1 to September 30 (1952 regulations); actual catch in Trinidad waters estimated at over 50,000 pounds).
- Rebel, T.P. 1973. Sea turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico. University of Miami Press, Miami, Florida. 250 pp. (Revision of the Ingle and Walton Smith (1949). Sea turtle; landings for 1969 in Trinidad given as 11,747 pounds; quotes Bacon and summarises regulations).
- 11. Pritchard, P.C.H. 1973. International migrations of South American sea turtles (*Cheloniidae* and *Dermochelidae*). Anim. Behav., 21: 18-27. (Lists several Trinidad and Venezuelan tag recoveries for female *Lepidochelys olivacea* tagged while nesting in Suriname).
- 12. Bacon, P.R. 1975. Review of research, exploitation and management of the stocks of sea turtles in the Caribbean region. FAO Fisheries Circular No. 334:19 pp (mimeo). (Summarises information from other sources. Tobago Society for the Prevention of Cruelty to Animals offered TT \$50 to persons ensuring safety of nesting turtles; increased to TT \$75 in 1974; many turtles saved as a result).

- 13. Bacon P.R. 1976. Follow the turtle star. Trinidad Naturalist 1(3):12-16. (Leatherback nesting in Trinidad; includes folklore concerning the Turtle Star and the leatherback turtle is the "doctor turtle" visiting other turtles when they are sick).
- 14. Pritchard, P.C.H. 1976. Post-nesting movements of marine turtles (*Cheloniidae* and *Dermochelidae*) tagged in Guianas. Copeia 1976:749-754. (Eight Trinidadian recoveries of tagged Surinam *L. olivacea* reported, as well as 4 from Isla Marguarita and 13 from eastern Venezuela).
- 15. Hilton, A. 1977. My first turtle. Trinidad Naturalist 1(9):14-16.
- 16. Jones, A. and N. Sefton. 1978. Marine life of the Caribbean. London: MacMillan Caribbean. 89 pp.
- 17. Kenny, J.S. and P. R. Bacon. 1981. Aquatic resources. *In* P.R. Bacon and G.C. Cooper (eds.), The Natural Resources of Trinidad and Tobago. 112-144. London: E. Arnold.
- Bacon, P.R. 1981. The status of sea turtle stocks management in the Western Central Atlantic. WECAF studies No.7, UNDP 1-38. (Summarises nesting / foraging sites for each sea turtle species in Trinidad and Tobago. Estimates 400-500 female *Dermochelys* in Trinidad in 1972, 800-1000 in 1975. Proposed sanctuaries at Matura and Paria, Trinidad. Summarises regulations).
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- Nathai-Gyan, N. 1984. Marine Turtle Management in Trinidad and Tobago with Specific Reference to the Leatherback Turtle (*Dermochelys coriacea*). Wildlife Section, Forestry Division, Ministry of Agriculture, Lands and Food Production.
- 24. Pritchard, P.C.H. 1984. Marine Turtles: Trinidad and Tobago. Report on a Consultancy to the FAO. acting as Executing Agency for the UNDP, UND./FAO, Port-of-Spain.(Outlines the sea turtle situation in Trinidad and Tobago at present; summarises existing management strategies with recommendations; discuss problems faced by the five local species with suggestions for management).
- 25. Marine Turtle Management at Fishing Pond with Specific Reference to the Leatherback Turtle, *Dermochelys coriacea*. 1987. Wildlife Section, Forestry Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment.

26. Protection of Leatherback and Other Marine Turtles by the Forestry Division. 1987. Report submitted by the Wildlife Section, Forestry Division, to the Honourable Minister, Ministry of Food Production, Marine Exploitation, Forestry and the Environment.

References 1-5; 7-14 and 18-20 cited from Pritchard, 1984.

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In December 1983, the Wildlife Section, Forestry Division became involved in a long-term research project entitled "Nesting characteristics of Marine Turtles with Special Reference to the Leatherback turtle, *Dermochelys coriacea*. Objectives are listed hereunder:

- 1. To determine location, frequency and duration of nesting leatherback turtles;
- 2. To determine the degree of threat to turtle nesting (sand mining, poaching, predation);
- 3. To prepare management plans protecting both the turtles and their breeding environment;
- 4. To contribute data to both local and foreign bodies involved in marine turtle research.

7. Organizations concerned with marine turtle conservation/management in Trinidad & Tobago

The following persons / organizations have made contributions to the conservation / management of marine turtles in Trinidad and Tobago:

7.1 Governmental

 Forestry Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment: Long Circular Road St. James, Trinidad West Indies or

P.O. Bag 30 Port-of-Spain, Trinidad West Indies Phone: (809) 62-27476

- Fisheries Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment: St. Clair Port-of-Spain, Trinidad West Indies Phone: (809) 62-25481
- Wildlife sub-section, Forestry Section Tobago House of Assembly Studley Park, Tobago West Indies or

c/o Botanical Station Scarborough, Tobago West Indies Phone: (809) 660-2234 / 2428

- 4. Institute of Marine Affairs Hilltop Lane Chaguaramas, Trinidad West Indies Phone: (809) 634-4292-4
- Zoological Society of Trinidad and Tobago c/o Emperor Valley Zoo Royal Botanic Gardens Port-of-Spain, Trinidad West Indies Phone: (809) 62-23530
- 7.2 Non-Governmental:
- Trinidad Field Naturalist Club c/o Ms. Luisa Zuniaga (Sec.) Errol Park Road St. Ann's, Trinidad West Indies
- Point-a-Pierre Wildfowl Trust c/o Ms. Molly Gaskin 42 Sandown Road Goodwood Park Westmoorings, Trinidad West Indies Phone: (809) 63-75145
- Trinidad Naturalist Magazine 20 Collens Road Maraval, Trinidad West Indies Phone: (809) 62-26625
- Mr. Ishmael Samad c/o Natural History Library 11 MacDonnell Street Curepe, Trinidad West Indies Phone: (809) 64-53402
- Asa Wright Nature Centre P.O. Bag 10 Port-of-Spain, Trinidad West Indies
- Nature Angels Hiking Club c/o Mr. Anthony Dial La Canoa Road Pole No. 28 Lower Santa Cruz, Trinidad West Indies

8. Current laws or regulations concerning sea turtles

8.1 International

Trinidad and Tobago is signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) since 1984. The terms of this Convention regulate / prohibit commercial import or export of marine turtles or their products in signatory countries.

8.2 Domestic

- The Conservation of Wildlife Act, Chapter 67:01 of the Laws of Trinidad and Tobago, 1958 (App. IX) makes provision for the prosecution of anyone who kills, wounds, pursues, captures or molests by any method, any animal not listed in schedules to the Act. (The definition given for the word animal in Section 2 is "animal means any mammal, bird or reptile and includes the eggs, carcass, meat, nest or young thereof"). For marine turtles, this protection applies all year round while on land.
- The Fisheries Act, Chapter 67:51 of the Laws of Trinidad and Tobago, 1916 (App. X) includes regulations for the management of "fish" defined as including "oysters, crabs, shrimps, turtle, turtle eggs, corals and any species of other marine fauna.
- The protection of Turtle and Turtle Eggs Regulations, 1975 made under Section 4 of the Fisheries Act specifies that there must be a closed season on all capture and marketing of turtles from March 1st to September 30th (nesting season); that turtle eggs are protected at all times, and no female turtle may be caught either while on shore, within a reef, or within 1,000 yards of shore where there is no reef.

The apparent conflict between protection and utilization in these three pieces of legislation has been drawn to the attention of the Fisheries Division which supports our recommendations for amendments which eliminate utilization of marine turtles.

Over the period that the Wildlife Section started formal patrols of turtle nesting beaches, the only arrests made were of five poachers apprehended on the one road out of Vega De Oropouche (north east) in 1985 after a two-day stake-out by game wardens and a police officer. This resulted in at least six (6) court appearances spread over ten (10) months, legal bungling by defence attorneys, and eventually the case was dismissed with strong warnings to the defendants by the very concerned magistrate (Appendix III, p. 2).

Limited manpower and inability to limit access nesting beaches has made marine turtle protection at Matura and Fishing Pond exceedingly difficult. Towards this end recommendations have been made to restrict public entry to these areas during nesting season (App. XI).

9. Recommendations made to improve turtle management in Trinidad and Tobago

9.1 Assistance required from the police, Army and Coast Guard to patrol the turtle nesting beaches (increased manpower is essential)

9.2 Precepts, arms and communication equipment are required for Wildlife Officers. (Cutlasses are inadequate to deal with irate poachers).

9.3 Massive public education drive. This is already bearing fruit as evidenced by the furor in the news media this year over the wonton slaughter of leatherbacks (App. XII) and the increased number of people (members of the public) patrolling the beaches.

9.4 Declaration of turtle nesting beaches at Fishing Pond and Matura beaches a prohibited areas for the 1988 turtle nesting season to allow for regulation and monitoring of activities in these areas (App. XI).

9.5 Amendment to the fisheries Act, chapter 67:51 to remove harvesting of marine turtles.

9.6 Assistance from regional CITES management authorities in minimizing illegal transhipments of products through ports. A regional computer network for trade data would help to reduce this problem and informal approaches made for funding at the Sixth CITES meeting require follow-up.

C. PART 2

ATTACHMENTS OF WATS II SEA TURTLE SURVEY DATA FORMS

Due to the non-receipt of the above mentioned data forms, the data sheet used by the Wildlife Section, Forestry Division (App. XIII) is substituted and used as the basis for the summarizing process. Tables presented below outline the information collected for the period 1985 to 1987 at various nesting beaches throughout Trinidad. No information was available from Tobago.

TABLE 1. DATA COLLECTED FOR 1985

Location: Matura Beach

Date	No. To Total	urtles S Laid	Seen ¹ Did not Lav	Carca- sses ²	Average Length	Average Width	Moon Phase	Tide	Num- ber	Human Influ Origin ⁴	ence Activity	Beach Remarks Condit- ion ⁵
04/04 08/04	1 1		1 1		4'10" 4'10"	3'5" 3'5"	Full Full	Low High	6 2	Trinidadian Undeter-	Fishing Turtle	
10/04	2	2		1	4'11"	3'4"	L.Q.	Low	4	mined Undeter- mined	viewing Turtle viewing	
18/04 20/04	1 3	1 2	 1	2	4'0" 4'9"	3'0" 3'7"	N.M. N.M.	Low High	3	 Undeter- mined	 Turtle viewing	
24/04 26/04	4 6	4 1	 5	2	5'6' 4'8"	4'3" 4'2"	N.M. F.Q.	High Low	 35	ECIAF	 Turtle viewing	
30/04	1	1			4'4"	3'3"	F.Q.	High	5	Undeter- mined	Fishing	
05/05	13	12	1	3 (day time)	4'9"	3'8"	1.0	Low	30	Field	Turtle	
11/00	10	12	·		40	00	L.Q.	Low	00	Naturlist Club	viewing & research	
									6	British Embassy	Turtle viewing	
15/05 23/05	2	1	1	 2 (day time)			N.M.	Low				
24/05	2	2		1	4'8"	2'9"	F.Q.	Low	12	Undeter- mined	Turtle viewing	
24/05	13	9	4		5'3"	3'8"	F.Q.	High				
31/05	15	6	9		4′8″ 5'2"	3.5″	F.M.	High	40 60	Undeter- mined	l urtle viewing	
31/05	4	4			52	42	Γ.ΙΥΙ.	підп	00	Trinidadian & French	viewing	
01/06	15	13	2		5'1"	3'4"	F.M.	High	16	group Undeter- mined	Turtle viewing	
01/06	9	6	3		4'11"	3'8"	F.M.	Low	13	Undeter- mined	Turtle viewing	
13/06 14/06	5 9	4 9	1 		5'3" 5'2"	3'3" 4'0"	L.Q. L.Q.	High High	 14	 Undeter- mined	 Turtle viewing	
18/06	6	6			5'1"	3'9"	N.M.	Low	16	Undeter- mined	Turtle	
21/06	5	5			5'3"	3'8"	F.Q.	High	7	Undeter- mined	Turtle viewing	
21/06	4	4			5'1"	3'1"	F.Q.	High		Undeter- mined	Turtle viewing	

TABLE 1. DATA COLLECTED FOR 1985 (continued)

Location: Matura Beach

	No. Tu	urtles	Seen ¹						Huma	an Influence			
Date	Total	Laid	Did not Lav	Carca- sses ²	Average Length	Average Width	Moon Phase 3	Tide	Num- ber	Origin ⁴	Activity	Beach Condit- ion ⁵	Remarks
24/06	1	1			4'8"	3'10"	F.Q.	High	1	Undeter-	Turtle		
~~ /~~	~	~			014	4101			4.0	minea	viewing		
28/06	3	2	1		611	4′3″	F.Q.	High	16	Undeter- mined	l urtle viewing		
28/06	54	2	1		5'1"	3'10"	F.Q.	High	16				
29/06	6	4	2		5'0"	5'0"	F.Q.	High	16	Undeter- mined	Turtle viewing		
05/07	2	2			4'10"	3'8"	F.M.	High	20	Undeter-	Turtle		
								-		mined	viewing		
09/07	3	2			5'2"	3'11"	L.Q.	High	1	Undeter-	Turtle		
								-		mined	viewing		
11/07	2	1	1		5'3"	4'0"	L.Q.	Ris-	14	Undeter-	Turtle		
								ing		mined	viewing		
12/07	2	2			5'6"	3'7"	L.Q.	High	40	Undeter-	Turtle		
										mined	viewing		
12/07	1	1			5'5"	4'0"	L.Q.	High	56	Undeter-	Turtle		
										mined	viewing		
13/07	2	1	1		5'4"	4'1"	L.Q.	Ris-	56	Undeter-	Turtle		
								ing		mined	viewing		
13/07	2	1	1		5'4"	4'1"	L.Q.	Ris-	56	Undeter-	Turtle		
								ing		mined	viewing		
25/07	5	3	2		4'11"	4'1"	F.Q.	Fall-	22	Undeter-	Turtle		
								ing		mined	viewing		
27/07	5	5			5'9"	3'7"	F.Q.	High	4	Undeter-	Turtle		
										mined	viewing		
31/07	8	5	3		5'5"	3'5"	F.M.	Low	18	Undeter-	Turtle		
										mined	viewing		
							Tota	ls					
34	166	126	40	11	5'1"	3'6"			533				

Location: Fishing Pond

	No. T	urtles S	Seen ¹							Human Influ	uence	
Date	Total	Laid	Did not	Carca- sses ²	Average Length	Average Width	Moon Phase 3	Tide	Num- ber	Origin ⁴	Activity	Beach Remarks Condit-
22/04			Lay	5 (day time)								юп
24/04	4	4	0	1	6'1"	3'7"	N.M.	Low				
26/04	1	1	0	2	5'1"	2'11"	N.M.	Low	7	Trinidadian	Turtle viewing	
27/04	0	0	0	1			N.M.	Low				
01/05	2	2	0	0	5'4"	3'6"		High	7	Trinidadian	Fishing (suspected poachers)	

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TABLE 1. DATA COLLECTED FOR 1985 (continued)

Location: Fishing Pond

	No. T	urtles S	Seen ¹							Human Influ	ence		
Date	Total	Laid	Did not	Carca- sses ²	Average Length	Average Width	Moon Phase	Tide	Num- ber	Origin ⁴	Activity	Beach Condit-	Remarks
	_	-	Lay	-								ion °	
04/05	3	2	1	0	5'6"	4'2"	F.M.	Low					
08/05	5	3	2	0	5'0"	3'5"	F.M.	Low					
10/05	1	1	0	0	5'2"	3'6"	L.Q.	Ris- ina					
16/05	5	2	3	0	5'2"	3'10"	L.Q.	High	4	Trinidadian	Possibly poachers		
19/05	0	0	0	2	0	0	N.M.	Low			·		Daylight assess- ment
02/06	7	3	4	3	5'0"	3'6"	F.M.	Ris- ina	2	Trinidadian	Turtle viewing		
04/06	3	3	0	10	5'3"	3'7"	F.M.	Low	3	Trinidadian	Turtle		
05/06	2	2	0	0	5'3"	3'9"	L.Q.	Low					
10/06	0	0	0	2	0	0	L.Q.	Low					
14/06	3	2	1	0	5'2"	3'11"	L.Q.	Ris- ina					
15/06	2	1	1	0	5'2"	3'10"	L.Q.	Ris- ina	5	Trinidadian	Turtle viewing		
23/06	11	7	4	0	5'1"	3'5"	F.Q.	Ris- ing					
28/06	4	1	3	0	5'3"	3'7"	F.Q.	High	4	Trinidadian	Turtle viewing		
29/06	11	7	4	0	5'0"	3'7"	F.Q.	High	3	Trinidadian	Turtle		
05/07	1	1	0	0	5'6"	3'11"	F.M.	Ris- ina	9	Trinidadian	Turtle		
05/07	2	2	0	0	5'1"	3'8"	F.M.		8	Trinidadian	Turtle		
08/07	1	0	1	2			L.Q.	Fall-	15	Trinidadian	Turtle		
13/07	1	1	0	0	5'0"	3'8"	L.Q.	High	2	Trinidadian	Turtle		
03/08	22 0	hatchli bserve	ngs ed	2			F.M.	Low					
							Tota	ls					
24	69	45	24	30	5'3"	3'6"			69				

TABLE 1. DATA COLLECTED FOR 1985

Location: Grande Riviere

	No. Tu	urtles S	Seen ¹							Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca- sses ²	Average Length	Average Width	Moon Phase 3	Tide	Num- ber	Origin ⁴	Activity	Beach Condit- ion ⁵	Remarks
17/04			-	3 (day time)									
22/05	2	2	0	1	4'10"	3'7"	N.M.	Low	2	Trinidadian	Crab catching		
23/05	2	1	1	1	5'3"	3'9"	N.M.	Low	4	Trinidadian	Crab catching		
							Tota	ls			-		
3	4	3	1	5	4'8"	3'7"			6				

1. Refers to leatherback turtles except where stated otherwise.

- During 1985, leatherback carcasses were also observed at Maracas Beach (1), Las Cuevas Beach (5) in the north coast; Salibia Beach (5) in the northeast coast; Manzanilla Beach (6), Ortoire Beach (3), Guayaguayare (2) in the southeast coast. Some were caught in nets at Quinam (1), Moruga (1) in the south coast; and at Orange Valley Bay (4 hawksbill) in the west coast.
- 3. L.Q = last quarter; N.M. = new moon; F.Q. = first quarter; F.M. = full moon
- 4. It is assumed that where the origin is determined, these persons will most likely be nationals.

5. Beach conditions at:

- Matura Beach were more or less stabilized (cessation of sand-mining) except for the problem of beach litter/debris at various points along the beach.
- Fishing Pond Beach condition was favourable especially to the north, except for certain areas littered with beach debris and other areas with small pebbles/stones/
- Grande Riviere is a relatively small stretch of beach just off the secondary road and is affected by recreational activity; stray dogs and corbeaux (*Coragyps atratus*).

TABLE 2. DATA COLLECTED FOR 1986

Location: Matura Beach (Orosco & Rincon beaches)

	No. T	urtles S	Seen ¹							Human Influ	ence	nce Activity Beach Ren			
Date	Total	Laid	Did not	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit-	Remarks		
02/04	1	1			6'0"	3'6"	L.Q.	Low	6	USA, Trinidadian	Turtle viewing	Clear, wide	7 leath- erback nests ob- served; 1 hawksbill track-did not lay (Orosco)		
11/04	1	1			5'3"	3'6"	N.M.	Ris- ina	6	Undeter- mined	Turtle viewing	Heavily littered	Orosco		
11/04	1		1				N.M.	Ris- ing	3	Undeter- mined	Turtle viewing	Heavily littered	Turtle did not lay due to litter (Orosco)		
15/04	3	3			6'1"	3'7"	F.Q.	Low				Wide & littered	Rincon & Orosco 10 old nests		
25/04	3	3			5'0"	3'8"	F.M.	Low	20	Undeter- mined	Turtle viewina	Wide & littered	Orosco		
01/05	6	6			4'9"	4'2"	L.Q.	High	18	Undeter-	Turtle	Semi-	Orosco		
07/05	2	2			5'1"	3'4"	N.M.	Low	6	Undeter- mined	Turtle viewing & fishing	Wide	Orosco		
09/05	2	2			5'4"	3'3"	N.M.	Low	4	Undeter- mined	Fishing	Clear	Orosco		
16/05	1	1			4'6"	3'3"	F.Q.	Low	25	Undeter- mined	Fishing	Semi- littered, wide	Orosco		
17/05	2	1	1		5'0"	3'4"	F.Q.	Low	45	Undeter- mined	Fishing	Clear	Person found riding on a leath- erback		
21/05	4	3	1		5'4"	3'8"	F.M.	High	2	Undeter- mined	Turtle viewing	Littered			
06/06	1		1				N.M.	Fall- ing	4	Forest officers; undeter- mined	Turtle viewing	Clear & wide	Orosco		
07/06	20	18	2				N.M.	Ris- ing				Orosco semi- littered Rincon clear	Orosco (3 laid); Rincon (10 laid)		

TABLE 2. DATA COLLECTED FOR 1986 (continued)

	No. Turtles Seen ¹									Human Infl	uence		
Date	Total	Laid	Did not Lav	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit- ion	Remarks
20/06	3	3			4'11"	3'4"	F.Q.	Ris- ing	54	Undeter- mined	Turtle viewing	Wide & littered	Orosco
24/06	5	5			5'3"	3'8"	F.M.	High	5	Undeter- mined	Turtle viewing	Wide & littered	Orosco
26/06							F.M.	High	14	Undeter- mined	Turtle viewing	Littered	Orosco 3 old nests
03/07	1		1		4'9"	3'2"	L.Q.	Ris- ing	13	Undeter- mined	Turtle viewing	Heavily littered	Orosco
12/08							F.Q.	High	15	Univ. of Dundee, Scotland	Turtle viewing	Littered	Orosco 1 dead hatchling
28/08							L.Q.	Low					Orosco 28 hatchl- ings seen emerg- ing; 85 hatchling tracks
18	57	50	7	0	5'1""	3'6"	rota	15	305				

Location: Matura Beach (Orosco & Rincon beaches)

Location: Fishing Pond

	No. T	urtles S	Seen ¹							Human Influ	ience		
Date	Total	Laid	Did not Lay	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit- ion	Remarks
11/04				2; 1 recent	6'2"	2'10"	N.M.		5	Undeter- mined	Possibly slaughter- ed turtle		
17/04	1	1			4'10"	3'5"	F.Q.	High	8	Undeter- mined	Turtle viewing	Clear	115 eggs laid by 1 leather- back turtle
27/04	1	1			4'10"	3'4"	F.M.	High	22	Undeter- mined	Turtle viewing	Clear	
15/05				1 recent			F.Q.	High	4	Trinidad- ian; un- determined	Turtle viewing; possibly slaughter- ed turtle		

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TABLE 2. DATA COLLECTED FOR 1986

Location: Fishing Pond

Date	No. T	Turtles Seen ¹ Human Influence											
	Total	Laid	Did not Lay	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit- ion	Remarks
21/05	1	1		4	6'5"	3'5"	F.M.	Low	1	Trinidadian	Fishing	Littered	These 4 carcass- es recorded before
23/05	2		2				F.M.	Low	4	Undeter- mined	Turtle viewing	Littered ; sand too com- pact	
23/05	2		2				F.M.	Low	16	Undeter- mined	Turtle viewing	Littered ; sand too com- pact	
27/05	1	1			5'0"	3'7"	F.M.	Low				Wide & littered	
02/06	3	3		1	5'1"	3'6"	L.Q.	Low				Wide & littered	
13/06	6	6			4'8"	3'8"	F.Q.	High	9	Undeter- mined	Turtle viewina	Littered	
13/06	2	1	1		4'11"	3'4"	F.Q.	High	8	Undeter- mined	Turtle viewing	Littered	1 nest observ- ed to be poached
09/07	2	2		1	5'0"	3'8"	N.M.	Low	5	Undeter- mined	Turtle viewing	Clear	·
09/07 18/07	6 2	4	2 2		4'9" 5'1"	3'9" 3'11"	N.M. F.M.	Low Low	 10	 Undeter- mined	 Turtle viewing	Clear Littered	
07/08							N.M.	Low	17	Undeter- mined	Turtle viewing; 10 crab catching		
21/08				1-			F.M.	Low					Carcass, possibly 2 weeks
/09							_						1 olive ridley carcass found in debris
13	29	20	9	7	4'11"	3'7"	l'ota	IS	109				

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TABLE 2. DATA COLLECTED FOR 1986

Location: Manzanilla and Guayaguayare

	No. T	urtles S	Seen ¹							Human Influe	nce		
Date	Total	Laid	Did not Lay	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit- ion	Remarks
20/04							F.Q.						1 leath- erback nest was observ- ed with its con- tents removed
08/04							N.M.	Low					
16/05		5					F.Q.	Low				Clear	5 recent nesting sites were observ- ed (Guay.)
28/05							L.Q.	Low				Clear	
06/06							N.M. Total	Low Is				Clear	
			5 (Guaya	guayare)								

Location: San Souci & Toco beaches

	No. Tur	tles S	een 1							Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca- sses	Average Length	Average Width	Moon Phase 2	Tide	Num- ber	Origin ³	Activity	Beach Condit- ion	Remarks
10/05	4 nests			2; 3 days old									San Souci
							N.M.	Low					
	6 nests						Total	s					Тосо
1	10			2									

TABLE 2. DATA COLLECTED FOR 1986 *

Location: Grande Riviere

	No. Tu	rtles S	Seen ¹										
Date	Total	Laid	Did	Carca-	Average	Average	Moon	Tide	Num-	Origin ³	Activity	Beach	Remarks
			not	sses	Length	Width	Phase		ber			Condit-	
00/04	-		Lay				-					ion	
03/04	5			1			L.Q.	Low				Clear	
	nests			rec.								& wide	
				slaugh-									
				ter									
22/05	27												6 nests were van-
	nests												dalized by dogs
													and corbeaux; 3
													hawksbill nests
													seen: 1 hawkshill
													carcass
							Tot						0410435
2	22			4			TOL	215					
2	32			I									

* Comment: Leatherback carcass was also observed at Big Bay near Grande Riviere Beach

1. Refers to leatherback turtles except where stated otherwise.

2. L.Q = last quarter; N.M. = new moon; F.Q. = first quarter; F.M. = full moon

3. It is assumed that where the origin is determined, these persons will most likely be nationals.

TABLE 3. DATA COLLECTED FOR 1987

Location: Matura Beach¹

	No. Turtles Seen									Human Influence				
Date	Total	Laid	Did not Lay	Carca- sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks	
24/04	9	7	2				N.M.	Ris- ing	35	UWI	Students observing & recording information	Clear, wide	1 turtle with tag T1184 (Florida); 2 nests poached (for eggs)	
									63	Local &	Turtle		(101 0990)	
08/05	12	8	4		1.61	1.18	F.Q.	Ris-	35	Uniden-	Turtle	Clear		
08/05	5	4	1		1.44	1.1	F.Q.	Ris- ing	6 3	Uniden- tified Uniden-	Turtle viewing Fishing	Clear		
15/05	11	11		1	1.56	1.13	F.M.	Low	225	50 ECIAF	Turtle viewing & research			
										20 UWI	Turtle viewing & research			
										155 Uniden- tified	Turtle viewing	Clear	30 carcasses observed	
23/05	6	5	1		1.5	1.12	L.Q.	Low	61	Uniden- tified	Turtle viewing	Clear & flat	Scattered de- bris on beach; 1 nest washed away; 5 eggs relocated	
28/05	7	6	1		1.49	1.14	N.M.	Low	70	40, Cor- inth Te- acher College	Turtle viewing	Clear	1 nest relocat- ed immediately after nesting (too near water)	
										5, Univ. of Dundee	Turtle viewing			
										4, Ethopia, Holland, Belgium	Turtle viewing			
										21, Trinidad -ian	Turtle viewing			

TABLE 3. DATA COLLECTED FOR 1987 (continued)

Location: Location: Matura Beach¹

	No. Turtles Seen Human Influence												
Date	Total	Laid	Did not Lay	Carca- sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
07/06	11	10	1				F.Q.		Amt. not noted	St. An- drews Pres. Church	Turtle viewing		
										Piarco Village Sport & Cultural Youths	Turtle viewing		
12/06	6	6			1.62	1.12	F.M.	Ris- ing	78	52, UWI student	Turtle viewing	Clear	
										26, un- identifi- ed	Turtle viewing		
17/06	6	5	1		1.59	1.13	L.Q.	Low	57	Uniden- tified	Turtle viewing	Clear	35, hatchlings observed; beach severely eroded by
18/06	2	2			1.57	1.12	L.Q.	High	70	Uniden- tified	Turtle viewing	Clear	waves
26/06	2	2	1				N.M.	Fall- ing	10	3, Holland	Turtle viewing	Clear	
										1, Ethopia	Turtle viewing		
										1, Trin- idadian	Turtle viewing		
										5, uniden- tified	Turtle viewing		
28/06	4	3	2		1.52	1.12	N.M.	High	3	Uniden- tified	Turtle viewing	Clear	Gentle slope at one nesting site
02/07	3	3			1.58	1.21	F.Q	Low	2	Uniden- tified	Turtle viewing	Clear	Hatchling tracks observed
													1 hatchling dug

out (live)

TABLE 3. DATA COLLECTED FOR 1987 (continued)

Location: Matura Beach¹

	No. T	urtles	Seen							Human Inf	luence		
Date	Total	Laid	Did not Lay	Carca- sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
10/07	6	5	1		1.57	1.12	F.M.	Ris- ing	23	19, uniden- tified	Turtle viewing	Clear & wde	57 hatchlings observed 1 nest washed away, eggs scattered
										4, uniden- tified	risning		Stationed
15/07	6	6			1.54	1.14	L.Q.	Fall-	7	Univ. of	Turtle	Clear & wide	
29/07	1	1					N.M.	Fall- ing	7	4, Trinidad -ian	Turtle viewing	Clear & narrow	10 hatchling tracks seen
										3, Belaium	Turtle viewing		
06/08	2	2			1.6	1.2	F.M.	Low	7	Uniden- tified	Camping & fishing	Litter- ed; steep slopes; reduc- ed beach front	Dug up nests for hatchlings: # 1-25 dead, 3 alive, 1 track; # 2-2 tracks, 1 alive; # 3 -11 alive. Observed: # 4-20 emerg- ed from nest, 5 rescued from litter, 2 dead; # 5 exposed eggs, dog tracks
14/08							L.Q.	Low	6	Uniden- tified	4, turtle viewing 2, fishing	Semi- littered	Nest # 1-35 tracks seen; Nest # 2-28 tracks seen; Nest # 3-25 tracks seen; Nest # 4-20 tracks seen; Nest # 5-20 tracks seen; Nest # 6-34 tracks seen
TABLE 3. DATA COLLECTED FOR 1987(continued)

Location: Matura Beach¹

	No.	Turtles	s Seer	า						Human In	fluence		
Date	Tota	l Laid	Did not Lay	Carca sses	 Average Length (m) 	e Average Width (m)	e Moor Phase	n Tide e	e Num ber	n- Origin	Activity	Beach Condit- ion	Remarks -
21/08							N.M.	. Ris ing	- 4	Uniden- tified	Turtle viewing (one family)		Nest # 1-1 alive, 1 track observed; Nest # 2-1 track; Nest # 3- 23 tracks, 1 alive (dug-up nest); Nest # 4- 5 tracks; Nest # 5- 2 live dug up, remainder dead; Nest # 6- 1 alive
28/08							N.M.	. Ris ing	- 5 J	Uniden- tified	Turtle viewing	Heavily littered	y No hatchlings observed
20	99	86	14	1	1.55	1.15	То	otals	777	7			
Locati	on: Fi	ishing	Ponc	ł									
Date	No. T Total	urtles Laid	Seen Did not Lay	Carca- sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Human Influ Origin	uence Activity	Beach Condit- ion	Remarks
22/02							F.Q.		No num- ber recor- ded	Trinidad- ian	Fishing		5 nests observ-ed; 17 hatchling tracks seen
07/04				1			F.Q.	Ris- ing					9 nests observed, 2 poached for eggs; 1 carcass seen; 3 camps destroyed
16/04	2	1	1	4	1.45	1.05	F.M.	Ris- ing	37	Uniden- tified	18 fishing; 19 turtle viewing	Clear	

TABLE 3. DATA COLLECTED FOR 1987 (continued)

Location: Fishing Pond

Date	No. T	urtles	Seen						I	Human In	fluence		
	Total	Laid	Did not Lay	Carca- sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
28/04	6	5	1	1	1.56	1.24	N.M.	Ris- ing	8	Uniden- tified	Probably poachers	Clear	
30/04	3	3					N.M.	Ris- ing	7	Uniden- tified	Turtle	Littered	4 nest sites observed
04/05				15			F.Q.	Ris- ing			- 3		Day-time assessment: 15 carcasses counted & spray painted
15/05	5	3	2	1			F.M.	High	7	Uniden- tified	Fishing	Clear & wide	Note: 17 carcasses recorded to this date
30/06				2			N.M. T	Ris- ing otals					
Tot Patro	al ols ²	To Cam	tal e Up	Total Nesteo	Total d Not N	Did Nest	Tot Carcas	al sses ³	Aver Len (m	rage A gth Wi າ)	verage dth (m)	Human Influence	
8		1	6	12	4	24 di ha pl	4: Note, uplicatic ave take ace	some on may en	, , ,	5	1.15	59	

Location: Manzanilla and Guayaguayare beaches

	No. 7	urtles	s Seen						I	Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
14/05	1	1					F.M.	Fall- ing				Clear & wide	Manzanilla
04/06	6	4	2				F.Q.	Fall- ing				Littered & narrow	Daytime evaluation (Guayagua- yare)
07/06	8	5	3				F.Q.	Fall- ing				Littered & narrow	Night-time evaluation (Manzanilla)
			_				Т	otals					
3	15	10	5										

TABLE 3. DATA COLLECTED FOR 1987

Location: Grande Riviere

	No. T	urtles	Seen							Human Infl	uence		
Date	Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
08/04	3	3			1.5	1.21	F.Q.	Low	5	Uniden- tified	Turtle viewing	Clear & wide	
09/04	8	8			1.53	1.11	F.Q.	Low	23	Uniden- tified	Turtle viewing	Clear	1 nest dug up by dogs; 1 nest poached
06/05	7	7		1			F.Q.	Ris- ing				Clear	
25/06	5	4	1	1	1.57	1.2	N.M. T	Ris- ing otals				Clear	Dogs seen eating eggs; hundreds of eggs exposed due to erosi- on; hatchling tracks observed
4	23	22	1	2	1.53	1.17			28				

Location: San Souci

No. T	urtles	Seen							Human Influe	ence		
Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
3	1	2		1.55	1.13	F.Q.	Ris- ing				Wide & flat	2 poached nests observ- ed; reports of villagers re- moving buck- ets of eggs the previous
1	1					F.Q. T	Ris- ing otals				Wide & flat	
+	No. I Total 3	Total Laid	No. Turties Seen Total Laid Did not Lay 3 1 2 4 1	No. Turties Seen Total Laid Did Carca not -sses Lay 3 1 2 4 1	No. Turties Seen Total Laid Did Carca Average not -sses Length Lay (m) -3 1 2 4 1	No. Furties Seen Total Laid Did Carca Average Average Average not -sses Length Width Lay (m) (m) (m) 3 1 2 1 1 1.55 1.13	No. Furties Seen Total Laid Did Carca Average Average Moon not -sses Length Width Phase Lay (m) (m) * 3 1 2 1.55 1.13 F.Q. 4 1 F.Q. T	No. Turties Seen Total Laid Did Carca Average Average Moon Tide not -sses Length Width Phase Tide Lay (m) (m) * * 3 1 2 1.55 1.13 F.Q. Rising 1 1 F.Q. Rising Totals 4 2 2 2 F.Q. Rising	No. Turties Seen Total Laid Did Carca Average Average Moon Tide Numnot not -sses Length Width Phase ber ber Lay (m) (m) * * 3 1 2 ing -3 1 2 1.55 1.13 F.Q. Ris- ing ing Totals Totals ing	No. Turties Seen Human Influe Total Laid Did Carca Average Average Moon Tide Num- Origin not -sses Length Width Phase ber ber Lay (m) (m) * * • • • 4 3 1 2 1.55 1.13 F.Q. Ris- ing 1 1 F.Q. Ris- ing 4 2 2 2 F.Q. Ris-	No. Turties Seen Human Influence Total Laid Did Carca Average Average Moon Tide Num- Origin Activity not -sses Length Width Phase ber ber Lay (m) (m) * ing 4 3 1 F.Q. Ris- ing Totals F.Q. Ris-	No. Turties Seen Human Influence Total Laid Did Carca Average Average Moon Tide Num- Origin Activity Beach not -sses Length Width Phase ber Origin Activity Beach Lay (m) (m) * 3 1 2 1.55 1.13 F.Q. Ris- Wide & flat 4 1 F.Q. Ris- Wide & flat 4 2 2 2 F.Q. Ris-

Location: North Coast ⁴ (Paria Bay) (Hike from 10/06/87 to 12/06/87)

	No. T	urtles	Seen							Human Infl	uence		
Date	Total	Laid	Did	Carca	Average	Average	Moon	Tide	Num-	Origin	Activity	Beach	Remarks
			not	-sses	Length	Width	Phase		ber			Condit-	
			Lay		(m)	(m)	*					ion	
10/06	5	5					F.M.	Ris- ing	3	Trinidad- ian	Fishing & observing	Clear & wide	20 old nests observed

Trinidad and Tobago National Report to WATS II (1987)

TABLE 3. DATA COLLECTED FOR 1987

Location: Petite Tacaribe

Date	No. T Total	urtles Laid	Seen Did	Carca	Average	Average	Moon	Tide	Num-	Human Influe Origin	ence Activity	Beach	Remarks
Date			not Lay	-sses	Length (m)	Width (m)	Phase *		ber	2 · · g		Condit- ion	
11/06			1				F.M.	Ris- ing				Clear & wide	25 nests counted
Locati	on: G	rand T	Facari	be									
	No. T	urtles	Seen							Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
11/06							F.M.	Ris- ing				Clear & wide	108 old nests observed; 259 hatchling tracks observed; 1 nest raided by dog (exc. nesting beach)
Locati	on: M	urphy	Вау										
	No. T	urtles	Seen							Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
10/06	3	2	1		1.58	1.14	F.M.	Ris- ing				Clear & wide	24 old nests observed

Location: Madamas Bay ⁵

	No. Turtles Seen Human Influence Date Total Laid Did Carca Average Average Moon Tide Num- Origin Activity Beac not -sses Length Width Phase ber Lay (m) (m) * 1/20 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5												
Date	Total	Laid	Did not	Carca -sses	Average Length	Average Width	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit-	Remarks
11/06	6	5	Lay 1	1	(m) 1.45	(m) 1.05	F.M.	Ris-				Clear &	128 hatchlings
								ing				wide	observed emerging

TABLE 3. DATA COLLECTED FOR 1987

Location: "AZ WEE"

	No. T	urtles	Seen						I	Human Influe	ence		
Date	Total	Laid	Did not Lay	Carca -sses	Average Length (m)	Average Width (m)	Moon Phase *	Tide	Num- ber	Origin	Activity	Beach Condit- ion	Remarks
11/06							F.M.	Ris- ing					8 nests observed

- 1. At Matura Beach, hatchlings were observed as early as January (from last season's nesting). Also, it was the first time that hatchling emergence was followed up so late in the season (up to late August / September) and results indicate an average of about 25 hatchlings per nest.
- 2. At fishing Pond, fewer patrols were conducted since Officers' lives were seriously threatened by poachers.
- 3. The number of carcasses, despite the warning of duplication, could in fact be much greater than the figure given.
- 4. As stated previously, the beaches along this coast are inaccessible and provide an excellent nesting habitat (wide, clear, sandy beach) for marine turtles, especially the leatherback.
- 5. Entire beach literally covered with old nests.
- * Moon phases: L.Q = last quarter; N.M. = new moon; F.Q. = first quarter; F.M. = full moon

D. PART 3

ATTACHMENTS OF ANY OTHER SEA TURTLE INFORMATION

		<u>Appendix</u>
1.	Wildlife Section, Forestry Division. 1987. Marine Turtle Management at Fishing Pond with Specific Reference to the Leatherback Turtle	XIV
2.	James, C. 1983. Highlighting Wildlife, Basic Information on Wildlife Conservation in Trinidad and Tobago. The Leatherback Turtle, pg. 41-44	XI
3.	Ramquar, J. 1983. Save the Leatherbacks. <i>In</i> James, C. (1983). Highlighting Wildlife, Basic Information on Wildlife Conservation in Trinidad and Tobago, pg 50	XVI
4.	Arneaud, W. 1987. The Leatherback Turtle of Trinidad	XVII
5.	Publicity Material Prepared by Garry De Freitas, Forestry Division's Artist (Cartoons, Posters, Illustrations)	XVIII
6.	Photograph of a Leatherback Carcass	XIX
7.	Photograph of a Leatherback's Nest and Eggs	XX

APPENDIX I

Excerpts from Proceedings of the 2nd Working Meeting of Marine Turtle Specialists. Bacon, P.R. 1971. Sea Turtles in Trinidad and Tobago. IUCN publ., pages 79-83.

Paper No. 13

SEA TURTLES IN TRINIDAD AND TOBAGO¹

by P.R. Bacon University of the West Indies, Trinidad

General

Sea turtles are listed for attention in the marine research programme of the Trinidad and Tobago Government but the Fisheries Department has no active programme of study, exploitation or conservation of this resource. The collection of turtle statistics at the various fishing centres is not continued although records are kept in some of the wholesale fish markets.

Information on the sea turtles of Trinidad and Tobago is thus very limited, as it is from most other Caribbean islands, which is one reason why no report from this area was received at the previous meeting of the Marine Turtle Group in 1969. It is only since 1965 that any interest has been paid to turtles in Trinidad and Tobago by naturalists attached to the Trinidad Field Naturalists' Club. The Club, which is composed mainly of amateur personnel, has concentrated on patrols on easily accessible beaches where basic nesting data have been recorded.

Species

Four species are known to nest regularly in Trinidad, which are, in order of abundance

- Dermochelys coriacea, known locally as "caldon or coffinback"
- Chelonia mydas, "greenback"
- Eretmochelys imbricata, "hawksbill"
- Lepidochelys olivacea, "batali".

There is one nesting record for the north coast of Trinidad in July 1970, which was almost certainly the loggerhead *Caretta caretta*. This species is seen frequently by fishermen off the north coast but was not known previously to nest in the island.

To date, only the leatherback, green and hawksbill turtles have been recorded in Tobago.

Nesting Areas

Most of the nesting is confined to the north and east coasts of Trinidad, where almost any beach of any size has been used during the last few years. Absence of nesting on the south coast is probably due to the presence of steep cliffs with little sand below, while the west coast is predominately muddy with coastal mangrove swamps.

Nesting has been studied in greatest detail on Matura beach on the east coast as this is readily accessible. This beach is probably the most important nesting area for leatherbacks. The green and hawksbill turtles nest mainly on the north coast and around islands between Trinidad and Venezuela, where these species can be seen feeding and resting during most months of the year.

In Tobago, leatherback nesting appears to be confined to the more sandy leeward coast, especially near Plymouth. Green and hawksbill turtles nest in small numbers all around the island and small individuals can be seen feeding in the reefs throughout the year.

^{1.} This report contains the personal views of the author and does not necessarily represent the view of the Trinidad and Tobago government.



Fig 1: Map of the islands of Trinidad and Tobago, showing the main turtle nesting areas.

Relative Abundance

Except for *Dermochelys*, no data are available on the numbers of sea turtles nesting each year in Trinidad Tobago, or on the numbers killed on the beaches or at sea.

The leatherback nesting population for the whole island of Trinidad is estimated at from 200 to 250 mature females each season, with about 50% of this centred on the east coast at Matura Bay. The Tobago population numbers only a few dozens. Compared with the nesting populations of neighbouring Guyana and Surinam, the Trinidad and Tobago turtle populations are very small. They are, however, probably larger than those of most other Caribbean islands, few of which have all five species nesting.

Exploitation

Little accurate information is available on the degree of exploitation. All turtles seen nesting on the north coast beaches are killed by local villagers and a large number of immature ones are taken in beach seines. A sufficient number of greens and hawksbills are caught at sea off the north coast to keep about 20 pirogues occupied during April, May and June. None of the fishermen are entirely dependent for his livelihood on harpooning and netting turtles as, during this period, ordinary fishing is neglected. All the meat and eggs are used for home consumption or sold in local markets. A number of hotels, especially in Tobago, also purchase turtle meat, and green and hawksbill shell is sold locally.

Conservation

1. Legislation

At the present time, the Protection of Turtle and Turtle Eggs Regulations, 1952, are in force (see Annex). As will be noted, these regulations under the Fisheries Ordinance prohibit killing of turtles, removal of eggs and the sale of meat or eggs only from the 1 June to the 30 September in any year. They are, therefore, very unsatisfactory as the sea turtles are not protected during April and May when most of the nesting takes place.

The Fisheries Department, under whose auspices turtle protection falls, does not have wardens to patrol beaches or visit fishing centres. Consequently, law enforcement falls on the civil police who are already overburdened. The Fisheries Department does not have representation on the Wild Life Conservation Committee that advises the Government through the Ministry of Agriculture, Lands and Fisheries. The Forestry Department is represented on this advisory committee and their game rangers have been assisting the Field Naturalists' Club over the past few years. The game rangers can exercise their authority only during the close season for the hunting of animals on land, thus giving some protection to turtles on the beaches from 01 April to 30 September. Administrative confusion of the nature indicated by the situation greatly hampers progress in turtle conservation.

2. Education

During the last three years, lectures have been given to schools, clubs and societies in both Trinidad and Tobago on the need to conserve turtles. Propaganda of this sort has met with a warm response and large numbers of interested persons have accompanied beach patrols, making things more difficult for the poachers.

<u>Research</u>

Up to the present time research has been concerned almost entirely with *Dermochelys*. For this species, the nesting season is from March to August, possibly September, with most nesting taking place in April, May, and early June. The majority of the nesting females emerge from the sea around 9 p.m. and midnight, spending about one and a half hours on the beach. The dimensions of the nesting females do not differ significantly from those recorded elsewhere. Mean carapace length for all *Dermochelys* measures on Trinidad beaches from 1968 to 1970 was 158 cm with a range from 125 to 185 cm. Carapace widths averaged 106 cm with a range of 75 to 121 cm.

Tagging was begun in 1970. From the 16 leatherbacks tagged on Matura beach there were two tag returns indicating re-nesting intervals of 10 and 11 days respectively.

Small round holes through the fore flipper of the nesting females have been seen commonly in Trinidad leatherbacks. Three of the 16 animals tagged on Matura beach in 1970 had these holes. These may be holes left after old tags have fallen out, which would indicate that the animals had come from other nesting areas where tagging had been carried out before 1970.

Other records for *Dermochelys* include: clutch sizes from 65 to 130 eggs; adults observed eating jellyfishes, *Physalia* and *Stomolophus* in coastal waters; the high incidence of fresh injuries on females arriving at the nesting sites; the presence of the commensal barnacle *Platylepas* on the carapace and limbs; and the great loss of eggs due to beach erosion, especially at the start of the wet season in early June.

Intended Research

Beach patrols will be continued throughout 1971. One group will concentrate on Matura beach to collect further data on leatherbacks and others will work on the north coast to gather data on the nesting of the other species. During the 1971 season we intend to seek the services of a fisherman from the fishing cooperative at Toco to collect turtle exploitation statistics. He would be able to record the date and location of all turtles caught at sea, measure and weigh them before they were slaughtered and follow the marketing of the meat from other fishermen and villagers he could obtain some nesting data in addition. It would be possible from this

information to estimate the amount of exploitation of turtles, at least in this area, which is necessary before discussions on turtle conservation in Trinidad and Tobago can proceed further. We are approaching various local organizations for funds for the project that can be carried out better by someone resident in the north than by any members of the Field Naturalists' Club visiting the area in their spare time. Further lectures to schools are planned for 1971, although it will not be possible to reach many districts. Funds are required urgently for the printing of literature for distribution to schools and village community centres.

At the end of the turtle nesting season we hope to advise the Trinidad and Tobago Government on the revision of the laws to give adequate protection to all species during their breeding period. It would help greatly to know what other territories, particularly in the Caribbean, are doing in this respect to protect similar small populations of sea turtles.

ANNEX

Government Notice No. 192 Trinidad and Tobago

Regulations made by the Governor in Council under Section 3(1) (c) of the Fisheries Ordinance, Ch. 25 No. 9

1. These Regulations may be cited as the Protection of turtle and turtle Eggs Regulations, 1952.

- 2. It shall not be lawful for any person between the 1st day of June to the 30th day of September in any year to take or remove or cause to be taken or removed any turtle eggs after they have been laid and buried by the female turtle or after they have been buried by any person.
- 3. It shall not be lawful for any person between the 1st day of June to the 30th day of September in any year to be in possession of or to offer or expose for sale, or to cause to be offered or exposed for sale, or to purchase turtle eggs.
- 4. It shall not be lawful to catch, kill, or harpoon or otherwise take possession of any turtle or to offer or expose for sale, or to cause to be offered or exposed for sale, or to purchase turtle or turtle meat between the 1st day of June to the 30th day of September, in any year.
- 5. These Regulations shall not apply to turtles, turtle meat or turtle eggs lawfully imported into the Colony. Provided that the onus of proving that the same was lawfully imported into the Colony shall be on the person alleging the same.
- 6. Any person who contravenes these regulations shall on summary conviction be liable to a fine of forty-eight Dollars or to imprisonment for two months.
- 7. The Protection of Turtle and turtle Eggs Regulations, 1951 are hereby repealed

Dated this 14th day of October, 1952

W.S. Archer Acting Clerk, Executive Council

Approved by resolution of the Legislative Council this 14th day of November, 1952 G.E. L. LaForest Clerk, Legislative Council

APPENDIX II

Pritchard, P.C.H.1984

Marine Turtles in Trinidad and Tobago. Report on a Consultancy to the Food and Agriculture Organization for preparation of plans for the management of marine turtles.

MARINE TURTLES IN TRINIDAD AND TOBAGO

Report on a Consultancy to the Food and Agriculture Organization for preparation of plans for the management of marine turtles. 1984.

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Literature Cited

Marine Turtles in Trinidad and Tobago

BACKGROUND

The marine turtle fauna of Trinidad and Tobago is more diverse than that of most Caribbean islands, and has been unusually well-studied since the 1960's. Initially these studies were conducted by volunteer patrols organized by the Trinidad Field Naturalists' Club. In recent years, detailed surveys of both nesting and non-nesting marine turtles in Trinidad and Tobago have been conducted by the Institute of Marine Affairs, while visitors such as A. Carr and A. Meylan have also added to knowledge of marine turtles in the country. Important publications (scientific and popular) and research reports relating to the marine turtles of Trinidad and Tobago include those listed below (in chronological order):

- Ingle, R.M. and F.G.W. Walton Smith. 1949. Sea turtles and the turtle industry of the West Indies, Florida, and the Gulf of Mexico, with annotated bibliography. Spec. Publ. Marine Lab. Univ. Miami, Florida. Univ. of Miami Press, Miami, 107 pp. (Leatherback breeding season May-June in Trinidad).
- ii. Carr, A.F. 1956. The Windward Road. Alfred Knopf, New York, 258 pp. (Described the northern coast of Trinidad and interviews with fishermen; reports the "batali" (*Lepidochelys olivacea*) for first time from Trinidad).
- iii. Bacon, P.R. 1967. Leatherback turtles. Jour. Trinidad Field Naturalists' Club, 1967: 2-3. (A brief summary of the presence of nesting *Dermochelys* in Trinidad).
- iv. Bacon, P.R. 1969. The leatherback turtle project. Jour. Trinidad Field Naturalists Club, 1967: 8-9. (An update of Bacon (1967), with reports of nesting in 1967 and 1968 and recommendations for conservation).
- v. Bacon, P.R. 1970. Studies of the leatherback turtle, *Dermochelys coriacea* (L.) in Trinidad, West Indies. Biol. Conserv. 2 (3): 213-217. (General description of the nesting colony, with description of nesting adults, summary of breeding season (March to August) and identification of nesting on north and east coasts, especially at Paria and Matura beaches. Estimated the nesting colony as numbering "considerably more than 100 per year" at Matura alone, and 150-200 nesting annually in Trinidad as a whole. Documents slaughter of 23 nesting adults at Matura Bay in 1968, and 13 in northern section alone of Matura in 1969).
- vi. Bacon, P.R. and G. K. Maliphant. 1971. Further studies on sea turtles in Trinidad and Tobago with a guide to the common species and their hatchlings. Trinidad Field Naturalists Journal, 1971: 2-17. (Nesting was reported at Matura, Cumana, and Balandra on east coast, and at Big Bay, Toco, Paria, Valentine's, Gran Murphy, Petit Tacarib, Gran Tacarib, Madamas, Cachipa, and Las Cuevas on north coast. Dimensions of adults and timing of nesting were discussed. Matura nesting population estimated at 90-120 females per year; an average of 1.5 nestings per night was recorded on the northern section of Matura. The total Trinidad population was estimated at 500-600 female *Dermochelys*, with 200-250 nesting in a given year. Regular nesting was discovered at Grafton Estate, Tobago (up to 5 per night). Summan data are presented for the other sea turtle species in Trinidad, including a nesting record for *Lepidochelys* at Matura and also one for *Caretta* at Las Cuevas. However, photograph shows the latter to be a hawksbill (*Eretmochelys*). An identification key to Trinidad sea turtles is provided).
- vii. Bacon, P.R. 1973. The status and management of sea turtle resources of Trinidad and Tobago. Report to the Permanent Secretary, Ministry of Agriculture. 40 pp (mimeo). (Summarizes available information on sea turtles in Trinidad and Tobago. Fragmentary

statistics for turtle meat sold on beaches at Icacos, Carenage, San Fernando, Matelot, Grand Chernin, and Mayaro are listed. Author estimates that 30% of the nesting females at Matura are killed annually, and nearly 100% of turtles nesting on north coast, adjacent to villages. Existing protective legislation is summarized, and strong recommendations are given for improved law enforcement. It is also recommended that turtle sanctuaries be declared at Paria and Matura).

- viii. Bacon, P.R. 1973. Appraisal of the stocks and management of sea turtles in the Caribbean and adjacent regions. Report to CICAR meeting in Cartagena, Colombia, July 1973. (A brief summary of the Trinidad turtle situation; turtles and eggs protected only between June 1 and September 30 under 1952 regulations. Annual catch in Trinidad waters probably over 50,000 pounds. Regulations not enforced).
- ix. Rebel, T.P. 1973. Sea turtles and the turtle industry of the West Indies, Florida, and the Gulf of Mexico. Univ. Miami Press: 250 pp. (A book-length revision of Ingle and Walton Smith (1949). Sea turtle landings for 1969 in Trinidad given as 11,747 pounds. Quotes information from Bacon and summarizes regulations).
- x. Pritchard, P.C.H. 1973. International migrations of South American sea turtles (*Cheloni-idae* and *Dermochelidae*). Anim. Behav., 21: 18-27. (Lists several Trinidadian and Venezuelan tag recoveries for female *Lepidochelys olivacea* tagged while nesting in Suriname).
- xi. Bacon, P.R. 1975. Review of research, exploitation and management of the stocks of sea turtles in the Caribbean region. FAO Fisheries Circular No. 334:19 pp (mimeo). (Summarizes information from above sources; also reports that the Society for the Prevention of Cruelty to Animals in Tobago offered rewards of \$50 TT to persons ensuring that nesting turtles returned safely to the sea. Rewards increased to \$75 in 1974, and many turtles were protected in this way).
- xii. Pritchard, P.C.H. 1976. Post-nesting movements of marine turtles (*Cheloniidae* and *Dermochelyidae*) tagged in the Guanas. Copeia, 1976: 749-754. (Eight Trinidadian recoveries of tagged Surinam *L. olivacea* reported, as well as 4 from Isla Margarita and 13 from eastern Venezuela).
- xiii. Bacon, P.R. 1976. Follow the turtle star. Trinidad Naturalist, 1 (3): 12-16. (A popular account of leatherback nesting in Trinidad. Includes folklore accounts of how turtles nest when the turtle star is shining and that the leatherback turtle is the "doctor turtle" which is visited by other turtles when they are sick).
- xiv. Bacon, P.R. 1981. The status of sea turtle stocks management in the western Central Atlantic. WECAF studies No. 7, UNDP: 1-38. (Summarizes nesting and foraging locations for each sea turtle species in Trinidad and Tobago. Estimates 400-500 total female *Dermochelys* in 1972 in Trinidad, 800-1,000 in 1975. Only sanctuary is Buccoo Reef Marine Park in Tobago; proposed sanctuaries at Mature and Paria, Trinidad. Summarizes regulations, including ban on taking any female turtle within 1,000 feet of shore, and complete protection of eggs)
- xv. Carr, A.F., A. Meylan, K. Bjorndal, and T. Carr. 1982. surveys of sea turtle populations and habitats in the western Atlantic. NOAA Technical Memorandum NMFS-SEFC-91. Pp 1-82. (Reports nesting of two green turtles at Mayaro, and also a hawksbill at Brigand Hill (i.e., Manzilla Beach). Also reports hawksbill nesting on Tobago, and dead leatherbacks on beaches of Tobago in 1977. Important migratory route for turtles along northern coast of Trinidad. Turtle populations in general are seriously depleted following heavy exploitation).

xvi. Chu Cheong, L. 1984. (Mimeographed summary of a three-year study of Trinidad sea turtles. Gives extensive information on nesting beaches, census of nesting animals, beach dynamics, market surveys and fisheries statistics, laboratory hatching and hatchling nutrition studies, and head-starting of hawksbills. Data presented in summary form at West Atlantic Turtle Symposium, WATS 1).

COORDINATION OF AGENCY AND INDIVIDUAL RESPONSIBILITIES

Trinidad is in the unusual and fortunate position of having a variety of individuals, distributed among several governmental and non-governmental organizations, who have demonstrated a major commitment to marine turtle research, conservation, and management. Among such organizations, the Institute of Marine Affairs (IMA), the Trinidad Forestry Department, the Point-a-Pierre Wild Fowl Trust and the Trinidad Field Naturalists' Club are pre-eminent.

The responsibilities that each of these organizations has selected for itself in the field of marine turtle activities are substantially non-overlapping, and even where interests or responsibilities partially coincide, the logical policy is one of supplementation of effort rather than conflict or competition. While there have not been serious conflicts in the past, there is the potential for closer coordination and sharing of data, and it is strongly recommended that this take place.

In order to ensure harmonious coordination of marine turtle activities in Trinidad/Tobago in 1985 and subsequent years, it is proposed that a planning meeting be held in early 1985, at which individuals involved with sea turtle work should plan the sharing of research and management responsibilities for the season. These responsibilities will include the following:

a) Laboratory research, including a "head-starting" program for the hawksbill turtle

The Institute of Marine Affairs would logically be the lead agency for this work, requesting assistance from other agencies (e.g., forestry, for assistance in acquisition of eggs or hatchling turtles from patrolled beaches) when this is needed.

b) Beach patrols, primarily for purposes of law enforcement

This should continue to be the primary responsibility of Forestry. However, to the extent possible, research personnel should accompany these patrols. These individuals may be from IMA, the Field Naturalists' Club, or elsewhere. They would be responsible for tagging nesting turtles, observing the number and species of turtles nesting, evaluating nesting and hatching success, and any other research that is thought appropriate or desirable.

c) Educational activities

These would be the primary responsibility if the non-governmental sector as long as such organizations (Point-a-Pierre Wild Fowl Trust, the Field Naturalists' Club, etc.) were willing to make a commitment to this undertaking. Such educational activities would be conducted partially in the classroom (using slide shows or other audio-visual presentations as far as possible, together with an expert "resource person" to give commentary and answer questions), and partially in the field, by taking groups of young people to nesting beaches and having them watch turtles nesting. Such groups must be closely supervised or they could cause more harm than good. The person in charge of the group should have a detailed knowledge of turtle biology and behaviour, should ensure that rowdy behaviour, uncontrolled use of flashlights, etc., do not occur, and so on. While it is not easy for the Consultant to give a fixed maximum size for such groups, experience should quickly suggest how many people are "manageable," and can be kept together and can observe turtles nesting without forming an excessive crowd or getting in each other's way. These educational beach patrols should be accompanied whenever possible by a representative of the Forestry Department or Fisheries so that any poachers encountered can be apprehended, and so that the young participants can receive direct instruction on law enforcement topics from the agency representative.

Further details of proposed educational activities, endorsed by the Consultant, may be found in the Draft Trinidad Turtle Recovery Plan submitted to the Wider Caribbean Sea Turtle Recovery Team (WIDECAST) by M.R. Gaskin.

d) Nesting and pelagic turtle surveys

Institute of Marine Affairs would be the logical organization to conduct these surveys, which need not be continuous but which are important in order to maintain monitoring of the overall turtle populations in Trinidad and Tobago. The monitoring will clarify whether the enhanced levels of nesting by the leatherback turtle in Trinidad in 1984 is a sign of an overall population increase or just an isolated year of heavy nesting. If possible, National Security will continue to make its helicopters available for these surveys. Flights should be coordinated among the interested parties (e.g. IMA, Field Naturalists) and data shared freely.

e) Incidental catch surveys

These are described more fully elsewhere in this report. It is anticipated that IMA would be the lead agency.

f) Monitoring of terrestrial habitat alteration

Examples of undesirable alteration of sea turtle nesting beach habitat include beach sand mining and establishment of illuminated development behind nesting beaches, which can both deter turtles from nesting and also attract hatchlings from nests that were made inland, away from the sea, which may greatly increase the neonatal mortality. The Institute of Marine Affairs, Forestry, and non-governmental groups should combine in their efforts to prevent activities or developments of these kinds, and jointly monitor both occurrence and effects of such disturbances.

LEGISLATION AND ENFORCEMENT

i. International Conventions

Trinidad and Tobago became a signatory to the Convention on Trade in Endangered Species of Flora and Fauna (CITES) in 1984; the Instrument of Accession to the Convention was signed by Dr. Basil Ince, Minister of External Affairs of Trinidad and Tobago, in February 1984.

The terms of this Convention require that there be no commercial import or export of marine turtles or their products in signatory countries. Publicity for and enforcement of this Convention is critical if it is to be effective in Trinidad and Tobago. Posters notifying travellers of the kinds of wildlife product that are now prohibited should be displayed in critical locations, including Piarco Airport. Effective displays can often be made from confiscated items, advising importers that they too will have their goods seized if they import or export them illegally. Customs officers sat both marine and air points of arrival should be thoroughly briefed on the terms off the Convention.

ii. Domestic Legislation

The 1963 Conservation of Wild Life Act empowers any Game Warden (including Honorary Game Wardens) or Constable with enforcement authority for regulations concerning the protection or management of any non--domestic mammal, bird, or reptile. This Act thus includes management authority for marine turtles, which of course are reptiles.

The 1975 Fisheries Act overlaps in scope with the Conservation of Wild Life Act in that it includes regulations for management of turtles and turtle eggs in addition to all other marine fauna. This Act specified that there must be a closed season on all capture and marketing of turtles from March 1 to September 30; that turtle eggs are protected at all times; and that no female turtle may be caught either while on shore, within a reef, or within 1,000 yards of shore where there is no reef. Enforcement is the responsibility of Fisheries Officers.

These regulations are soundly based, but minor modifications are recommended:

a) Both Acts (i.e. Wild Life and Fisheries) should specify that any law enforcement agent, including Fisheries Officers, Game Wardens, and their deputies, Constables, and others, should have authority to enforce turtle protection regulations. Until the law can be changed in this way, Forestry Officers and other law enforcement officers should be accorded status of Deputy or Honorary Fisheries Officers if legal provision exists for this to be done. Such spreading of enforcement authority is a pragmatic necessity; offences may occur anywhere on Trinidad and Tobago's long coastline, or inland in local markets, and no single agency can field an adequate cadre of enforcement officers to ensure compliance with the regulations. Also, if a Forestry Department patrol should encounter a turtle poacher, it may theoretically be prevented from making an arrest if "Fisheries Officer" is narrowly construed. This is clearly an undesirable situation, especially since it is likely that the majority of turtle beach patrols will be made by Forestry personnel.

b) Since the hawksbill turtle is caught principally for export of its shell, and since this trade is now outlawed by the provisions of CTTES, it would be appropriate to offer this species complete protection in Trinidad in domestic legislation. Similarly, the leatherback is almost impossible to catch at sea, and in practice exploitation of this species takes the form of illegal killing of nesting females. Inclusion of this easily recognized species on the "totally protected" list would close an enforcement loophole. At present, individuals encountered with leatherback parts may safely be assumed to have derived them from a nesting female (with the rare exception of a specimen accidentally caught in a trawl or filette), but this could not easily be proven in a court of law, and poachers may be released if the species is not given complete protection.

The olive ridley is highly endangered in the Western Atlantic through unknown causes, but possibly through massive incidental catch in shrimp trawls throughout the region (Trinidad to Brazil). It also should receive complete legal protection in Trinidad and Tobago.

c) The Fisheries Regulations offer protection to "female turtles" unless they are outside the reef or more than 1,000 yards from shore where there is no reef. This regulation includes elements of unrealism in that even a scientist cannot externally distinguish the sex of a turtle until it nears maturity. Moreover, even a fisherman trying to follow the regulations may not be certain whether or not he is 1,000 yards from shore. Also, it is not known how many males are necessary to ensure normal reproduction, and since copulating males are quite easy to catch, this "open season" without quota on adult males could lead to trouble. In practice, turtles are likely to be caught wherever they are found except in the unusual situation of an enforcement agent being present.

It would be better to protect turtles of breeding size, and to allow a limited open season on green turtles of less than mature size. Turtles of sub-adult size are less susceptible to over-harvest since they do not present themselves as an easy target while copulating or nesting. The minimum breeding size of green turtles in the Atlantic is about 36 inches (91.5 cm) carapace length. Green turtles larger than this should receive protection.

Nevertheless, the restriction of where turtles can be caught should be retained despite its shortcomings, and the qualification of "males only" should be removed. Such a regulation may protect turtles very close to shore, as in north-eastern Trinidad near Toco, where immature greens and hawksbills often swim within a few yards of shore and can easily be approached.

Relatively few people make a significant part of their income from capture of turtles in Trinidad and Tobago. These individuals, in many cases, have been cooperative with IMA

and other surveyors and are concerned about the status of the resource. Individual fishermen should be carefully briefed on the purpose of the revised regulations, and it should be explained to them that it is still legal to catch green turtles under certain circumstances for domestic use, so it is not a case of nee regulations "banning everything."

INCIDENTAL CATCH

The problem of incidental capture of sea turtles is a critical one in several parts off the world, including Indonesia, the Atlantic waters of the United States, and Pacific waters of northern Mexico. It has not been quantified in the northern South America area, but unquestionably occurs. It is potentially serious in that such catches often involve the relatively slow-swimming olive ridley, *Lepidochelys olivacea*, which is endangered in the region. Of the olive ridleys tagged in Surinam by the Consultant in the 1960's and early 1970's, a fair proportion were caught incidentally in waters of Trinidad and western Venezuela by trawlers.

It is vital that the dimensions of this problem be quantified in Trinidad. It would be appropriate for the Institute of Marine Affairs to take the lead in this investigation, with backup and support from other agencies and personnel where appropriate. Such investigation will take the form of interviews with trawler captains to determine how many turtles, of what species they catch, and whether such turtles are generally alive or dead when caught. In either case, final disposition of the turtle (released or kept) should be ascertained. In this way, it should be possible to determine how many turtles of what species are caught annually and where the greatest concentrations of captures take place. Cooperative trawler captains could be asked to maintain a log of turtles caught for the next few months. In all interviews with trawler captains, the topic of the Turtle Excluder Device (TED) should be discussed, and their receptiveness to a program of voluntary TED usage in high-capture areas explored.

For the time being, it may not be necessary to proceed legislatively in the area of incidental catch; a voluntary compliance program employing the TED would certainly be better. However, ultimately it may be necessary to establish areas in which capture is so high that the TED should be made mandatory, at least at certain seasons.

SAND MINING

The Consultant only became aware of the problem of the mining of sands on Trinidad beaches in the last days of his stay on the island, and this precluded him from making an in-depth evaluation of the problem and possible solutions. However, a meeting was coordinated by Dr. Carol James, at which the Consultant was able to meet with various government representatives and discuss the sand mining question; the group actually had the opportunity of watching a leatherback turtle nesting on the beach in question (Matura). The Consultant was also able to see the sand mining areas, both while on foot and from the air. Some preliminary conclusions were reached, but in some cases they raise questions rather than present definitive answers. These are as follows:

i. Sand mining is unquestionably an environmentally undesirable activity at Matura, contributing to beach erosion, destabilization of shorelines, and loss of nesting habitat for marine turtles. The mined beach, Matura, is a narrow one, already undergoing erosion and with many areas where there is insufficient space left between the sea and the coconut palms for turtles to nest. Even now, leatherback nesting thus has to concentrate itself on those places where the beach is widest. Matura is also one of the most important leatherback nesting beaches in Trinidad. Consequently, earnest efforts should be made to seek alternatives to satisfy industrial needs from other sources. A systematic search should be initiated for sand that fulfils the requirement of both the oil industry and sewage filtration. If inland sources in Trinidad cannot be located, other sources should be sought. For example, in Guyana there

are substantial and easily accessible inland deposits of sand near Timehri Airport. Since the foreign exchange is such that Guyana owes Trinidad substantial revenues which are unlikely to be paid in the foreseeable future, it is possible that Guyanese sand could be obtained without charge in partial mitigation of these debts if it is determined to be physically suitable.

ii. Reports reached the Consultant that the sand mining company working at Matura had frequently ignored the guidelines and restrictions established under which the sand could be mined, in terms of season, location and absolute quantity. It is strongly recommended that a system be established whereby removal of sand can be monitor and contracts cancelled if the rules are not respected since beach of the terms of the mining permission constitutes theft of natural resources for private gain and should not be tolerated. While the precise nature of this monitoring should be worked out locally rather than by a Consultant with limited familiarity with the problem, a possible solution might be for a massive, locked gate to bar vehicular access to the beach until it was unlocked by the official responsible for monitoring sand removal.

iii. While a clear and total moratorium on beach mining has been advocated (e.g. by the Field Naturalists' Club) and is strongly recommended, until this is established it is necessary to take steps to ensure that turtle nests are not destroyed by the mining operation. Thus, unless mitigation procedures are adopted, mining should not take place at any time when eggs are incubating in the beach which would correspond to a period starting when the first turtles nest and ending about two months after nesting had finished. This would approximate to a six-month period starting in March though refinement of the dates according to the exact nesting schedule in a given year may be necessary.

A possible alternative would lie in the establishment of a 100% monitoring of nesting activity on the section of the beach from which sands were extracted. This should be financed by the sand mining company but undertaken by an individual primarily answerable to government. If each nest in the mined area were to be relocated to a site outside the limits of the mined area as it was laid, this might represent a satisfactory accommodation to the turtles' needs. It would have to be done by a responsible and careful individual who would spend each night on the beach during the nesting season. Leatherback eggs are more susceptible to mortality following relocation than are those of other species, so they would have to be moved immediately and carefully and the nests marked inconspicuously so that the hatching success could be monitored.

THE LEATHERBACK TURTLE, DERMOCHELYS CORIACEA

The leatherback is the most important marine turtle species in Trinidad in terms of numbers of individuals encountered nesting; it is probably also the dominant nesting species on Tobago. The best nesting grounds in the Antillean area are located on Trinidad, although greater numbers nest on mainland shores of Central America and the Guianas. Curiously, almost none nest in Venezuela.

The peculiar biology of this species is unique among reptiles. It is known to dive to depths of almost 1,500 feet, migrate distances of 3,000 miles to temperate or even near-polar latitudes within a few months of nesting in the tropics, and grow to 10,000 to 20,000 times its hatchling weight in only 2-3 years on an exclusive diet of jellyfish. Space does not allow further discussion of these topics here.

The leatherback is listed as endangered by the United States Fish and Wildlife Service, as an Appendix I (protected) species by the Convention on Trade in Endangered Species of Flora and Fauna, and endangered by the international Union for the Conservation of Nature. Whether these categories reflect biological reality has been the subject of some debate, since leatherbacks are now known not to be rare, and surveys conducted in recent decades have revealed major new

nesting grounds rather than documented declining populations. Nevertheless, in most areas where it nests the species is subject to stress either by poaching or egg collecting, or both, and while the "endangered" designation may be changed in the future, this should not be done yet.

In Trinidad and Tobago, the greatest value of the leatherback lies in its benefit as a scientific and educational resource. The value of the experience gained by both Trinidadians and by visitors when they have the opportunity of observing the nesting of a 1,000 pound turtle is greater than any value that could be derived from direct utilization of the animal or its eggs for human consumption. Moreover, these two uses are somewhat incompatible even if exploitation is maintained at a low level; the turtle is very difficult to capture at sea, and leatherback hunters are generally obliged to seek their prey during the vulnerable nesting phase. The turtles are so large that they have to be butchered where they are found, leaving a stinking carcass that destroys the pleasure of the beach experience for both turtle-watching groups at night and daytime visitors enjoying other aspects of the beach, such as swimming, windsurfing, or picnicking.

Management plans for the leatherback in Trinidad/Tobago should include the following:

i. A Tagging Program

It has been found to be most effective to tag leatherbacks on the hind flippers, or failing that towards the outer part of the fore flipper (where the flesh is tough and must be perforated with a chisel or knife before tagging). Monel metal tags are reasonably satisfactory, but plastic or titanium is better in that under certain circumstances monel tags can corrode badly in sea water.

Since tagging is a research rather than a management activity, the responsibility for this lies more with IMA of Field Naturalists rather than with Forestry. It is recommended that IMA and Field Naturalists confer and establish a "lead agency" responsible for turtle tagging, and that an individual be designated who will be in charge of keeping the records of all turtles tagged and of tagged turtles subsequently re-encountered either on the beach or by capture at sea. This record should be freely available to all interested parties. If they are willing to accept the responsibility, Forestry employees on turtle patrol should carry tags and tag turtles opportunistically, using overall techniques as described in the "Manual of Sea Turtle and Conservation Techniques" distributed by the West Atlantic Turtle Symposium (WATS).

Tagging, if conducted seriously and systematically, can yield valuable data on migrations, exchange between nesting grounds (e.g. between Trinidad and Tobago, or between Trinidad and mainland beaches), and on population monitoring.

ii. Anti-poaching Patrols

Leatherbacks are slaughtered while they nest on many Trinidad and Tobago beaches, although beach patrols have slowed this somewhat in recent years. Such patrols should continue and be augmented, and should extend to further beaches as resources allow. The major nesting beaches should be patrolled on a random and unpredictable basis, and personnel should operate with stealth and with minimal use of flashlights in order to maximize the chances of catching poachers red-handed. The Fishing Pond Beach is particularly visited by poachers and large numbers of carcasses were seen there by the Consultant. It is urgent that a high enforcement presence be maintained on this beach.

iii. Ferral Dogs

In some areas, feral dogs (or poorly disciplined and hungry pet dogs) are a major problem. At Grande Riviere, for example, numerous leatherback nests on this important beach had been destroyed by dogs just before our visit in 1984. These dogs need to be eliminated; they probably do a great deal of damage to other wildlife as well as to turtles. This will need to be done discretely to prevent a reaction from the local people, but it is important. Probably few nests in north-eastern Trinidad survive predation by these dogs if what we saw at Grande Riviere in 1984 was typical.

iv. Monitoring

IMA should continue to constitute a focus for information derived from tagging efforts, aerial surveys, and law enforcement patrols regarding the numbers of leatherbacks nesting in Trinidad and Tobago each year.

v. Other Studies

Many scientists around the world are interested in various aspects of leatherback nesting biology, and Trinidad provides an excellent site for such studies, with reasonably accessible nesting beaches, adequate numbers of nesting turtles, and a cooperative and English-speaking people and government agencies. Studies by foreign scientists should be welcomed, and Trinidadian personnel allocated to assist such scientists in the field so that they can learn from them. This would parallel the philosophy of the Charles Darwin Research Station in the Galapagos Islands, where foreign scientists are assigned Ecuadorian assistants for field work.

THE HAWKSBILL TURTLE, ERETMOCHELYS IMBRICATA

The hawksbill is a highly tropical, typically island-nesting turtle most usually found around coral reefs where it feeds upon sponges and other invertebrates. It is probably less migratory than other sea turtle species, and nesting grounds are often very close to favourite feeding areas.

However, a few cases are on record of long-distance migrations by post-nesting hawksbills. The specimen is the most frequently seen sea turtle around many of the Antilles but never forms large nesting colonies; typically, nests are made singly, and unpredictably often on very small cove beaches. This species locomotes on land or over obstacles more easily than other sea turtles, and it is known to crawl over exposed reefs and ascend rocky or pebble beaches, often nesting under trees or bushes. Thus, its nests may be missed by aerial surveys and even fresh nests may be hard to detect even with ground surveys.

The hawksbill is listed as endangered by the United States Department of the Interior and the International Union for the Conservation of Nature, and as an Appendix I species (banned from international commerce between signatory countries) by the Convention on Trade in Endangered Species of Flora and Fauna, (CITES). World populations have been significantly depleted by the demand for the shell of the hawksbill which provides true "tortoiseshell."

Geologically and biologically, Trinidad is more similar to part of the South American mainland than to a typical Caribbean island, and this nay account for the presence of far more nesting leatherbacks than hawksbills on Trinidad beaches. Actual records of nesting hawksbills in Trinidad are rather few and appear to be concentrated on the associated islands rather than on Trinidad itself. Bacon (1981) reported hawksbill nesting on the east coast beaches of Matura and Manzanilla as well as the north coast beaches of Maracas and Las Cuevas (originally reported by Bacon and Maliphant as *Caretta* (1971), and on the islands of Huevos and Chacachacare, but recorded no nesting on Tobago. However, Carr et al. (1982) reported hawksbill nesting on Tobago, and also reported an individual nesting at Brigand Hill, on the east coast of Trinidad.

H. Boos (*pers. comm.*) reported two instances of hawksbill nesting on Chacachacare Island; in one case, J. Boos had interceded to prevent the killing of a nesting hawksbill at Salt Pond Beach on Chacachacare. H. Boos also reported a hawksbill nest that had been excavated by dogs at Torture Bay, Huevos Island, and another individual was photographed on its second attempt to nest at La Tinta Beach, West Bay, Chacachacare.

Chu Cheong (1984) head-started hawksbill hatchlings from a nest from Chacachacare Island, and we saw two fairly fresh nesting tracks on this island in the course of a helicopter survey, both on La Tinta Beach.

We also found some evidence of nesting hawksbills on beaches on the north coast of Trinidad. An informant at Paria Beach reported that hawksbills nested there in small numbers from March to October, and we found a single supracaudal scute of an adult hawksbill on this beach, possibly derived from an individual slaughtered while nesting. We also found three pleural bones of an adult hawksbill on an extremely small, unnamed beach a short distance east of Blanchisseuse.

In conclusion, it appears probable that hawksbills nest rarely on beaches of eastern Trinidad, somewhat more frequently on the north coast beaches, and regularly, though not in colonial fashion, on the islands of the Boca del Dragon, especially on Chacachacare Island.

Because of the sporadic and unpredictable nature of its nesting, it is probable that most Trinidad hawksbills nest unmolested by man. However, there is a considerable capture of the species in Trinidad waters. Generally they are caught in nets and most commonly off the northern coast. One fisherman claimed to recognize two forms of hawksbills; the smaller one weighing, 50 pounds or less, he called "seh-seh."

Chu Cheong (1984) presented statistics on the capture of turtles in Trinidad. She found that fishermen at six of the fifteen depots investigated caught sea turtles; these included Matelot, Toco, Grande Riviere, Mayaro, La Dune and Carenage. Both hawksbills and greens were caught; nets used were generally of 30 crn mesh and extended vertically 210-240 cm in the water column. Individual nets were about 30 m in length, but longer spans could be made with several units. The nets were set in known feeding areas and checked every morning and evening. Reported weekly catches ranged from 4-10 turtles, but on one occasion fifty turtles had been caught in one day in 1980 at Mayaro.

Statistics gathered by a cooperating fisherman at the Toco Depot gave the average weight of 36 hawksbills as 91.4 kg (201 lb). However, this figure is greatly in excess of the usual size of mature hawksbills, and it is likely that the weights given were exaggerated. Pritchard (1969) gives dimensions and weights of a series of adult hawksbills from Guyana, and according to the ratios suggested by these data, animals around 66 cm in length should weigh 25-30 kg, not 80-100 kg. The figures also suggested that adult males made up the vast majority of the catch. This could have been the result of the usual method of capture (harpooning); copulating males being especially easy to harpoon. On the other hand, it is conceivable that the data were presented in such a way as to exclude illegal animals (i.e. undersized individuals, or females during the closed season). Fishermen interviewed by Chu Cheong were generally aware of laws protecting turtles, but they had varying and often inaccurate understandings of the details of these laws.

While we were not able to unravel all details of the commercial handling of turtle shell in Trinidad, it appears that a considerable proportion of the shell of the hawksbills caught in Trinidad waters is purchased, currently for \$15 TT per pound, by Hashim Mohamed of Toco, who then sells it to Mr. Charles Fritz of St. Lucia who visits Trinidad (and other islands as far away as the Bahamas) approximately every three months, purchasing shells for export to Japan.

While the hawksbill is listed as endangered or as Appendix I by international agencies, there is some controversy as to the real biological status of the species. Some authorities (e.g., Carr and Meylan, 1980) regard it as on the brink of extinction worldwide; others (e.g., A. Dammann, *pers. comm*) feel that Caribbean populations are not significantly depleted and that protection of nesting females will be adequate to maintain populations. Some interpret the huge volumes of tortoiseshells in international trade as evidence that the species could not be all that rare; others see these same volumes as evidence that the species is being harvested at an unacceptably high rate that cannot be sustained much longer. There may be some truths to both assertions; hawksbills are not about to become extinct, and despite the difficulty of locating any beach on which more than a few hawksbills nest, the world population must be at lest in the hundreds of thousands, of mostly immature specimens. But on the other hand, documented decline has occurred in many areas, especially in the western Caribbean (both mainland shores and the

Colombian islands and banks), and world demand for the shell is almost surely incompatible with sustainable yield. The species thus may only be saved by strong legal protection and curtailment of markets.

Currently, Trinidad law, promulgated via the Fisheries Act of 1916 (last revision, 1980) does not differentiate between the different species of sea turtles. It offers seasonal protection to all turtles, and protection of turtle eggs and female turtles in or close to shore at all times. There is thus legal catch of hawksbills under some circumstances. On the other hand, the principal product of the hawksbill turtle is the shell, for which the markets lie in other countries (ultimately largely Japan), but export of tortoiseshell from Trinidad is illegal under the provisions of CITES. Turtles may still be caught for their meat for local use, but the product of greatest cash value is essentially unsaleable without breaking the law (though there may be miniscule local markets). This presents an untenable situation since it is unrealistic to expect fishermen to discard the most valuable part of their catch.

Because the hawksbill is officially listed as endangered and is widely over-harvested and listed by CITES in Appendix I, it is recommended that this species receive as much protection as is politically feasible in Trinidad and Tobago.

The species should receive complete protection for the time being. Also, it is recommended that a small-scale head-starting project be initiated. This should be conducted by the Institute of Marine Affairs, which already has the capability for such programs. If, say, two nests averaging 170 eggs each could be collected annually and the young artificially hatched and released after growing for the first year in captivity, an annual increment of 200-300 Juveniles could be added to the population resident in Trinidad waters.

If the recommendation of head-starting is accepted, the most feasible source of eggs may be Chacachacare Island. Nesting appears to be more frequent there than elsewhere in Trinidad and Tobago, and if a biologist were stationed on the island for a few days in mid-season (say May or June), he could expect to find the required nests. Before head-starting is undertaken, IMA should send a biologist to Venezuela to visit the head-starting facility at Archipielago los Roques. This effort, under the direction of FUDENA and the Instituto Los Roques, has had conspicuous success in rearing hawksbills from local nests to an age of 9-12 months.

Hawksbills head-started in Trinidad should be released in local waters. Unnatural concentration of released animals should be avoided, and areas of coral reef, that not only constitute the appropriate habitat but also are unsuitable for trawling, should be selected to receive the young turtles. Released turtles should be tagged, preferably with small titanium tags with the IMA return address.

Complete legal protection of the hawksbill may be difficult for the fishing community to accept, and means would have to be taken to make the ban as palatable to them as possible. The number of people involved in turtle fishing in Trinidad is small, and the ban should be explained to them on an individual basis. It could be stressed that the green turtle is still legal to catch, and that it is adherence to an international convention rather than an arbitrary local decree that protects the hawksbill. It could also be pointed out that, with an active head-starting program and protection of the wild stocks, the species could return to a level of abundance that could justify applications to CITES for a shift for the Trinidad population to Appendix II, which would mean that Trinidad and Tobago could issue discretionary export permits. However, the latter should not be over-emphasized since depleted sea turtle populations tend to recover slowly and erratically, at best, and if a certain level of poaching continues recovery may not take place at all.

THE GREEN TURTLE, CHELONIA MYDAS

The green turtle is moderately common in waters of Trinidad and Tobago, and it occasionally nests on Trinidad and Tobago shores, though much less commonly than the leatherback and

probably less commonly than even the hawksbill. This is a species of great world-wide economic importance, almost entirely because of the edibility of the flesh and eggs. The shell and leather of wild green turtles is of little commercial value or importance (though these products from farm-reared turtles have been sold as substitutes for hawksbill shell and ridley leather, respectively).

The green turtle is a highly migratory species. Specimens in the Caribbean area almost all derive from one of four nesting grounds; major ones in Costa Rica and the Guianas, especially Surinam, and minor ones in Quintana Roo (Mexico) and Isla Aves (Venezuela). However, very small numbers nest on many islands and mainland shores of the Caribbean; it is not known whether these represent small, isolated nesting colonies, or simply stray individuals from a major nesting colony.

The green turtle, although still existing in large numbers in certain parts of the world, is listed by CITES as an Appendix I species. Consequently, Trinidad may not be party to international trade in this species or its products. However, if Trinidad can effectively protect the breeding animals by maintaining a ban on collection of eggs or capture of breeding-size animals of either sex (see Legislation and Enforcement), it should be permissible to allow limited scale capture of immature animals to continue.

Moves are afoot in CITES to downlist certain localized populations of the green turtle in order to allow production from the Grand Cayman turtle farm and the turtle ranching facilities in Surinam and Reunion to export their product. However, this change, even if consummated (at present it I s only proposed) would not affect the ban on export of green turtle products from Trinidad. It might permit import of products under certain circumstances, but economic factors (high prices and loss of foreign exchange) should minimize Trinidad's role in any such commerce.

THE OLIVE RIDLEY TURTLE, LEPIDOCHELYS OLIVACEA

The olive ridley turtle has been known as a member of the fauna of Trinidad since Carr (1956) received fishermen's reports of a local, relatively rare, non-nesting species known as "batali"; subsequently Carr received the head of a "batali", confirming its identification as *Lepidochelys olivacea*.

Tagging studies by Pritchard (1973, 1976) subsequently revealed that *L. olivacea* is regularly caught in Trinidad water, although these specimens were derived from distant nesting grounds in eastern Surinam. But until very recently, the only nesting records were those of rare individuals identified by Bacon (1981) at the beaches of Matura, Manzanilla, and Cedros, and another found by Chu Cheong (1984), who was able to raise some of the hatchlings in captivity. Indeed, Carr et al. (1982) stated rather categorically that "no olive ridley has been recorded nesting in Trinidad."

A report by Gaskin at the 1984 meeting of the Wider Caribbean Sea Turtle Recovery Team (WIDECAST), to the effect that olive ridleys nested in western Trinidad in 1984, is, therefore, surprising and noteworthy. Gaskin reported a single nest near Orange Valley, and twenty or more at Otaheite, both localities being in the Gulf of Paria. Further investigations of these reports in a high priority. The olive ridley in the western Atlantic appears to be heavily depleted and has undergone massive reduction in the population of nesting individuals at the principal breeding ground in the region, namely Eilanti Beach in eastern Surinam. Whether this population has undergone an overall collapse or has merely dispersed required investigation. Some of the reduction in nesting females at Eilanti has been balanced by an increase on other Surinam nesting grounds, but even so the annual nest count for Surinam as a whole, about 3,000 in 1967-68, has not been higher than 1,120 since 1972. It could be that some of these turtles, displaced from Surinam possibly by erosion of beaches or by burgeoning populations of *Dermochelys* (which by nesting very deeply are liable to destroy ridley nests), have started to nest in Trinidad. If this is the case, Trinidad will hold a major responsibility for the survival of the species in the western Atlantic, and should take appropriate steps.

These steps should include the allocation of personnel to undertake patrols and interviews with local residents in the overall San Fernando area in 1985 and in subsequent years. The nesting season for *Lepidochelys* in Surinam is primarily May and June, so patrols should be concentrated in these months. Which department or organization should conduct these patrols will depend upon availability of personnel. At the pre-season planning meeting, volunteers should be sought from the governmental and non-governmental sectors and coordinated patrols conducted. Important questions to answer are:

- i. Exactly where are the ridleys nesting and in what numbers?
- ii. Do local people claim that they have always nested locally or is this a new phenomenon?
- iii. Are the turtles subject to poaching on the nesting beaches, or accidentally by trawler activity offshore?
- iv. What is the fate of nests; are they destroyed by human or natural predation or erosion, or do they usually hatch successfully?

Any aerial surveys during 1985 should attempt to include these areas, but it should be noted that ridley tracks and nests are lightly-cut and ephemeral, and only very fresh tracks are likely to be detectable from an aircraft.

Since the olive ridley is endangered with extinction in the western Atlantic and is a species of negligible commercial importance in the region, there should be no legal take of the species or sale of its products in Trinidad and Tobago.

It is recommended that captains of Trinidad-based trawlers be interviewed to determine whether or not significant numbers of olive ridleys are being caught accidentally. If regular capture is taking place, usage of the Turtle Excluder Device or Trawling Efficiency Device (TED) should be instituted. A request could be made to the US National Marine Fisheries Service for a demonstration of this device or for help in getting it introduced in Trinidad.

THE LOGGERHEAD TURTLE, CARETTA CARETTA

The loggerhead appears to be rare in Trinidad waters, and confirmed nesting records are few to non-existent. It would be desirable to gather whatever data can be obtained on the occurrence of this species in Trinidad and Tobago, but the species cannot be considered an important component of the local turtle fauna. Moreover, the species occurs in large numbers in the United States (nesting especially in Florida, but also in Georgia and the Carolinas) where it receives considerable management attention. It is thus relatively safe in the western Atlantic, and Trinidad does not need to play any major role in the conservation of this species. Thus, no specific management recommendations are made for the loggerhead in Trinidad and Tobago.

LITERATURE CITED

With the exception of the items listed below, full references with summary of contents to all textual citations will be found in the <u>Background</u> section (pages 3-7).

Carr, A. F. and A. Meylan. 1980. Extinction or rescue for the hawksbill? Oryx 15: 449-1150.

Pritchard, P.C.H. 1969. Sea turtles of the Guianas. Bull. Florida State Mus., Biol. Sci. 13: 85-140.

APPENDIX III

Wildlife Section, Forestry Division (1987). Protection of Leatherback and Other Marine Turtles by the Forestry Division



No. FW:4/9/3

In replying, the above number and date of this Memo should be quoted.

From Head, Wildlife Section To Ag., Conservator of Forests. Dated 1987 May 15

Protection of Leatherback Turtle.

I refer to our discussion on the subject matter. Please find attached my report on turtle conservation efforts of the Wildlife Section with recommendations for assistance.

Dr. C. James

Head, Wildlife Section

CJ:im

PROTECTION OF LEATHERBACK AND OTHER MARINE TURTLES BY THE FORESTRY DIVISION

1.0 BACKGROUND

1.1 The Wildlife Section has been involved with the protection of leatherback turtles and turtle-nesting habitat since 1982.

1.2 The Section initiated action (lectures, field trips) through which the Quarries Advisory Committee banned sand mining at Matura Beach. This action encouraged increased nesting and reduced damage to eggs because of stabilized beach conditions (there were massive changes in beach contour due to tidal action In quarried areas leaving no suitable nesting surfaces).

1.3 Also, the parallel action of refusing permission for construction of an access road to the beach for sand mining bore fruit, since it limited vehicle access and thus, indirectly reduced leatherback turtle slaughter (transporting heavy bags of meat by hand to vehicles parked long distances from the site of slaughter is undertaken only by the most determined gangs of poachers who each share the burden of transport).

1.4 Establishment in 1983 of regular dusk-to-dawn patrols by Forestry Staff, and the strategy of encouraging visitors and volunteer helpers on the beach (through educational trips organised by the Wildlife Section and by Molly Gaskin of the Field Naturalists Club), saw a dramatic reduction in turtle slaughters at Matura from that year onwards. However, determined poachers still chose their times very carefully by camping round-the-clock to observe for any breaks in human activity on nesting beaches and continued sporadic slaughtering at Matura (it takes only a few seconds to kill the very vulnerable female leatherback while on the beach, thus a 10 - 12 hour patrol can be rendered useless if campers are allowed on nesting beaches).

1.5 Protection at Fishing Pond proved to be more difficult since volunteer assistance was not as available as at Matura. Very few citizen groups were interested in visiting this isolated, difficult to access "dangerous" area. Forest officers from North and South Game Warden Patrols and from Wildlife Research mounted a determined effort to reduce the high slaughterrate at Fishing Pond Beach. 1985 proved to be reasonably successful as potential poachers who were on the beach to "fish" and whose only "fishing gear" were cutlasses, sharp knives, plastic bags (for meat) and buckets (for eggs), tools of trade of a turtle poacher, were harassed by Game Wardens to leave the beach.

1.6 This exercise was somewhat dangerous since:

- i. Game Wardens had no legal authority to ask any person to leave the area (they were not and are still not precepted), neither is the area out of bounds for citizens.
- ii. Threats against their lives were stepped up by determined poachers driven by the high profit motive (leatherback turtle meat is sold as beef roti; it is cooked with beef fat to disguise the taste and smell). Tyres on patrol jeeps have been slashed and cutlass threats have been made to unarmed wildlife research staff. An OAS Parks consultant and staff of the Ministry's audio-visual unit suffered at the hands of angry poachers by also having all tyres on their vehicles slashed during one of these trips accompanying Wildlife Section Staff.

1.7 Despite the danger, patrols were kept up at Fishing Pond. Less frequent patrols were also made at Grand Riviere, Toco and Manzanilla where slaughters and egg poaching also took place, and at Matura. One major research/protection expedition was mounted from Blanchisseuse to Matelot during 1984 to survey north coast beaches.

1.8 A recommendation made in May 1985 to have both Matura and Fishing Pond beaches declared as Prohibited Areas during the turtle nesting season has not materialized. It was hoped that this action would assist Game Wardens in protecting nesting habitat and turtles through limiting entry into the area to permit-holders (i.e. bona-fide fishermen, etc.) and thus prevent potential poachers from camping on these beaches (sometimes for 2 or 3 days under the pretext of fishing). Reference is made to the "Background Report on Outstanding Problems in Wildlife Conservation with Recommendations" prepared on behalf of the Wildlife Conservation Committee by the Wildlife Section, 1987 January 30, pages 30 and 177 to 181.

1.9 Detection and apprehension of offenders is extremely difficult without adequate staff to be deployed round-the-clock on beaches, camping for several days to stakeout determined poachers. The only arrests made were of five poachers apprehended on the one road out of Uega de Oropouche in 1985 after a two-day stakeout by Game Wardens and a police officer. This resulted in at least six (6) court appearances spread over ten (10) months, legal bungling by defence attorneys, and eventually the case was dismissed with strong warnings to the defendants by the very concerned magistrate. One other case, not involving any arrests, was bungled by police officers (see pages 247-249 of Background Report, op cit. in 1:8 above).

2.0 PRESENT STATUS

- 2.1 Patrols
 - 2.1.5 There was an alarming increase in physical threats made to Wildlife Officers at Fishing Pond over the last few weeks. This culminated in a very ugly incident on April 28, 1987 when 7-8 drunk, potential poachers, armed with sharp cutlasses surrounded the wildlife vehicle, became very abusive and threatened to "kill ah Game Warden" (Appendix 2). Fortunately, also present on this patrol of unarmed Forest Officers, was a Regiment Sergeant armed with a self-loading rifle. When his presence in the darkness of the patrol vehicle was observed by one of the men, a signal was sent to his colleagues to retreat and they did so amidst threats of a later ambush on the only road out.
 - 2.1.6 A recommendation for Coast Guard or Regiment assistance was made following this terrible incident (Appendix 2).
 - 2.1.7 The recurring story of limited wildlife protection staff is relevant (18 for the entire country). These officers, in addition to undertaking turtle protection, are under extra pressure at this time to deter poaching of game animals that are vulnerable to poachers due to the stress of limited food and water imposed by this very severe dry season. Even with the assistance of Wildlife Research staff (9) during the turtle-nesting season, protection is inadequate.
- 2.2 Public education
 - 2.2.1 <u>Field Trips</u>: Scores of citizens have already been taken, during the 1987 season, by Wildlife Section staff on patrols to view nesting turtles. The Wildlife Section uses these opportunities to educate the public directly about the plight of leatherback turtles and the need for protection. Among those taken so far were school children, UWI and ECIAF students, staff members from IMA and CADP, members of the Scientific Association of Trinidad and Tobago, one journalist and ordinary citizens.

Since 1983, hundreds of nationals (and foreigners) have been sensitised directly on the beach by the Wildlife Section about turtle conservation, and this has borne fruit at Matura where volunteers go on their own, after initiation by the Forestry Division, to assist in protection. Fishing Pond has not attracted a similar cadre of volunteers.

2.2.2 <u>Media Exposure</u>: Cartoons with effective messages have been hand delivered to the Department of Information since April 14, 1987 (Appendix 3) requesting media exposure but to date none has been published. A recent call to the relevant press officer indicated that it was not hitherto considered important but he would do whatever he can now to help.

During April, arrangements were made through the Public Relations Officer for this Ministry, at the Department of Information, for an appearance on T.T.T. to high-light wildlife issues. May 15, 1987 had been scheduled for discussion on wildlife conservation in general, and on specific issues such as turtle protection and the effect of fires on wildlife.

3.0 DISCUSSION

3.1 The limited, but very dedicated staff of the Wildlife Section is unable to effectively protect nesting turtles without:

- a. Declaration of Matura and Fishing Pond Beaches as Prohibited Areas during the Turtle nesting season
- b. Assistance from the Coast Guard, Regiment and Police Service
- c. Precepts, arms and communication equipment for Wildlife Officers.

3.2 The downturn in the economy has seen an unprecedented attack upon all of the natural resources of the country and illegal, but lucrative ways of making money will increase. Turtle poaching for meat and eggs is a potentially lucrative "business".

3.3 The Fisheries Act, Ch. 67:51 allows for harvest of turtles at sea during an open season October-March annually. Females are more likely to be captured since they are more vulnerable to capture during the open season while on their way to shore to lay eggs (males remain out at sea). Besides, fishermen are unable to sex turtles at sea before capture.

3.4 Media exposure is required. During 1983/85 when an Express journalist, who was also a concerned conservationist, supported the Forestry Division's efforts by publishing articles and cartoons, public interest was heightened. Concerned citizens responded by making reports to the Division on poaching activities and on offending turtle meat vendors. Since the departure from Trinidad of this journalist, efforts for publicity through the then Ministry of Information were unsuccessful.

3.5 A Public Education/Public Relations Unit dealing with Environmental Education is required in-house within the Ministry of Food Production, Marine Exploitation, Forestry and the Environment to develop educational/public awareness programmes to deal with these and other important conservation/environmental issues.

4.0 RECOMMENDATIONS

4.1 The Regiment should be approached to assist the Wildlife Section in protecting the leatherback turtle.

4.2 Early establishment of the National Environmental Office of the Ministry to undertake, as one of its primary functions, a massive public education drive on environmental issues (Ref: "Guidelines for Environmental Administration" 1987, April 24).

4.3 Declaration of Turtle Nesting Beaches at Fishing Pond and Matura as Prohibited Areas for the 1988 Turtle Nesting season. (Ref: "Background Report", op. cit. 1:8 above).

4.4 Amendment of the Fisheries Act (Ch. 67:51) to remove harvesting of marine turtles.

4.5 Attendance by Graduate Trainee N. Gyan at an International Turtle Conservation Workshop in Puerto Rico October 1987 (Appendix 4).

APPENDIX I

Other

 Name:
 Wildlife Section Forestry Division

 Location:
 Fishing Pond Beach (Day time Evaluation / Patrols)

 Date:
 March to May 1987

 Weather:
 --

 Time & Date
 No.Turtles Seen

 Dobserved
 No.Turtles Seen

 Laid
 Did Carca

	Laid	Did Not Lav	Carca- sses			Area (Clear, littered, wide)	No. of People	Activity	
10/03/87		,	1	 	Approx. 1 week old	,			Carcasses
			1	 	Decomposing/old				often hidden in
07/04/87			2	 	Carapace/plastron near river mouth				vegetation, washed out by
16/04/87			1	 	Fresh (few hr. old)				tide, or buried by
			1	 	Approx. 1 week old				poachers
			1	 	Fresh (few hr. old)				
					Meat destroyed by Wildlife Section				• Poachers could not remove
			1	 	Approx. 1 week old				meat due to
28/04/87			1	 	Approx. 2-3 days old				arrival of Patrol on 16 th April.
30/04/87			2	 	Approx. 2 days old				1987
02/05/87			2	 	Approx. 1-2 days old				Carcasses
02/05/87			3	 	Approx. 1-2 days				spray painted red
to					old				to avoid
04/05/87									recounting
Total			16						

Forests 33

APPENDIX II



In replying, the above number and date of this Memo should be quoted

From David Boodoo, Forest Manager I To Dr. Carol James: Head, Wildlife Section, UFS Graduate Trainee Dated May 04, 1987

Incident at Fishing Pond.

On Tuesday, 28th April, 1987 at around 9:30 pm while preparing to leave our vehicle PAG 8547 prom its parking point in the Windbelt Reserve to proceed to do a Turtle Patrol, a yellow Mitsubishi Pickup, registration No. TAD 2586 pulled along our jeep and parked. There were seven men. Having recognised us to be Forest Officers, there was an air of silence. Forester I, Farrier flashed his light in the tray of the vehicle, before he could of said anything, the eldest of the man started to curse him in the worst obscene manner, and threatened his life. At this point our silence was broken, and I asked the threat-maker the reasons for his behaviour. I, too, was cursed and threatened. While I spoke to him the other men armed themselves with cutlasses and began an outburst of threats towards all of us, they also mentioned of being badly treated by Game Wardens in the past while making a cook at the river mouth on the said beach. While all this commotion was going on, the officers maintained their silence. Just then, one of the men from the Pickup walked around our jeep where he came upon Sergeant Rose from the army who was standing quietly in a hiding position with his automatic five shooter in his hand. Having seen this, he walked guickly back to his friends and said something secretly to them which prompted them to board the pickup and left. While leaving, they said its one way in and one way out and they would be waiting for us.

The impression we got of those men is nothing else but to slaughter turtles. On the vehicle were one small fish net and seven cutlasses.

The situation at Fishing Pond is worsening. If Sergeant Rose was not around, the situation may have gotten out of hand and the officers lives would of been in danger. Given this incident, I note with great regret the inability of those in authority to understand the case made out in the past for wildlife officers to be properly armed, especially on such exercises.

Finally, I wish to recommend that future patrols especially at Fishing Pond be strengthened with at least two officers with guns and handcuffs.

Officers on patrol were Forester I Farrier, A.A.I. Wiltshire, Sergeant Rose and Ramdeen, Checker.

Submitted:

David Boodoo

Ag. Cons. Of Forests,

This is an example of one of the more serious incidents at Fishing Pond beach this year. Slaughtering of turtles has increased in the area despite our efforts to protect nesting leatherbacks. Threats have been made at Fishing Pond by poachers this year that they "must kill at least one Game Warden because they harassing me too much." This area is lonely, isolated and as the poacher said there is only one road in and out. Wildlife Officers are like sitting ducks in this area. I appeal to you to use your office to (i) have the area declared as a Prohibited Area during the nesting season as was requested since 1985 and (ii) seek the assistance of the Coast Guard or [--?--] for protecting leatherback turtles. Reports from officers on the above patrol indicated that the situation was exceedingly tense and if Sgt. Rose was not present with his service revolver the situation could have got completely out of hand.

Carol James 87/05//08

From: Forester I, J. Tarner

To: Head of Wildlife Section, Dr. Carol James, UFS Graduate Training

Date: 87/05/08

Subject: Report on cutlass threat to officers at Fishing Pond on turtle research trip

On Tuesday, 25th April, 1987 a party consisting of Brian Wiltshire (A.A.I.), Sergeant E. Rose (T.T.R.), David Boodoo (F.R.I.), Ramdeen (Checker), S. Nedd (MVO) and J. Farrier (For I) undertook a trip to Fishing Pond Beach to collect basic data from any turtles which may have come up to lay.

On reaching the bridge to the rice paddies we observed a vehicle approaching the bridge on its way out. The driver was instructed to stop short of the bridge so that we may stop and check the vehicle. This we did, properly identifying ourselves and our purpose there. Immediately the three occupants of the pickup started using obscene language towards us and saying that "this is not a caldavan". After about two minutes they drove off after we had shone our lights in the tray and cabin (which were devoid of turtle or turtle parts). We next decided to check at Mr. A. Laban's (a known offender) house to see if any vehicles were there (none were observed) which would indicate the possibility of poachers on the beach. Afterwards we ventured to the entrance on the beach.

On reaching the parking area we noticed another pickup parked in the area. The officers then readied themselves, but before we could leave the jeep a vehicle's lights were seen approaching. We switched off all our lights and awaited their arrival. On reaching the jeep the driver of the vehicle drover alongside the jeep and tried to run me over. Only with a quick jump aside was I able to get away without being struck. At this point I still thought little of the incident. We again identified ourselves to the several; (7-8) occupants of the vehicle (TAD 2586 yellow Mitsubishi pickup). At this point Ramdieu was somewhat already along the trail. Everyone else was on the right side of the vehicle and I was on the left. Having identified ourselves the counterparts of the vehicle started saying that their rum had finished and that they should leave to get some more. Some of them started taking out cutlasses and checking a cast net which lay in the tray of their van. At this point I walked around the back of the van to the other side to stand next to B. Wiltshire. I did so with my cutlass in case and my torch off. Suddenly on reaching Wiltshire's side one of the group started cursing me and accusing me of watching in his tray. He then started threatening to chop me and started to shine his torch in my eyes. Being blinded by his light I immediately switched on my torch and shone it back into his eyes. The man started to incite the others to chop me and opened the left door of the vehicle and pulled out a cutlass. I immediately pulled my cutlass in anticipation of an attack. The man continued cursing and threatening whist one of the group tried to make peace by saying that the man cursing was under the influence of alcohol. This abuse continued for some time before one of the men went to the back of our jeep to ask Sergeant Rose for a light for his cigarette. On seeing Rose with his gun pointed at the others he went back to the van and told the others what he seen. All the while the abuse, threats and names of members of the North Patrol were being called (Whittier and "Guy" Ramsewak) in connection with some overturning of the men's food on some previous occasion.

Realizing that one of our party had a gun they started to leave but not before the man was threatening to chop me came directly up to me ordering me to move as he was "coming through". I stood my ground, ready to counter any blow which may be forthcoming, but the man after cursing and threatening, turned and went into the van. They then drove away cursing and threatening that we would not be able to leave Fishing Pond that night. Submitted by

J Tarner

Endorsed by Brian Wiltshire " " D. Boodoo, F.R.I. " " G. Ramdeen, Checker

DCF, This report is similar to that of F.R.I. Boodoo on the threats to Protection Officers. May we discuss. 87/05/12

Trinidad and Tobago National Report to WATS II (1987)

APPENDIX III

FW/4/3/1U

The Press Officer Department of Information St. Clair

Attn: Mr. Cuthbert Alexander

Dear Sir,

Enclosed are some cartoons on the Leatherback Turtle, *Dermochelys coriacea* for publication in the printed media. They been prepared by the Forestry Division's artist, Mr. Garry DeFreitas to highlight the plight of this species which is endangered worldwide. Please note that these are the originals and it will be appreciated if they call be returned after use.

The Leatherback is a migratory species of marine turtle which nests on the North Coast and North East Coast beaches of Trinidad and some beaches in Tobago during the months of March to September. Despite Its protected status in Trinidad and Tobago, people continue to slaughter this turtle as well as poach the eggs that are laid. The latter is very serious since this action destroys the potential for population increase.

Already for this nesting season (1987), carcasses have been observed at Fishing Pond, Matura and Grande Riviere Beaches in addition to poaching of the eggs that were laid.

The Wildlife Section feels that by undertaking a media blitz starting with simple and effective messages as contained in the enclosed cartoons, Trinidadians and Tobagonians will become sensitised to the need for protecting this important wildlife resource. Follow-up in terms of articles, both popular and scientific is also planned.

Thanking you for your kind consideration.

Yours sincerely

Nadra Nathai-Gyan /f/ Dr. Carol James Head, Wildlife Section.

c.c. Garry DeFreitas, Artist.

NNG:jcc.



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APPENDIX IV

Marine Turtle Management in Trinidad and Tobago with Specific Reference to the Leatherback Turtle *Dermochelys coriacea*

by

Nadra Nathai-Gyan Graduate Trainee Wildlife Section.

Forestry Division, Ministry of Agriculture, Lands and Food Production.

September 1984

ACKNOWLEDGMENTS

My grateful thanks are extended to Dr. Carol James, Head, Wildlife Section for the time spent in reviewing this report. Her excellent comments have been of tremendous help, and they are incorporated in this production.

Thanks are also extended to Forester I.R. Singh and Forest Ranger II L. Lendore who worked closely along with me on this project; to Ag. Game Warden II U. Whittier and Game Warden I G. Thompson for supplying information on the 1983 and 1984 nesting season; and to the other Patrol Officers who, in their own special way have contributed to this project.

The kind assistance of the Drawing Office, Forestry Division in supplying Figures 1 and 2 is gratefully acknowledged.

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- 1. Introduction
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 - 2.2 Tobago
 - 2.3 Trade in shells
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- 4. Discussion
- 5. Recommendations
- 6. Conclusion
- 7. References

1. INTRODUCTION

Taxonomy of the leatherback turtle:

- Phylum: Chordata
 - Class: Reptilla
- Order: Testudinata
- Family: Dermochelyidae
- Genus: Dermochelys
- Species: coriacea
- Common name: Leatherback turtle
- Local name: Caldon

Marine turtles, especially the leatherbacks *Dermochelys coriacea*, have always generated great interest among the naturalists and populace of Trinidad and Tobago. During the nesting season, it is not unusual to see as many as two hundred (200) people viewing nesting leatherbacks on a particularly good moonlit night. Nesting leatherbacks present a unique spectacle, and people who are fortunate to witness this phenomenon never forget the experience.

The leatherback turtle is listed as endangered worldwide under the united States Endangered Species Act. In Trinidad and Tobago, protection is afforded under the Fisheries Ordinance, Chapter 67:51 of 1975 which is known as the Protection of Turtle and Turtle Eggs Regulation. This act makes provision for the prosecution of anyone who captures, kills or mutilates any marine turtles or removes their eggs from the beaches where they nest. The Conservation of Wildlife Act, Chapter 67:01 also makes provision for the prosecution of anyone who kills, wounds, pursues, captures or molests by any method, any animal implied in the definition given for the word "animal" in Section 2 which reads "animal means any mammal, bird or reptile and includes the eggs, carcass, meat, nest or young thereof".

The leatherback turtle is a migratory species of sea turtle which nests predominantly on the north and north east coasts of Trinidad (Figure I) and some of the beaches of Tobago (Figure II) during the months of March to September. The hawksbill *Eretmochelys imbricata*, green turtle *Chelonia mydas*, loggerhead, *Caretta caretta* and ridley, *Lepidochelys olivacea*, also nest in Trinidad and Tobago, but they are not as common now as the leatherbacks.

The leatherback turtle is quite easily the largest of all the species of marine turtles with an average weight of three hundred and sixty four kilograms (364 kg) and measuring anything between 1.5 to 2.0 metres. It is immediately distinguishable by the absence of all cornified epidermal structures and instead the carapace has the texture of hard vulcanized rubber.

Nesting takes place at night with the average clutch size numbering from eighty to one hundred eggs (80-100). After an incubation period of sixty to eighty (60-80) days, the hatchlings emerge. Of this, only about five to ten percent (5-10) may survive to adulthood. The nesting leatherback is a relatively imperturbable animal and it is at this point that they are most vulnerable to predation. In Trinidad and Tobago, leatherbacks are exploited for their meat and eggs and therefore, it is not unusual to find many poachers on the beaches during the nesting season, hunting the turtles and their eggs. Ray and Coates (1958) commented that, although not used commercially, the flesh eaten from a leatherback captured in the Gulf of Maine "tasted like sirloin, but with a touch of the gaminess of venison."

It is felt, that almost twenty to thirty percent (20-30%) of the nesting leatherback population in Trinidad and Tobago is killed each year. In 1984 (see Table II) a total of twenty two (22) carcasses was counted as compared to seventy eight live sightings, putting the percentage to twenty-nine (29). The eggs are also dug up and taken, thus destroying the potential for future population increase.





2. EXISTING MANAGEMENT STRATEGIES

2.1 Trinidad

In Trinidad one of the management strategies being employed takes the form of patrols to ensure that the leatherbacks are afforded the protection needed while nesting on the beaches. Occasional patrols were conducted during 1982 by Forestry Division Personnel. These Patrols were undertaken on a regular basis by the Wildlife Section in conjunction with the North East Conservancy of the Forestry Division during the 1983 nesting season (March-August). This was continued in the 1984 nesting season, again employing the services of the previously mentioned sections of the Forestry Division. At Fishing Pond, a resident watchman was hired on a week-to-week basis from the month of June, 1984. External agencies such as the Field Naturalists Club also carried out patrols during this period on a regular basis. Patrols were concentrated at Matura Beach, Fishing Pond and Manzanilla. Prior to this period, dating as far back as the 1940's, regular patrols and tagging exercises were carried out by the Field Naturalists Club.

Educating the public was another management practice carried out by the Forestry Division. This mainly took the form of "education on the spot." Patrol officers would converse with anyone they met, explaining why there was such an urgent need for the conservation of Marine Turtles, especially leatherbacks in Trinidad and Tobago, and indeed the world. Articles were also written and distributed to the public, for example "Endangered Species- the Leatherback Turtle" by Dr. Carol James in the Booklet entitled "Highlighting Wildlife -Basic Information on Wildlife Conservation in Trinidad and Tobago" (September 1983).

From time to time, the Forestry Division is consulted on development matters which affect the environment and hence the Wildlife occurring there. Such was the case when Superior Sands Ltd. applied to the Quarries Advisory Committee in 1982 for a lease to remove sand from Matura Beach for use primarily in the oil industry's gravel-packing process. Forestry Division, recognizing the need for the wise and multiple use of our natural resources, was represented by Dr. Carol James, Wildlife Biologist and Mr. R. Bickram on a committee set up to evaluate this proposal. Permission to quarry sand was granted in 1983 during the nonnesting season under very strict conditions. Two recommendations were made that are especially important to the welfare of marine turtle nesting and the protection of its habitat. They are outlined as follows:

- 1. Continuous monitoring of operation by relevant government bodies and conservation groups should be undertaken to assess the impact on the physical and biological environment, and
- 2. Operations should cease within two months if advised to do so in the event that ecosystem damage becomes evident. Evaluation of nesting areas was an ongoing exercise wherever and whenever patrols were carried out. The number of turtles seen, both dead and alive for the 1983 and 1984 nesting seasons is outlined below in Tables I and II respectively.

TABLE I. NUMBER OF LEATHERBACK SIGHTINGS FOR THE 1983 SEASON

Locality	No. of	Sightings			Carcasses
	Patrols	Laid	Did Not Lay	Total	
Matura	13	4	1	5	Nil
Fishing Pond	2				8
Total	15	4	1	5	8

Locality	No. of		Sightings		Carcasses	Remarks
	Patrols	Laid	Did Not Lay	Total		
Matura	33	56	13	69	8	7 hatchlings were seen; 1 hawksbill also seen
Fishing Pond	7	21		21	11	Watchman reported a range of 5-6 per night during the peak season (June- July); 1 hawksbill sighting also reported
Manzanilla	2	1		1	3	
Total	42	78	13	91	22	

TABLE II. NUMBER OF LEATHERBACK SIGHTINGS FOR THE 1984 SEASON

2.2 Tobago

In Tobago, present management is strictly via patrols, organized by "Club Crusoe" formed in 1982 and headed by Mr. Stanley Beard. This club is an arm of the Institute of Marine Affairs Extension Services and Natural Resource Programme. Patrols are done on an irregular basis utilizing the services of young interested persons such as youth groups and school children.

Before this period, patrols were also carried out by the Fisheries Division in the mid 1970's, but this was abolished due to problems relating to costs and transportation. The Society for the Prevention of Cruelty to Animals (TSPCA) also had a programme called "Save the Turtle" which was instigated in 1968 at Turtle Beach. A bounty of \$25.00 was given to any person who did not kill the nesting turtle. This programme was abolished in 1978 because of the financial problems being experienced (money for the bounty was obtained from tourists staying at Turtle Beach Hotel).

Despite these setbacks, to date reports emanating from Tobago indicate that in 1984 there has been prolific nesting of marine turtles. Slaughters have also been significant and a count to June gave results of seven (7) carcasses on Stone Haven Beach, and five (5) carcasses on Turtle Beach. No indication of numbers can be given for the other species because the whole animal is removed.

2.3 Trade in Shells

Concerning the trade in shells there has not really been any close monitoring of this by any person, organization, or government agency. Occasional trade is still known to occur however, on a regional as well as international level with fishermen being the major suppliers. A few years ago the "producers" in Tobago enjoyed a prolific trade. The Handicraft Section of the Ministry of Community Development purchased shells for use in their village programmes as the raw material for making Bracelets, Earrings, Brooches, Pendants and Hairclips. This trade was discouraged about two to three years ago however.

3. MARINE TURTLE CONSULTANCY: UNDP / FAO EVALUATION AND DEVELOPMENT OF WILDLIFE RESOURCES (TRI/79/011)

The development objective of the above project is "to contribute to the promotion of the conservation and rational utilization of Trinidad and Tobago's valuable wildlife resources for the benefit of present and future generations of its people" (RI/79/011).

Marine turtles can certainly be counted as one of Trinidad and Tobago's valuable wildlife resources. Bearing in mind the development objective of the above stated project (TRI/79/011) and coupled with the increased occurrences of slaughters of marine turtles, destruction of the habitat (especially Matura Beach where sand mining is taking place), and lack of public concern for the plight of the turtles, a meeting comprising of the project manager Dr. John Bindernagel, Ornithologist Dr. A. Diamond, Wildlife Biologist Dr. Carol James, Doris Fabres of the Fisheries

Division and L.Chu Cheong of the Institute of Marine Affairs was held to discuss management of marine turtles. Arising out of this discussion, came the recommendation for a three-week consultancy on marine turtle management. This was awarded to Dr. Peter Pritchard, vice President of the Florida Audubon Society for the period June 20 - July 13. The specific objectives required under this consultancy are outlined below:

3.1 Field survey of marine turtle nesting areas

3.2 Evaluation of nesting areas with regard to value for turtles, land-use conflicts, and potential value for tourism

3.3 <u>Review of existing information collected over the past fifteen (15) years and initiation of analysis of these data</u>

3.4 Recommend management measures to control turtle harvest, and protect nesting areas

3.5 <u>Train personnel from Forestry Division, Institute of Marine Affairs and Field Naturalists</u> <u>Club in surveying nesting areas, monitoring turtle use of these areas, collecting information</u> <u>and analyzing this information</u>

3.6 <u>Preparation of a report describing marine turtle nesting in Trinidad and Tobago in the context of the Caribbean region and summarize findings</u>

Staff assigned to Dr. P. Pritchard, Marine Turtle Consultant, comprised of graduate trainee Nadra Nathai-Gyan, Forest Ranger II Leo Lendore, and Foresters I Roopnarine Sing and Chunilal Boodram of the Wildlife Section of the Forestry Division. During the 3-week period, areas evaluated were parts of the north coast, namely Blanchisseuse to Toco, parts of the northeast coast, namely Toco to Manzanilla, and the Moruga Bay area of the south coast. Table III summarizes the findings of the above research team, paying particular attention to sightings and description of the habitat.

Locality	Sight Animals	tings * Nests	Carcasses	Description of Area
Blanchisseuse Bay			3 costal bones of an adult hawksbill seen	Rocky beach
Paria Bay		25 (old and new)	1 leatherback; 1 scute of an adult hawksbill	Very wide sandy beach with incline suitable for marine turtle nesting, especially leatherbacks
Murphy Bay	2	5-6		Very wide sandy beach with incline suitable for marine turtle nesting, especially leatherbacks
Petit Tacarib		Seen but not counted		Very wide sandy beach with incline suitable for marine turtle nesting, especially leatherbacks
Grand Tacarib	8 (hatchlings also seen)	Many but not counted		Very wide sandy beach with incline suitable for marine turtle nesting, especially leatherbacks
Madamas		Seen but not counted		Very wide sandy beach with incline suitable for marine turtle nesting especially leatherbacks
Matelot				Rocky beach; not suitable for leatherback nesting
Parasol Beach		1		Small sandy beach

TABLE III. EVALUATION OF MARINE TURTLE NESTING AREAS, JUNE-JULY 1984

Locality	Sigh Animals	tings * Nests	Carcasses	Description of Area
Grande Riviere Beach		Many seen	Eggs are dug out by stray dogs and shells are predominant on beach	Coarse sandy beach
Big Bay		5		Coarse sandy beach
Matura		Many seen	3	Sandy beach generally strewed with rubble from the sea. Some areas are wide and have slopes allowing for good nesting areas. Other areas were subjected to erosion as a result of sand mining. Meeting was held with Quarries Advisory committee concerning same on site.
Fishing Pond		Many seen	2 (1-hour old)	Sandy beach generally strewed with rubble from the sea. Some areas are wide and have slopes allowing for good nesting areas.
Manzanilla			1	Does not seem suitable for nesting; sand is interlaced with gravel and tar
La Lune			Leatherback bone collected; 2 green turtles	Beach sand is very firm and rocky

TABLE III. EVALUATION OF MARINE TURTLE NESTING AREAS, JUNE-JULY 1984

* Sightings refer specifically to leatherbacks.

Actual sightings were minimal because most of the evaluation took place during the daytime.

A more detailed report taking into consideration all of the objectives outlined before will be compiled by Dr. Peter Pritchard, Marine Turtle Consultant (UNDP / FAO Evaluation and Development of Wildlife Resources Programme).

4. DISCUSSION

Marine turtle management to date has been restricted to patrols. This has not been round the clock because of the lack of adequate manpower and the length of time required for each patrol. Patrols were two nights weekly during the nesting season (March-August) and manned by Officers from the Wildlife Section and North East Conservancy of the Forestry Division. These Officers also have their normal duties assigned to them which have to be completed within a set timeframe. Therefore, it is only officers who are really concerned about wildlife conservation who perform effectively on these patrols, a total of about twenty (20) officers. Patrols took place normally during the hours of 6:00 pm to 3:00 am. Many Officers preferred to be at home sleeping rather than walking the beaches in order to afford protection to nesting leatherbacks and their eggs.

Another constraint which affected the patrols was the uncertainty among Forest Patrol Officers concerning the laws as outlined in the Fisheries Ordinance protecting turtles and their eggs. Under this regulation, only Fisheries Officers are empowered to lay charges for any offence(s) committed. However, since provision has been made in the Conservation of Wildlife Act, Chapter 67:01, Section 2 for the prosecution of anyone caught committing an offence(s) with regards to marine turtles and their eggs while on land, this did not prove to be an overwhelming problem. Using patrols and evaluation of nesting areas over a period time as the basis, there

seems to be a clear indication that population level of the leatherbacks in Trinidad has increased. This is also reflected worldwide in that the latest world population estimate of 115,000 mature females done by Pritchard (1982) is far greater than the previous world population estimate of 29,000 to 40,000 mature females made by Pritchard (1971). This increase is accounted for by the discovery of one large population of breeding females in Pacific Mexico. As a result, Dr. P. Pritchard has stated that he no longer believes the leatherback turtle to be endangered, but there is still need to monitor its population because it can easily be reverted to a. critical status.

One of the reasons forwarded for this increase is the success of the patrols that were carried out over a period of time (as has been noted before, patrols started a long time ago by the Trinidad and Tobago field Naturalist's Club and TSPCA). It is believed that the protection afforded to the nesting leatherbacks and their eggs by these patrols have resulted in this increase as of 1984. Whether this is short-lived or cyclical remains to be seen in the 1985 nesting season.

Game Warden II U. Whittier, in charge of the 1983 patrols has stated that the number of sightings made in 1984 was greater than in 1983 (see Table I). The situation was also true for carcasses, in that the sightings for 1984 was far greater than for 1983. One of the reasons for this increase in number of carcasses sighted was the increased monitoring carried out in 1984. The primary cause, however, was the easy accessibility to the area since there is a road going straight down to the beach.

As a result of direct observations of the nesting of leatherback turtles by patrol officers the peak nesting season was determined to be during the months of June-July. During this period, it was not uncommon to see as many as ten nesting leatherbacks on any one night. While on patrol on the night of June 20, 1984, ten leatherback turtles came ashore. A total of six built nests and laid eggs while four returned to the sea without laying.

During the 1984 nesting season, evaluation of nesting areas was an ongoing process in all areas where patrol and field surveys were carried out because of the importance of habitat to the success of nesting, and therefore, population increase. Leatherbacks are very specific when choosing their nesting areas. Hughes, Bass and Mentis (1967) note that leatherbacks come ashore on stretches of beach that are most easily approached. They cite two probable reasons for this behaviour:

- a. the skin of the leatherback is tender and could easily tear or be damaged if the animal accidentally rubbed against or collided with the rocks, and
- b. leatherbacks, being so large, require plenty of room in which to manoeuvre and therefore shun rock-strewn areas where their movements may be restricted.

Pritchard (1971) also found that the leatherbacks select beaches with sufficient slope so that the climb to dry land above the high tide mark would not involve a long overland trek. The beaches selected by the leatherbacks all exhibit these characteristics. However, concern must be voiced over the destruction of some of these beaches, especially the Matura/Salibia area. Here, as stated before, the process of sand mining by the authorised company and unauthorised persons for use in the oil industry takes place during the non-nesting season. This removal of sand has resulted in the drastic erosion of the turtle nesting area. This is illustrated by the presence of huge craters on the beach and numerous fallen coconut trees on the shoreline. Although nesting leatherbacks are one of our valuable wildlife resources, they do not contribute directly to the economy of our country and as such whenever there are conflicting land uses, the nesting leatherbacks come out the losers in the battle. The problem lies in the fact that it is difficult to foresee the long term potential importance of this wildlife resource. If the oil industry should no longer be economically viable, it is highly possibly that there can be rational harvesting of the leatherback for its meat and generation of revenue from the development of this resource as a tourist attraction.

The beaches are also polluted with rubble from the sea and visitors to the areas, leaving only small areas suitable for marine turtle nesting. This results in serious consequences for the nesting turtles since, according to Dr. P. Pritchard, each beach has its own colony of nesting turtles. If beach is lost by any factor (erosion, pollution), some turtles cannot adapt to another area and are known as waifs. Others however can act as pioneers, colonizing new beaches.

Exploitation of marine turtles for their meat, eggs and shells has always been a serious problem through the years. This situation is no different in Trinidad and Tobago and from interviews conducted with fishermen in turtle-nesting areas it was learnt that the green and hawksbill turtles are hunted more than the other species. People claim that the meat has a better taste and the turtles are easier to handle. Legend has it that marine turtle eggs have aphrodisiacal qualities and in Trinidad eggs are greatly exploited for this reason. The shells obtained from the turtles are also traded on a regional and international basis for use in the handicraft industry.

Table II indicates that during the 1984 nesting season, a total of twenty-two carcasses of leatherbacks was counted. This is not believed to be a true indication however, since because of increased accessibility to the nesting areas the entire animals may be carried away. This can also account for the lack of sightings of carcasses of the smaller species of marine turtles since they can also be easily carried away.

5. **RECOMMENDATIONS**

5.1 Public information in the form of lectures/slides shows/articles should be the main thrust at this period of time to promote greater public awareness of marine turtles. This should be concentrated in the critical areas such as Fishing Pond and Matura/Salibia area

5.2 Patrols should be upgraded in the critical areas such as Fishing Pond and Matura/Salibia area to allow stricter enforcement of the law. In cases where it is impossible, hiring of resident watchmen should be considered

5.3 Since Forest officers are the main patrol officers, the laws governing turtles and their eggs should be clearly disseminated to them, perhaps in the form of lectures/discussions before the season commences to ensure that no conflict arises while they are performing their duties

5.4 In April 1984, Trinidad and Tobago became signatory to the Convention on International Trade in Endangered Species (CITES). Careful monitoring of trade in marine turtle shells should be a must

5.5 Protection of nesting areas should be carefully considered. At Matura and Fishing Pond areas, protected status during the nesting season should be granted. It would be easier therefore to monitor the amount and type of people entering the area

5.6 Conflicting land use problems of the turtles' habitat should also never be allowed to surface, especially where the edge is usually given to the one which generates greater or direct revenue, for example, sand mining at Matura Beach.

6. CONCLUSION

A well-managed wildlife resource can only enhance the rich and varied heritage of wildlife of Trinidad and Tobago. It will also be one of the attractions of the tourist industry and will therefore contribute to the diversification of the economy of the country. The conservation of genetic resources by this means will also contribute to research in general.

Conservation, which simply means the wise use of our natural resources, is a concept of grave importance to the Wildlife Section of the Forestry Division. Hence, the reason for placing management of our wildlife resources high on our priority list.

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- 7.8 Telamac, Desmond. Personal interview (The Society for the Prevention of Cruelty to Animals: TSPCA)
- 7.9 TRI/79/011. Evaluation and Development of Wildlife Resources
- 7.10 Wildlife Section. 1983 Nesting Season Patrol Officers Wildlife Section. 1984 Nesting Season Patrol Officers



APPENDIX V

Excerpt from Sunday Punch, 07 June 1987 "King of Sex Drinks" by Ian Smith.

APPENDIX VI

Excerpt from Milliken, T. and H. Tokunaga. 1987. The Japanese Sea Turtle Trade 1970-1986. A special report prepared by Traffic. Pp. 96

Trinidad and Tobago

Bekko

Although no trade was reportedly received from Trinidad and Tobago between 1970 and 1982, imports of bekko from these islands suddenly appeared in the Japanese Customs data in 1983, 1984, and 1985 for a total of 1,081 kg (Appendix 1). In 1986 the trade halted altogether. This occurred after the CITES Management Authority of Trinidad and Tobago confirmed to TRAFFIC (Japan) that 63 kg of bekko exported to Japan in 1985 after the Convention had come into force were not authorized with proper CITES documents (James, in. litt.). Subsequent enforcement efforts on the part of the authorities have apparently met with success.

Dealers' data reported trade from Trinidad and Tobago in 1984 and 1985. These data correlated perfectly with Customs statistics in 1984 (Figure 66).



Figure 66: Comparison of Dealers' Data for Trinidad & Tobago with Customs Statistics 1984-1986.

Editor's note (2009): The figure was redrawn from that featured in the original national report.

The average weight of bekko per animal ranged from 1.03 kg to 1.06 kg in the data (Table 1), indicating that at least 1,000 hawksbills comprised the trade between 1983 and 1985.

Venezuela

Bekko

During the entire period examined, 1970 to 1986, Venezuela provided bekko to Japan on only two occasions. In 1973, 171 kg were received and, in 1986, another 9 kg, most probably a violation of CITES, were reported in the Japanese Customs data (Appendix 1). The dealers' data also contained the 9 kg import in 1986 (Appendix 8).

APPENDIX VII

Excerpts from James, C. and R. Loregnard (1987). Report of the Trinidad and Tobago Delegation to the Sixth Meeting of the Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Ottawa, Canada, July 12-24, 1987.

Marine Turtle Trade

Carol James and Robert Loregnard, 1987

The French delegation introduced a proposal that *C. mydas* be transferred from Appendix I to Appendix II to allow trade in ranched specimens. They attempted to justify this on the grounds that the population in the Indian Ocean islands of Tromelin and Europa is large and stable and that ranching operations were beneficial to the conservation of the species. In addition, they had developed a system of marking of ranched specimens which had been approved by a CITES Technical Committee. There was considerable debate on the proposal and the eventual consensus was that:

- i. The meeting was not convinced that the Europa and Tromelin populations of *C. mydas* were out of danger as there was a lack of comprehensive biological information
- ii. Approval of the French proposal would create enforcement problems as the marking system was not foolproof. There would therefore be the opportunity for substitution of wild caught specimens into the ranched products
- iii. The apparent poor enforcement of CITES in France and evidence that shipments of marine turtle products had entered France through its overseas departments in the Caribbean and South America. The delegations of Brazil, St. Lucia, Trinidad and Tobago and the U.S.A. spoke out strongly against the French proposal. This stand by the Brazil, St. Lucia, and Trinidad and Tobago delegations led to strained relations at subsequent Latin American and Caribbean Regional meetings which were attended by France.

The proposal was defeated in a secret ballot and a Working Group was set up which subsequently drafted a Relation on Guidelines for Evaluating Marine Turtle Ranching Proposals (Com 6.19). It recommends that a specialist meeting be set up to provide guidelines that take into account biological, economic and trade aspects. The deadline for reporting is 1988 April 30.

The interests of the Caribbean region is based upon the fact that there were alleged infractions of CITES by Trinidad and Tobago which was used as a transhipment point for marine turtles and turtle products to Japan and to France (Com 1.6.5).

Past collaboration between CITES, Japan and Trinidad and Tobago saw a shift in the centre of operation in trade of marine turtle products from Trinidad and Tobago and other Caribbean territories to Barbados, St. Lucia, Martinique and Guadeloupe.

The Trinidad and Tobago delegation proposed that this resolution be placed as an agenda item at the forthcoming meeting of the Western Atlantic Trade Symposium carded for October 11-16, 1987 in Puerto Rico. This was unanimously accepted by the Marine Turtle Working Group and an invitation was extended to the GORTT to send a biologist to represent this country at that Symposium.

APPENDIX VIII

Excerpts from Groombridge, B. and R. Luxmore. 1987. The Green Turtle and Hawksbill (Reptilia Cheloniidae). A Draft Report to the CITES Secretariat. IUCN Conservation Monitoring Centre; Country Accounting For Trinidad And Tobago

Trinidad & Tobago (Draft July 1987)

1. POPULATIONS

Population: Chelonia mydas

Nesting sites

Nesting sites Information is limited. Green turtles were reported to nest on the north and east coasts of Trinidad, with specific nesting beaches being identified at Mayaro, Matura, Matelot and Big Bay (Bacon, 1973) and Manzanilla Bay (Bacon, 1981). Nesting on Tobago was known to occur at Batteaux Bay and Grafton Estate (Bacon, 1981).

Nesting numbers

No numerical data are available. Pritchard (1984) stated that nesting was occasional and probably less common than that of the hawksbill. Carr et al. (1982) considered green turtle nesting density to be minimal and Bacon (1981) reported nesting to be occasional on both Trinidad and Tobago. When compared with the nesting concentrations in the Guianas (Pritchard, 1969) the Trinidad and Tobago turtle populations were considered to be very small, though they were thought to be larger than those on most Caribbean islands (Bacon, 1973).

Trends in nesting numbers

No information.

Nesting season

Nesting records are sparse; in part using data from nearby populations, Bacon (1973) estimated the nesting season of *C. mydas* to be February to August.

Foraging sites

Pritchard (1984) considered *C. mydas* to be moderately common in the waters of Trinidad and Tobago and Bacon (1981) reported frequent foraging by both adults and juveniles in the waters around Trinidad. Foraging in Trinidad was known to occur in the Gulf of Paria, on the north coast near Toco (Bacon, 1981), and at Grande Riviere Bay, Soldado Rock and Scotland Bay (Chu Cheong, 1984). Man O' War Bay, Buccoo Reef and Bon Accord Lagoon were identified as foraging sites at Tobago (Bacon, 1981).

Migration

There appears to be an important migratory route along the northern coast of Trinidad and Tobago (Carr et al., 1982). A green turtle that had been tagged on the Tortuguero nesting beach (Costa Rica) was later captured in the Gulf of Paria on the west coast of Trinidad (Carr, et al., 1982).

Population: Eretmochelys imbricata

Nesting sites

Information is limited, but the species is known to nest on the north and east coasts of Trinidad and also on Tobago (Bacon, 1973). Nesting on Trinidad has been reported at Mayaro, Big Bay, San Souci, Matelot, Monos Island, Huevos Island and Chacachacare Island (Bacon, 1973); Maracas, Matura, and Manzanilla (Bacon, 1981); Brigand Hill (Carr et al., 1982); and Macqueripe Bay (Chu Cheong, 1984). The only nesting site so far identified on Tobago was at Bird of Paradise Bay (Bacon, 1973).

Nesting Numbers

Bullis (1984) inferred heavy to moderate nesting activity but this seems unlikely as only two confirmed hawksbill nests were reported by Chu Cheong (1984). Bacon (1981) considered hawksbill nesting on Trinidad to be rare and Carr et al. (1982) believed nesting density to be minimal. Pritchard (1984) concluded that the species nested rarely on beaches in eastern Trinidad, somewhat more frequently on the north coast beaches, and regularly, though not in aggregations, on the islands of the Boca del Dragon, especially on Chacachacare Island.

Trends in nesting numbers

No information.

Nesting season

Ingle and Smith (1949, cited in Bacon, 1973) gave the hawksbill nesting season as June to August in Trinidad. However, using other observations, Bacon (1973) gave the nesting season as May or June to September. According to Pritchard (1984) an informant at Paria Beach, Trinidad, reported that hawksbills nested there in small numbers from March-October.

Foraging sites

Bacon (1981) reports frequent foraging by adult hawksbills and gives Salybia Reef and the north coast near Toco as foraging sites in Trinidad, and Buccoo Reef, Man O' War Bay and Bon Accord Lagoon as major foraging sites in Tobago. Chu Cheong (1984) reports foraging in Trinidad at Macqueripe Bay, Grande Riviire Bay, Salibra, Salire Bay, Canari Poit and Soldado Rock.

Migration

No information available.

2. EXPLOITATION

Commodity

The sale of meat and eggs of all species and of shell from the green and hawksbill supplement the income of many fishermen for short periods of the year (Bacon, 1973). According to Pritchard (1984), the hawksbill was taken principally for the export of its shell. The green turtle was taken largely for its meat and Pritchard (1984) considered the shell and leather to be of little commercial value or importance.

Hunting intensity

Lee Lum (1985) reported that six depots were involved in catching sea turtles: Matelot, Taco, Grande Riviere, Mayaro, La Lune and Carenage. Nine other depots were investigated but fishermen claimed not to be involved in turtle hunting. Both *Eretmochelys imbricata* and *Chelonia mydas* were caught. Reported weekly catches at each of the turtle catching depots ranged from 4 to 10 turtles, but on one occasion 50 turtles had been caught in one day in 1980 at Mayaro. The number of people gaining part-time earnings by fishing for turtles varied from 1 to 4 at each of the depots. Lee Lum (1985) also reported that fishermen from the

south-western depots of Icacos, Fullerton and Cedros had stopped fishing for turtles owing to their scarcity.

Hunting methods

Lee Lum (1985) reported the use of special turtle nets with a mesh size of 30 x 30 cm and extending 7 to 8 mesh (210 cm-240 cm) down into the water. They were approximately 30.5 m in length and could be joined to span longer areas. The nets were set in known feeding areas and checked every morning and evening. The majority of turtles were caught at night. Lee Lum (1985) also reported the use of harpoons at Grande Riviere, Toco and Carenage, and noted that at Taco, the hawksbill was usually caught by harpoon.

Carr (1956, cited by Pritchard and Trebbau, 1984) reported fishermen dragging crude wooden decoys of female turtles behind their boats in order to attract male turtles.

Historical trends

Ingle and Smith (1949, cited by Bacon, 1973) stated that 60,000 lbs (27,273 kg) of turtle meat were sold in 1947 at the Port of Spain market. About 10,000 lbs of turtle meat was sold through the Carenage, Port of Spain and San Fernando markets in 1970 and most of this was green turtle and hawksbill meat. This was only a small percentage of the meat sold as most of it did not pass through the larger markets where state records are kept (Bacon and Maliphant, 1971). Bacon (1970, cited in Bacon and Maliphant, 1971) estimated that in 1969 nearly all of the turtles nesting on the inhabited north coast beaches were killed each year. It was estimated that a catch of 15 turtles in one week in April 1972, held at St David Fishing Cooperative, would yield at least 1,500 lbs (682 kg) of meat. According to Lee Lum (1985) it was apparent that turtle fishing activity had declined since the enactment of the 1975 Protection of Turtle and Turtle Eggs Regulations. Fisheries Department figures were collected for 1969, 1970 and 1971 (Table # 88) but Bacon (1973) cautions that these are far from complete.

TABLE 87. TOTAL QUANTITY OF SEA TURTLE MEAT SOLD

Fishery statistics data, 1969-1980, supplied by Fisheries Division, Ministry of Agriculture, Lands and Food Production (Lee Lum, 1985).

	Trir	nidad	Tob	ago
Year	Weight (kg)	Value (TT \$)	Weight (kg)	Value (TT \$)
1969	5,327.9			
1970	3,975.3	3,137	217.7	994
1971	6,627.5	5,966	145.1	171
1972	6,711.0	6,922	18.1	24
1973	3,592.9	5,488	249.4	400
1974	5,324.3	6,430	138.3	305
1975	6,101.3	10,922	18.1	50
1976	4,103.2	9,555		
1977	2,569.8	8,277		
1978	3,180.1	11,894		
1979	3,836.0	14,476		
1980	7,251.2	28,454		
Average	4,883	10,134	131	216

TABLE 88. FISHERIES DEPARTMENT STATISTICS ON THE QUANTITY (IN KG) OF TURTLE MEAT SOLD AT SIX BEACHES IN TRINIDAD (Bacon, 1973)

Location				
		1969	1970	1971
Carenage		5,256	3,950	4,302
Gran Chemin				1,424
Icacos		83		
Matelot			10	
Mayaro				895
San Fernando			23	20
	Total	5,339	3,983	6,641

Domestic trade

Most of the green turtle and hawksbill meat is sold locally, being very popular in the coastal villages (Bacon and Maliphant, 1971). However, turtles caught by fishing boats at Cedros, or even as far south as Icacos, were frequently taken to markets in Port of Spain (Bacon 1973). The retail price of turtle meat was TT\$3.00-TT\$5.00/pound (TT\$6.60-TT\$II.0/kg) at the fishing depots investigated by Lee Lum (1985) and up to TT\$8.00/pound (TT\$17.6/kg) at inland markets. The wholesale price was between TT\$I.00-TT\$2.00/pound (TT\$2.20-TT\$4.4/kg), while turtle carapace sold for TT\$5.00-TT\$18.00/pound at five of the depots. Lee Lum (1985) also reported that some carapaces were bought and sent to Tobago. Pritchard (1984) recorded that a considerable proportion of hawksbill shell caught in Trinidad and Toba-go waters was purchased, currently for TT\$15/pound (TT\$33/kg), by Hashim Mohamed of Toco.

The carapaces of juvenile hawksbills were reported by Bacon (1973) to be sold to tourists for TT\$30.00 or more, the smaller ones gaining the higher prices.

International trade

A considerable quantity of hawksbill shell from Trinidad is said to be exported to Japan by a dealer from St Lucia, Charles Fritz, who visits Trinidad (and other islands as far away as the Bahamas) approximately every 3 months purchasing shell for export (Pritchard, 1984). Bacon and Maliphant (1971) considered there was little export of turtle shell from Trinidad. Lee Lum (1985) noted that some carapaces at the depots investigated were bought and sent to England.

Imports of *E. imbricata* shell reported in Japanese Customs statistics are given in Table # 89. It should be noted that, as much of the hawksbill shell from Trinidad is said to be exported to Japan via St. Lucia, it may not be reported as coming from Trinidad in Japanese Customs statistics.

Trinidad and Tobago acceded to CITES on 19.01.1984. CITES Annual Reports between 1977 and 1984 record exports to the U.S.A., U.K. and Denmark of a total of 7 *C. mydas* shells, 3 *E. imbricata* shells and 1 *Cheloniidae* shell.

TABLE 89. IMPORTS OF BEKKO (*E. IMBRICATA* SHELL) FROM TRINIDAD AND TOBAGO, REPORTED IN JAPANESE CUSTOMS STATISTICS (KG)

No trade was reported in the other intervening years.

Year	1952	1953	1954	1955	1956	1957	1958	1959
Amount (kg)	102	0	32	137	131	95	423	0
Year	1960	1961	1962	1963	1983	1984	1985	1986
Amount (kg)	0	231	755	530	329	544	208	0

3. PROTECTED AREAS

- Little Tobago Wildlife Sanctuary A hilly, 101 ha island situated one mile off the northeast coast of Tobago near Speyside, 11° 17' N, 60° 29' W (IUCN, 1982).
- St. Giles Islands Wildlife Sanctuary
 A steep, 288 ha island about 1 km off the northeast coast of Tobago, 11° 20' N, 60° 30' W (IUCN, 1982).
- Saut d'Eau Wildlife Sanctuary An area of 10 ha, less than 1 km off the north coast of Trinidad, incorporating a rocky island, 10 ° 46' N, 61°31' W (IUCN 1982).
- Kronstadt Island Nature Reserve An area of 4.8 ha in the Gulf of Paria, southwest of Carrera Island, 10° 39' N, 61° 37' W (IUCN, 1982).
- Soldado Rock A precipitous rock, situated 10 km west of Icacos Point, 10° 03' N, 62° 00' W (IUCN, 1982).
- Bucco Reef/Bon Accord Lagoon Restricted Area Situated 12 km southwest of Scarborough on a shallow reef extending from the southwestern end of Tobago, 11° 10' N, 60° 50' W. The restricted area covers approximately 650 ha, of which 300 ha are terrestrial. Extensive patches of *Thalassia* occur in Bon Accord Lagoon. *D. coriacea* and *C. mydas* have been recorded here (Wells, 1987).
- <u>Arnos Vale Bay Proposed Protected Area</u> The bay, approximately 1 km northwest of Plymouth, Tobago, 11° 13' N, 60° 46' W, incorporates a beach, some 150 m long (Wells, 1987).
- <u>Culodden Bay Proposed Protected Area</u> Situated approximately 4 km northeast of Plymouth, Tobago, 11° 15'N, 60° 45' W, the bay incorporates a beach some 100 m long (Wells, 1981).
- <u>Eastern Tobago Proposed National Park</u> The proposed park would cover an area of 5,700 ha off the northeastern tip of Tobago, including all the land area with the coastal islands (Goat Island and Little Tobago) and marine communities (Wells, 1987).

4. LEGISLATION

Protection of Turtle and Turtle Eggs Regulations 1975

- It is prohibited to take or possess female turtles which are in the sea within any reef or within 1,000 yards from the high water mark of the foreshore when there is no reef
- It is prohibited to purchase, sell or possess any turtle eggs
- It is prohibited to take, possess, purchase or sell any turtle or turtle meat from 01 March to 30 September

The Fisheries Act 1916

• The use of poison or explosives to kill or capture fish (including sea turtles) is prohibited.

APPENDIX IX

Conservation of Wildlife Act. Chapter 67.01 of the Laws of Trinidad and Tobago 1958

LAWS OF TRINIDAD AND TOBAGO

CONSERVATION OF WILD LIFE ACT CHAPTER 67:01

> Act 16 of 1958 Amended by 14 of 1963

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CHAPTER 67:01 CONSERVATION OF WILD LIFE ACT

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- 4. Hunting etc., in Game Sanctuary.
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- 7. Hunting prohibited in close season.
- 8. Establishment and composition of Wild Life Conservation Committee.
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FIRST SCHEDULE. SECOND SCHEDULE. THIRD SCHEDULE. FOURTH SCHEDULE. FIFTH SCHEDULE. SIXTH SCHEDULE.

Conservation of Wild Life Chap. 67:01 (Pages 1-23)

CHAPTER 67:01 CONSERVATION OF WILD LIFE ACT

16 of 1958	An Act to make better provision for the Conservation of Wild Animal Life in Trinidad and Tobago.
Commencement 49/1963.	[15 th March 1963]
Short title	1. This Act may be cited as the Conservation of Wild Life Act.
Interpretation [14 of 1963].	 In this Act- "animal" means any mammal, bird or reptile and includes the eggs, carcase, meat, nest or young thereof; but does not include any domesticated animal or any animal which has been lawfully kept in captivity; "Chief Game Warden" means the Conservator of Forests and includes any officer of the Forest Department authorised by him to act on his behalf;
Fifth Schedule	 "close season" means the period of the year specified in the Fifth Schedule; "State Lands" includes- (a) the waste or vacant lands of the State within Trinidad and Tobago; and (b) all lands vested in the State whether by forfeiture, purchase or exchange and not dedicated to the public; "Forest Reserve" means a Forest Reserve declared as such by the Land Regulations for the time being in force; "Game Sanctuary" means any area declared to be a Game Sanctuary in accordance with section 3; "Game Warden" means any person declared to be a Game Warden in accordance with section 23(1) and includes an Honorary Game Warden; "gun" includes an air-gun, blow-pipe, set gun, sling-shot and any article from which any shot, bullet or other-missile may be discharged; "hunt" means killing, wounding, pursuing, capturing or molesting by any method, any animal, and also attempting to

LAWS OF TRINIDAD AND TOBAGO

Conservation of	f Wild Life	Chap. 67:01	(Pages 1	-23)
	Do any of such the killing or ca "protected anim Second or Third	things; and includes any act imr pture of any animal; nal" means any animal specified d Schedule.	nediately directed at or mentioned in the	Second and Third Schedules. Game
	schedule are h (2) The Chie may by Notifica deleting there f the limits and b	ereby declared to be Game San of Game Warden with the approv ation amend the First Schedule b from any area specified in such r boundaries of any Game Sanctua	ctuaries. /al of the Minister by adding thereto or notice and may alter ary.	Sanctuaries. First Schedule.
	 4. (1) Except a (a) hunts anim (b) is fou show (c) takes in a C (d) carria devic is guilty of an o dollars or to imp (2) Any pers animal shall be Sanctuary unle shall lie upon th 	as provided by sections 9 and 10 s or is a member of a party engage al in a Game Sanctuary; or and within a Game Sanctuary und ing that he was hunting any aning any dog or knowingly permits an Game Sanctuary for the purpose es in a Game Sanctuary any gun be capable of being used to hunt ffence and is liable to a fine of or prisonment for three months.	any person who - ged in hunting any der circumstances nal; or ny dog to enter or be of hunting; or or other weapon or animals, ne thousand in possession of any nimal in such Game nus of which proof	Hunting etc. in Game Sanctuary
	 5. (1) Except a or shall be a ma animal. (2) Any pers (a) contra (b) has ir anima is guilty of an o to imprisonment 	as provided by section 10 no persember of a party engaged in hun son who- avenes subsection (1); or n his possession the whole or an al, ffence and liable to a fine of one at for three months.	son shall hunt ting any protected y part of a protected thousand dollars or	Hunting protected animals
Hunting etc. in Stale Lands	6. (1) Excep shall- (a) hu an State La (b) be	ot as provided by sections 9 and int or be a member of a party eng y animal specified in the Second nds; or e found within State Lands under	10 no person gaged in hunting i Schedule, in	
Second Schedule	sh (c) tal St (d) ca de save in acco issued by the State Game	owing that he was hunting any s ke or knowingly permit any dog to ate Lands; or wry in State Lands any gun or oth vice capable of being used to hu rdance with the terms and condit chief Game Warden (in this Ac Licence).	ucn animal; or o enter or be in ner weapon or int such animals, tions of a licence ct referred to as a	

(2) A State Game Licence shall be in the prescribed form, shall be valid for the period specified therein and shall not be transferable.

(3) Any person who obtains a State Game Licence issued under this section, and is found on State Lands in circumstances showing that he is hunting, shall on demand produce such licence for inspection by a Game Warden or constable, and in default thereof is guilty of an offence and liable to a fine of one hundred dollars.

(4) Any person who contravenes subsection (1) is liable to a fine of four hundred dollars or to imprisonment for three months and to be disqualified from holding or obtaining a State Game Licence for such period as the Magistrate thinks fit.

- (5) Any person who, while disqualified from holding or obtaining a
- State Game Licence under subsection (4)-
 - (a) hunts or is a member of a party engaged in hunting in State Lands; or
 - (b) obtains or attempts to obtain a State Game Licence, is liable to a fine of two thousand dollars or to imprisonment for six months.

(6) A person convicted of an offence under subsection (5) shall, without prejudice to the power of the Court to order a longer period of disqualification, be disqualified for a period of not less than twelve months from the date of the conviction from holding or obtaining a State Game Licence, and on a second conviction for a like offence shall be permanently disqualified from holding or obtaining a State Game Licence.

Chap. 67:01

Hunting

closed season

prohibited in

[14 of 1963]

(7) Any Game Warden may arrest without warrant any person found committing an offence under subsection (5).

7. (1) Except as provided under subsection (2) and section 10, no person shall hunt or be a member of a party engaged in hunting any animal during the close season.

(2) The Chief Game Warden may, on such terms and conditions

as he may think fit, on application made by the owner or custodian of dogs normally used for hunting, in writing, authorize such owner or custodian to exercise such dogs by pursuing agouti and deer in lands other than Forest Reserves and Game Sanctuaries during the close season.

(3) No person authorised to exercise dogs in the manner described in subsection (2) shall, while engaged in such pursuit, have in his possession any gun or other weapon or device for the capture or killing of any animal.

(4) Any person who contravenes subsection (1) or subsection (3) is liable to a fine of two thousand dollars or to imprisonment for six months.

8. (1) There shall be established a Committee to be called the Wild Life Conservation Committee. The Committee shall consist of the Conservator of Forests as Chairman and not more than nine other members to be appointed by the Minister as follows:

- (a) one member to represent amateur hunters in Trinidad and Tobago;
- (b) one member to represent field naturalists in Trinidad and Tobago;
- (c) one member to represent the Trinidad and Tobago Police Service;
- (d) one member to represent the Agricultural Society of Trinidad and Tobago;
- (e) one member to represent the Zoological Society of Trinidad and Tobago;
- (f) one member to represent the interests of Cage Birds fanciers;
- (g) one member being a duly qualified-ornithologist;
- (h) one member being a duly qualified zoologist;
- (i) one member to represent the Minister

Establishment and composition of Wild Life Conservation Committee

Chap. 67:01

(2) Every member of the Committee shall, unless his appointment is sooner determined by the Minister or he sooner resigns by notice in writing to the Minister, or he sooner dies, hold office for three years from the date of his appointment but shall be eligible for re-appointment from time to time. (3) The Minister may appoint any person to act in the place of the Chairman or any other member of the Committee in the case of the absence or inability to act of such Chairman or other member. (4) The Committee may act notwithstanding any vacancy in the number of members constituting the Committee. (5) The Committee shall have power to regulate its own procedure. (6) The Committee shall act in an advisory capacity to the Minister on all matters pertaining to the conservation of wild life in Trinidad and Tobago. Residents' 9. (1) The Chief Game Warden may, on application made in writing, grant to any person who is ordinarily resident within Licences State Lands or a Game Sanctuary, a licence (to be known as a Resident's Licence) to keep dogs, guns and other weapons or devices capable of being used to hunt animals while such person is so resident. (2) A Resident's Licence shall be in the prescribed form and shall be valid for the period specified therein and shall not be transferable. 10. (1) The Chief Game Warden may upon such conditions Special Game Licence in as he thinks fit, grant licences (in this Act referred to as Special Game Licences) which shall entitle the holder to hunt certain cases any animal specified therein for any of the following purposes: (a) scientific research; (b) collection of specimens for zoological gardens, museums and similar institutions; (c) the eradication of animals declared to be vermin by section 11. (2) A Special Game Licence issued for any of the purposes mentioned in subsection (I)' may authorise the hunting of any animal, whether in a Game Sanctuary or not. Fourth Schedule (3) A Special Game Licence granted under subsection (1) shall be in the form set forth in the Fourth Schedule and shall state the species, number and sex of each animal which may be

hunted and shall be limited as regards the period and area within which the hunting is to take place.

(4) The Chief Game Warden may suspend or cancel any special Game Licence granted under subsection (1). 11. (1) The animals mentioned in the Third Schedule are

hereby declared to be vermin.

Vermin Third Schedule

(2) Subject to sections 4 and 6, the owner or occupier of any lands, his agent or servant may, without licence of any kind, on such lands hunt and destroy any animal mentioned in the Third Schedule whether during the close season or not.

12. (1) If any Game Warden or constable has reasonable for Powers of suspecting that any person has contravened any of the provisions of this Act he may-

- (a) require any such person to produce for inspection any animal in his possession or any licence or other document issued to him under this Act:
- (b) stop and search any person and any vehicle, boat or other conveyance in the possession of such person or in which such person happens to be, and open and search any baggage or other thing in his possession;
- (c) enter and search any tent, building or land in the occupation of any such person; but no dwelling house shall be entered without a warrant except in the presence and with the consent of the owner or occupier thereof;
- (d) seize any animal in the possession of any such person:
- (e) seize all guns, dogs, boats, vehicles or other equipment which he has cause to suspect was used in connection with any such contravention.

(2) When any person is convicted of an offence under this Act, any animal in respect of which the offence has been committed and all guns, dogs, boats, vehicles and other equipment used in the commission of such offence are liable to be forfeited to the State by order of the Magistrate or to be otherwise dealt with as to the magistrate may seem just. Such forfeiture may be in addition to any other penalty or compensation prescribed for such offences.

(3) Where the carcase or meat of an animal is seized under this section, the Magistrate before whom such animal is brought,

search and seizure

100

Conservation of V	Vild Life Chap. 67:01	(Pages 1-2.
	shall, if in his opinion it cannot be adequately preserved forthwith order the same to be tendered as an exhibit, a shall thereafter make such order with respect to its disp as may seem to him just and reasonable.	l, and bosal
Persons found offending.	13. Where any person is found committing an offence against this Act it shall be lawful for any other person to require such offender to give his name and place of aboand in case the offender does not give his name or place abode, or gives a name or place of abode that is false, offender shall, in addition to any other penalty to which may be liable under this Act, be guilty of an offence and liable to a fine of one hundred dollars or to imprisonment thirty days.	o bde, ce of such he d nt for
Arrest without Warrant.	14. Any Game Warden may arrest without warrant any person found committing an offence against this Act wh name or place of abode is unknown to him, and may de such person at a Police Station until the name and place abode of such person can be ascertained	nose etain ce of
Punishment for assaulting or resisting Game Warden.	15. Any person who assaults, obstructs or resists any 0 Warden in the execution of his duty is guilty of an offen and liable to a fine of one thousand dollars or to imprisonment for three months.	Game ce
Right of Game Warden to conduct case.	16. Where any Game Warden makes a complaint again any person for an offence against this Act, any other G Warden may appear on his behalf before a Magistrate hearing the said complaint and shall have the same privileges as to addressing the said Magistrate and as examining any witnesses as if he were the complainant	nst ame who is to
Acceptance by Game Warden Of compensation for offence	 17. (I) The Minister may, by writing under his hand, em a Game Warden- (a) to accept from any person admitting the commission of any offence against this Act, th for which does not exceed two hundred dollar sum of money not exceeding two hundred dol by way of compensation for such offence; and (b) when any property has been seized as liable. 	power e line s, a lars l
	forfeiture, to release the same on payment of value thereof as estimated by the Game Ward	the den.

(2) A Game Warden acting under subsection (I) shall

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Issue to person admitting an offence a receipt for all monies paid by or value.

(3) On payment of such sum of money, or such value or both, as the case may be, to the Game Warden, such person, if in custody shall be discharged, the property if seized shall be released, and no other proceedings shall be taken against such person or property in respect of the offence.

(4) All money received under this section shall be paid to the Comptroller of Accounts who shall place the same to the credit of the general revenue.

 (1) No animal shall be exported or carried coastwise without the written permission of the Chief Game Warden.

(2) Any person who exports or brings any animal to any other place to be shipped for exportation or to be carried coastwise without the written permission of the Chief Game Warden is liable to a fine of two thousand dollars or to imprisonment for six months in addition to any other penalty to which he may be liable under this Act.

19. All provisions of the Customs Ordinance relating to uncustomed and prohibited goods and proceedings for breaches of the law relating thereto, shall apply as fully and effectually to animals prohibited to be exported or carried coastwise under and by virtue of that Ordinance.

20. Subject to section 21 all penalties, compensation and other monies recovered under this Act and all fees received in respect of licences granted or issued under this Act shall be paid to the Comptroller of Accounts who shall place the same to the credit of the general revenue.

21. All offences against this Act shall be punishable on summary conviction before a Magistrate who may direct that any portion not exceeding one-half of the penalty imposed shall be paid and awarded to any person other than a Game Warden or constable who had given information which led to the conviction of the offender, provided that such person be not an accessory.

22. Any person guilty of an offence against this Act for which no penalty is expressly provided is liable to a fine of two hundred dollars. Exportation of animals.

Customs laws to apply to animals Ch. 32 No. 2 (1950 Ed.).

Penalties, fees etc. to be paid to Comptroller of Accounts

Offences punished summarily.

Penalty where no express penalty

Appointment of Game Wardens And Honorary Game Wardens	23. (1) The holders of the offices mentioned in the Sixth Schedule are hereby declared to be Game Wardens for all the purposes of this Act.					
Sixth Schedule	(2) The Minister may from time to time by notice published in the <i>Gazette</i> appoint fit and proper persons to be Honorary Game Wardens for the purpose of assisting in the carrying out of this Act.					
	(3) An Honorary Game Warden shall have all the powers conferred by this Act upon a Game Warden.					
Regulations Second and Third Schedule	 24. (1) The Minister may make regulations- (a) altering and amending the Second or Third Schedule by adding thereto, or removing therefrom, the name of any animal and may apply any such alteration to the whole of Trinidad and Tobago or confine it to any district or other area thereof; (b) prescribing conditions as to the numbers or sex of any animal which may be hunted in lands other than Game Sanctuaries generally or in any such lands in particular; (c) prohibiting or limiting at any time for the whole of Trinidad and Tobago or any part thereof any method employed for hunting any animal which appears to him unduly destructive or improper; (d) prescribing forms and making provisions for the issue of, and fees for, licences under this Act; (e) restricting or imposing conditions for the keeping of any animals in captivity; (f) prohibiting the sale or purchase of the meat of any animal; (g) providing generally for the better carrying out of the objects of this Act; (h) prescribing penalties not exceeding two hundred dollars on summary conviction for the contravention of any regulation. 					
	(2) The Conservation of which Life Regulations (10111111)					

contained in a Schedule to this Act) shall be deemed to be made under subsection (1) and may be amended or revoked under this section.

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(Pages 1-23)

FIRST SCHEDULE

Section 3. [141/1968

GAME SANCTUARIES

- Northern Range Game Sanctuary Portion B-The Boundaries are those of Portion B of the Northern Range Reserve as proclaimed in *Gazette*, Proclamation NO. 8 of 1922 dated 2nd February 1922
- Valencia Game Sanctuary Boundaries-N.-Valencia Road.
 E.-Oropouche River, exclusive of alienated land to the west thereof.
 S.-Quare River, exclusive of alienated lands to the north thereof.
 W.-Oropouche Vega Road, exclusive of alienated lands to the east thereof.
- Central Range Game Sanctuary Boundaries-N.-Boundary of Central Range Reserve from pillar 4A to Cumuto Road.
 E.-Cumuto Road and Brasso-Tamana Road.
 S.-Brasso-Tamana Road.
 W.-Boundary of Central Range Reserve from pillar 4A to Brasso-Tamana Road
- 4. Trinity Hills Game Sanctuary

Boundaries-

N.-Northern boundary of the Moruga Reserve eastwards to the private road of the Trinidad Leaseholds Limited. E.-Trinidad Leaseholds Limited private road from where it enters Moruga Reserve until it reaches the eastern boundary of the Trinity Hills Reserve, thence the Reserve boundary to the sea.

S.-The sea.

W.-The eastern boundary of Cat's Hill Reserve, from the northern boundary of the Moruga Reserve, a line joining the south-eastern corner of the Reserve to the north-western corner of the Trinity Hills Reserve thence the western boundary of the Trinity Hills Reserve and its prolongation to the sea.

LAWS OF TRINIDAD AND TOBAGO

Conservation	of Wild Life	

- Southern Watershed Game Sanctuary Boundaries-N.-The northern boundary of the Southern Watershed Reserve.
 E.-The Morne Diable Road and its continuation to the sea.
 S.-The sea.
 W.-The Quinam Road and its continuation to the sea.
- 6. *Little Tobago Game Sanctuary* The whole island
- 7. Saut d'eau Game Sanctuary, The whole island of Saut d'Eau also called Maravaca, situate near the North Coast of Trinidad.
- 8. Soldado Rock Game Sanctuary in the Serpent's Mouth,
- off

Icacos Point.

9. *Caroni Swamp Game Sanctuary* Boundaries-

N.-By the southern bank of the Blue River from the western bank of No. 2 (North and South) drain to the western bank of No. 4 (North and South) drain. E.-By the western bank of No. 2 (North and South) drain.

S.-By a line demarcated by stakes running from the western bank of No. 4 (North and South) drain to the western bank of No. 2 (North and South) drain. W.-By the western bank of No. 4 (North and South) drain.

- 10. *Kronstadst Island Game Sanctuary* The whole island.
- 11. Morne L'Enfer Game Sanctuary Boundaries-

N.-By the Forest Reserve Main Road.

E.-By Bungalow and No. 20 Road.

S.-By Blue Basin and No. 31 Road.

W.-By New Camp Road.

Bush Bush Wild Life Sanctuary Comprising 3,840 acres of the Nariva Swamp and bounded as follows: All that area of the Nariva Swamp comprising 3,840 acres and bounded as follows:

On the East from a point located 4,000 lks. from the
Conservation of Wild Life

Chap. 67:01

45 m.m. on the Manzanilla Road, on a bearing of approximately 255 degrees (having co-ordinates based on the Cassini Soldner Projection of 305,500 lks. N. and 592,770 E.) thence by a cut and staked line running in a direction of bearing 165 degrees for a distance of $1\frac{1}{2}$ miles.

Thence on the South, by a cut and staked line running in a direction of 255 degrees for a distance of 4 miles;

Thence on the West, by a cut and staked line running in a direction of 345 degrees for a distance of I ½ miles;

Thence on the North, by a cut and staked line running in a direction of 75 degrees for a distance of 4 miles to the point of starting.

SECOND SCHEDULE *

Section 6

Part I

Animals-Alligator or Cayman Lizards Agouti Armadillo (Tattoo) Deer (*in Trinidad only*) Lappe Quenk (Peccary or Wild Hog)

Part II

Birds-Amazona Amazonica Amazonica, Lim or Common Amazon Parrot
Charadriidae-All birds belonging to the Family Charadriidae or Plovers (including Petit Collier, Gros Collier, Pluviers)
Corbeau, Common Town (Coragyps)
Cormorants (Phalacrocorax olivaceus olivaceus and Phalacrocorax auritus)
Cranes, (Ardea heredias and Ardea cocoi)
Ducks, Ouikiki (Dendrocygna autumnalis)

^{*} This Schedule has been amended by the following G.Ns.: 178/1971, 143/1972, 126/1973, 170/1973, 195/1973, 42/1974, 158/1974, 159/1974, 125/1975, 126/1975, 140/1975. 150/1977.

LAWS OF TRINIDAD AND TOBAGO			
Conservation of W	ild Life	Chap. 67:01	(Pages 1-23)
	Ducks, Wi bahamu bahamu Heron, Bla nyctico Heron, Bo Heron, Ye (Nyctar Ibis, Scarl Rallidae-A Rails, W Ramier or Scolopaci or Snipo Pipers, White-w	Id (except Bahama Pintails) (Pc ensis, Anus Bahamensis, Dafila ensis), Muscovy (Cairina mosch ackcrowned Night or Crabier Bat rax) atbilled or Crabier Bec Plat (Cod llowcrowned Night or Crabier a lassa violacea) et-(Flamant or Flamingo) (Guara Il birds belonging to the Family I vaterfowl and their allies) pigeon (all kinds) dae-All birds belonging to the Fa dae es and Sand Pipers (Snipes Cur vings, Yellow-legs, Godwits, Sar	pecilonetta acuta, Dafila nata) tali (<i>Nycticorax</i> chlearius) Croissant a <i>rubra</i>) Rallidae (Coots, amily rlews, Sand nderlings
Regulations 5		PART III	
		CAGE BIRDS	
	Cage birds v Chicki-Chi Cravat (<i>Ta</i> Finch, Yel Parakeet (Picoplat (Semp (<i>Ta</i> Ring Neck Chat or No	vhich may be captured or kept of ong or Bullfinch (<i>Oryzoborous a</i> <i>anagra trinitatis</i>) low-bellied (<i>Ferpus passerinus</i>) Spermophila intermedia) nagra violacea) un (Spermophila bouvronides)	captive by cage <i>ngloensis</i>)

Section 11. 126/1973].

THIRD SCHEDULE

List of animals declared as vermin

- 1. Bats
- 2. Mapipire Balsin or Fer de Lance (*Bofhrops atrox*)
- 3. Mapipire Zanana or Bushmaster (Lanchesis muta)
- 4. Mice
- 5. Mongoose
- 6. Rats
- 7. Snakes, Coral (Micrurus spp.)
- Squirrels
 Yellow-tails (Oslinops decumanus)
- 10. Manicou (*Opossum*)
- 11. Green Parrot
- 12. Cocrico (Ortalis ruficanda ruficanda)

	FO	URTH SCHEDULE		Section 10.
		SPECIAL GAMELI	CENCE	
	The Con	servation of Wild Lif	e Act	
Licence is hereby	y granted to	of	(address)	
(Occupation or p	, to hunt the f profession) (species,	ollowing animals: number and sex)*		
In the	Game Sanctua	ary or(describe	area of State Lands)	
from the	applicable.	to the c	lay of	
			Chief Game Warder	١
	FI	FTH SCHEDULE		Section 2
		Close Season		
	Period: From 1st April to 30th September	Throughou Tobago.	Places: It Trinidad and	
	SI	IXTH SCHEDULE		Section 23
	Assistant Conservators Forest Supervisors Forest Officers Wardens Assistant Wardens	of Forests		

Conservation of Wild Life _____ Chap. 67:01

Ward Officers, as follows:

County of St. George The Principal Ward Officer, Arirna The Ward Officer, San Rafael The Ward Officer, St. Joseph and Tunapuna The Ward Officer, Arouca-Caura The Principal Ward Officer, Blanchisseuse The Ward Officer, Brasso Seco The Ward Officer, San Juan-Santa Cruz The Ward Officer, St. Ann's-Maraval The Ward Officer, Diego Martin-Mucurapo The Ward Officer, Carenage-Chaguararnas

Eastern Counties The Ward Officer, Valencia The Principal Ward Officer, Biche The Ward Officer, Grande Riviere

Counties of Victoria and St. Patrick The Principal Ward Officer, Moruga The Ward Officer, Siparia

Ward of Tobago The Ward Officer, Roxborough Conservation of Wild Life

SUBSIDIARY LEGISLATION

Conservation of Wild Life Regulations

deemed to be made under Section 24

ARRANGEMENT OF REGULATIONS

Regulation

- 1. Citation.
- 2. Form of licence.
- 3. Licence fee.
- 4. Restrictions on capturing birds.
- 5. Prohibition against lights.
- 6. Close season.
- 7. Hunting in Forest Reserve.
- 8. Special authority necessary.
- 9. Protected animals.
- 10. Selling protected animal.
- 11. Powers of Game Warden or Constable.
- 12. Magistrate's power under regulation 11.
- 13. Form of acknowledgment.
- 14. Clipping wings of protected birds.
- 15. Permits for protected birds.

1. These Regulations may be cited as the Conservation of Wild Life Regulations.	Citation.
2. Licences issued under section 6 of the Act shall be in the form set out in the First Schedule to these Regulations and shall be issued by Game Wardens authorised by the Minister for the purpose.	Form of Licence.
3. Subject to section 6 of the Act there shall be paid for each Licence Fee, licence issued the sum of five dollars.	Licence Fee
4. (1) No person shall capture any bird specified in Part III of the Second Schedule to the Act by any means-or method other than by a trap cage, the dimensions of which shall be	Restrictions on capturing birds.

(2) No person shall keep captive any birds specified in Part

not less than one cubic foot for each such captured bird.

Conservation of W	Vild Life	Chap. 67:01	(Pages 1-23)
[Subsidiary]	III of the S minimum foot for ea	<i>Conservation of Wild Life Regul</i> Second Schedule to the Act exce size of which shall be not less th ach such captive bird.	ations pt in a cage the an one cubic
	(3) No substance specified i	o person shall use bird-lime or a e or means for the purpose of ca in Part III of the Second Schedul	ny similar pturing any bird le to the Act.
	(4) Aı or (3) is li hundred o	ny person who contravenes sub able on summary conviction to a dollars.	regulation (I), (2) I fine of two
Hunting lights	5. (1) No purposes	o person shall use any artificial li of hunting.	ights for
	(2) Aı liable on s dollars.	ny person who contravenes subr summary conviction to a fine of t	regulation (1) is wo hundred
Close season			
	6. (1) No purchase, s referred to	o person shall during the close s sell or expose or offer for sale an in the Second Schedule to the A	eason serve, ny animal .ct.
Hunting a Forest	(2) A subregula of two hur	ny person who contravenes the ation (1) is liable on summary conndred dollars.	provisions of nviction to a fine
Keserve	7. (1) N engaged i Schedule to hours of 7.3 morning of	lo person shall hunt or be a men in hunting any animal specified i o the Act in any Forest Reserve I 30 o'clock in the evening and 5 c the next succeeding day.	nber of a party n the Second between the vclock in the
Special authority	(2) A subregula of two hu	ny person who contravenes the ation (I) is liable on summary cor ndred dollars.	provisions of nviction to a fine
necessary	8. (1) Ex granted b no persor Scarlet Ib	xcept in pursuance of an authori by the Chief Game Warden unde n shall hunt more than thirty Wilc bis and five Crabier in any one da	ty specially r this Regulation, I Ducks, five ay.
	(2) A subregula of two hu	ny person who hunts any animal ation (1) is liable on summary co ndred dollars	l contrary to nviction to a fine
	hunting W possessio Crabier w	any party engaged or who has b Vild Ducks, Scarlet Ibis or Crabie on of a quantity of Wild Ducks, S vhich have been	been engaged in er is found in carlet Ibis or

Conservation of	f Wild Life	Chap. 67:01	(Pages 1-23)
[Subsidiary]	Co	onservation of Wild Life Regulat	lions
	hunted and carried by tha be hunted und party is liable hundred dolla	which having regard to the num t party, is in excess of the quan der subregulation (I), every men on summary conviction to a fi rs.	nber of guns tity which may nber of such ne of two Protected animals.
	9. (1) No p captivity he is these Regulat representative under these R committed an only of the fac in captivity by such permit re	person shall keep a protected ar authorised so to do by permit is ions. However, the legal persor of a deceased holder of a valid egulations shall be deemed no offence under these Regulation at that a protected animal which such deceased person under the emains in captivity after the dea	nimal in ssued under nal d permit issued t to have ns b y reason has been kept he authority of th of such
	(2) Any liable on su dollars.	person who contravenes subre mmary conviction to a fine of tw	Selling gulation (1) is protected ro hundred animal.
	10. (1) No p protected au these Regu Chief Game	person shall sell o r otherwise d nimal kept in captivity under the lations without the written perm e Warden.	ispose of any authority of ission of the Powers of Game
	(2) Any liable on sui dollars.	person who contravenes subre mmary conviction to a fine of tw	varden gulation (1) is ro hundred
	11. (1) A Ga protected ar possession Regulations	ame Warden or constable who t nimal in captivity may, if the per it is so found is not authorised u to keep that animal in captivity	finds a son in whose under these -
	(a) require t or to disp these Re within tw Warden captivity; the perio such per the satist that the a Warden the perso have cor	hat person to release the animations of it to a person who holds egulations to keep such animal it o weeks of the date on which sit or constable has so found the a and if he is unable so to dispose d of two weeks, to release it at iod. However, if such person de faction of such Game Warden of animal does not wish to go free or constable may leave it in the on and such person shall be den mitted an offence against these	al immediately a permit under in captivity uch Game unimal in se of it within the end of emonstrates to or constable the Game possession of emed not to se Regulations

Conservation of Wild Life	Chap. 67:01	(Pages 1-23)
	-	-

[Subsidiary]

Conservation of Wild Life Regulations and may be granted a permit under these Regulations to keep the animal in captivity;

Conservation of V	Vild Life	Chap. 67:01	(Pages)	<u>1-23)</u>
	b) make animal (2) Up (1) <i>(b</i>), the person in	Conservation of Wild Life Reg application to a Magistrate to de is wild or domesticated. on the hearing of an application proof that the animal is domesti whose possession the animal w	ulations termine whether the under subregulation icated shall lie on the as found.	[Subsidiary]
Magistrates power under Regulation II	12. If the M constable wild, he n person wi captivity s think fit.	agistrate on application of a Gar under regulation II decides that nay order that it be set flee, or ha ho holds a permit under these R such an animal on such terms as	ne Warden or a particular animal is anded over to a egulations to keep in s the Magistrate may	
acknowledgment	13. Wheney the requise regulation Second S Game Wa possession	ver a protected animal is release sition of a Game Warden or cons in 11 an acknowledgment in the f Schedule to these Regulations sh arden or constable to the person on such animal has been remove	d from captivity on stable acting under orm set out in the nall be given by such from whose ed.	
Clipping wings of protected birds	14. (1) No a protecte any prote escaping	person shall clip or cause to be ed bird or in any way mutilate or cted animal or bird in order to pr from its cage when opened.	clipped the wings of cause to be mutilated event it from	
	(2) An on summ	y person who contravenes subreary conviction to a fine of two hu	egulation (I) is liable Indred dollars.	
Permits for protected birds.	15. Permits be issued form as th	to keep in captivity protected an d by the Chief Game Warden and he Chief Game Warden may det	imals or birds shall d shall be in such ermine	
Regulation 2		FIRST SCHEDULE FORM OF STATE GAME LIC The Conservation of Wild L	CENCE ife Act	
	Licence is h	ereby granted to	of	
	to hunt anin Conservatio This Licenc following the	nals on State Lands subject to th on of Wild Life Act and Regulatic e is not transferable and expires e date of issue.	ne provisions of the ons made thereunder. on 31st December	
	Dated this . Fee payable	day of 19. for Chief Ga e \$	me Warden	

Conservation of Wild Life	chap. 67:01	(Pages 1-2	<u>23)</u>
	Conservation of Wild Life F	Regulations	[Subsidiary]
	SECOND SCHEDU	JLE	Regulation
	The Conservation of Wild	I Life Act	
Serial No. ACKNO	OWLEDGMENT OF RELEASE OF P	ROTECTED ANIMALS	
l, birds	have today rele	eased the following protect	ed animals and
	(here insert number))	
from the custody of	(and species of animals and	d birds)	
,	(Name)	(Address)	
I certify that the animals a	nd birds herein above specified were	e not mutilated in any way.	

Game Warden or Constable

APPENDIX X

Fisheries Act, Chapter 67:51 of the Laws of Trinidad and Tobago 1916

Fisheries

CHAPTER 67:51

FISHERIES ACT

ARRANGEMENT of SECTION

Section

- 1. Short Title.
- 2. Interpretation.
- 3. Application of Act.
- 4. Regulations.
- 5. Duty of Fisheries Officer.
 6. Penalty for breach of regulations.
- 7. Use of poison or explosives.
- 8. Taking fish into prohibited areas.
- 9. Inspection, seizure and forfeiture of nets.
- 10. Offences committed at sea.

An Act to regulate fishing in the waters of Trinidad and Tobago.

[11th December 1916]

1950 Ed. Ch. 25 No. 9. 39 of 1916 Commencement

1. This Act may be cited as the Fisheries Act.	Short title.
 2. In this Act— "fish" includes oysters, crabs, shrimps, turtle, turtle eggs, corals and any species of other marine fauna; "Fisheries Officer" means the person for the time being holding the office of Fisheries Officer and includes any officer of the Fisheries Division of the Ministry of Agriculture; "prohibited area" means an area declared by the Regulations made under section 4 to be a prohibited area. 	Interpretation [39 of 1966]
3. This Act shall extend to all rivers, whether tidal or otherwise, and to the Territorial Sea of Trinidad and Tobago as defined by the Territorial Sea Act.	Application of Act [39 of 1966 23 of 1975]. Ch.1:51.
 4. The Minister may make Regulations— (a) for prescribing the size of mesh, form, and dimensions of nets or appliances for fishing, and for the manner of using the same; 	Regulations Application of Act [39 of 1966 23 of 1975].

Fisheries Regulations

Fisheries	Chap. 67:51 (Pages 1-9)	Fisheries Regula
	 (b) for restricting the size of fish, crabs, that may be taken, and prohibiting the sale of such as are under such size by the Regulations; (c) declaring any area to be a prohibited (d) prohibiting the killing, harpooning, ta catching or any other means of takin or any variety thereof either absolut and within such areas as may be privenase of fish or any variety there at such times and within such areas prescribed. 	, shrimps and turtles he sale or exposing for as may be prescribed d area; aking, removing, ng possession of fish rely or at such times rescribed; osing for sale or the eof either absolutely or a as may be
Duties of Fisheries officers [39 of 1966 23 of 1975].	5. It is the duty of the Fisheries Officer an ised in writing by him so to do, subject to an directions given by the Minister, to carry out Act.	nd any person author- by general or special the provisions of this
Penalty for breach of Regulations	6. (1) A person who contravenes any reg this Act is liable on summary conviction to a dollars and to imprisonment for six months.	ulation made under I fine of two thousand
23 of 1975].	(2) The Magistrate, in his discretion, ma or other appliance used in the commission of forfeited to the State.	ay also order any net of any offence to be
Use of poison or explosives	7. Any person who uses poison of any de explosive with intent to stupefy, poison, take summary conviction to a fine of one thousar imprisonment for three months.	escription or any e or kill fish is liable on nd dollars or to
Taking fish in prohibited areas	8. (1) Except with the written permission person shall take any fish in a prohibited are	of the Minister, no ea.
23 of 1975].	(2) Any person who contravenes subse summary conviction to a fine of two thousar imprisonment for six months.	ection (1) is liable on nd dollars and to
Inspection, seizure and forfeiture of nets. [39 of 1966 23 of 1975].	9. (1) The Fisheries Officer and any persoing by him may inspect and measure any fismay see in any part of Trinidad and Tobago same has been seen in actual use, and may enter into or upon any premises between the o'clock in the morning and five o'clock in the morning net visible for inspecting and measuring the same.	on authorised in writ- shing net which he b, whether or not the y, without warrant, e hours of seven e afternoon in or upon or the purpose of
	(2) If the Fisheries Officer or any person by him is satisfied that the construction of su contravenes the provisions of the law for the in any regulation made under this Act, he m be conveyed to the nearest convenient plac may be measured.	n authorised in writing uch fishing net e time being set forth ay cause such net to se where the same

Fisheries

Chap. 67:51 (Pages 1-9)

Fisheries Regulations

(3) If on inspection or measurement it is found that the construction of such net contravenes the law as aforesaid, it shall be seized and taken before a Magistrate, who, upon being satisfied of such contravention, shall declare the same to be forfeited; and the Magistrate may declare and order such forfeiture notwithstanding that no person has been charged in relation to or in connection with such net with having committed an offence against any regulation made under this Act.

(4) Where a net has been seized under this section, and no person at the time of the seizure is found in possession of the same, the order for its forfeiture shall not be declared by the Magistrate until the expiration of one month after its seizure, or until, before the expiration of such month, the owner or other person entitled to the possession of the net comes forward to claim the same and has been given an opportunity of showing cause why it should not be forfeited.

(5) The Magistrate shall cause every fishing net forfeited as aforesaid to be delivered to the Police for the purpose of being destroyed, and the police officer in charge of the Police Station where any such fishing net is delivered shall forthwith destroy the same.

10. Any offence against this Act committed at sea is deemed to have been committed on the coast adjoining the sea, or to have been committed in any place where the offender is found, and may be tried and punished accordingly. Offences committed at sea FisheriesChap. 67:51 (Pages 1-9)Fisheries Regulations

	SUBSIDIARY LEGISLATION			
G. 25.2.1926	FISHERIES REGULATIONS			
13.3.1950	Made under section 4			
Citation	 These Regulations may be cited as the Fisheries Regulations. 			
Nets	 2. (1) The nets to be employed in the territorial waters of Trinidad and Tobago shall be the following and no others: a. Drift or Fillet Nets for catching Mackerel, King Fish and other large fishes Length of net not to exceed nine hundred feet. Width at centre not to exceed fifteen feet. Mesh not to be less than one and three-quarter inches square. 			
	b. Fillet Nets for catching Mullets Length not to exceed nine hundred feet. Width at centre not to exceed twelve feet. Mesh not to be less than one and one- quarter inches square.			
	c. Pocket Seines for catching mixed white fish Length not to exceed nine hundred feet. Width of pocket not to exceed fifteen feet, tapering to two feet. Mesh in the pocket not less than three-quarter inch square at end of pocket.			
	d. Pocket Seines for catching Prawns Length not to exceed one hundred and twenty feet. Width not to exceed twelve feet. Mesh not to be less than half an inch square.			
	e. Seines for catching bait Length not to exceed one hundred and twenty feet. Width not to exceed nine feet. Mesh not to be less than half an inch square.			
	f. Cast Nets for catching Bait Length not to exceed six feet. Mesh not to be less than half an inch square.			
	 g. Gar Seines for catching fish other than Cavalli or Jack fish Length not to exceed five hundred and forty feet. Width not to exceed twelve feet at centre. Mesh not to be less than half an inch square. 			

h.	Seines for catching Cavalli Length not to exceed seven hundred and fifty feet. Width not to exceed thirty-six feet in centre. Mesh not to be less than one and seven-eighth inches square.	[Subsidiary]
i.	Seines for catching Jack fish Length not to exceed six hundred feet. Width not to exceed twenty-four feet at centre . Mesh to be not less than half an inch square.	
j.	Seines known as Italian SeinesLength not to exceed nine hundred feet. Mesh to be not less than half an inch square.	
(2) that spe	The use of any such net for a purpose other than ecified in subregulation (1) shall be unlawful.	
(3) fish whi been ur	The onus of proving that a net in which are found ch it is unlawful t o t a k e in any such net has not nlawfully used shall be on the person using the same	
3. No kinds:	fish less than twelve inches in length of the following	Fish less than eight inches
expose	King fish, Spanish mackerel, Grouper, Codfish, Sorb, Pargue and Zeblan, shall be taken or sold or d for sale.	
4. No	fish less than eight inches in length of. the following	Fish loss than
KITUS.	Cola, Red fish (Vivanot, Walliacke, Tete-ronde and Pomfano), and Salmon, shall be ken or sold or exposed for sale.	twelve inches
5. No for the p	Sardine shall be sold except to a <i>bona fide</i> fisherman purpose of bait.	Sardine
6. (1) within th the Car from the Diego N	No fish, Shell-fish, Crabs or Shrimps shall be taken ne area lying between a line drawn from the mouth of oni River to a buoy fixed one thousand feet seaward e sewerage outfall and thence to the mouth of the Martin River, and the shore.	Prohibition
(2) Shrimps and the the said from low	No fish or Shell-fish (including Oysters, Crabs and s) shall be taken anywhere between Claxton's Bay mouth of the Cipero River or from the sea between b places for a distance of one half of a mile seawards w water-mark.	

Fisheries	Chap. 67:51 (Pages 1-9)	Fisheries Regulations						
[Subsidary]								
Dragging a net or seine.	7. Every. person dragging a net or seine other than those specified in regulation $2(I)(d)$ and (e) shall remove all fish from such net or seine in water not less than three feet in depth.							
G. 5.12.1929.	OYSTERS FROM ORTOIRE RIVER REG	ULATIONS						
	Made under section 4							
Citation.	1. These Regulations may be cited as the Oysters from Ortoire River Regulations.							
Prohibition.	 No person shall take oysters from the Ortoire River between the Mafeking Road public ferry and the sea from 1st July to 31st December in each year. 							
119/1975	PROTECTION OF TURTLE AND TURTL REGULATIONS	LE EGGS						
	Made under section 4							
Citation.	 These Regulations may be cited as the Protection of Turtle and Turtle Eggs Regulations. 							
Prohibition against taking possession of female turtle or removing or selling turtle eggs.	 2. No person shall- a. kill, harpoon, catch or otherwise take of any female turtle which is in the sereef or within one thousand yards frowater mark of the foreshore where the reef; b. take or remove or cause to be taken any turtle eggs after they have been 	e possession ea within any om the high here is no or removed laid and						
	buried by a female turtle or after they buried by any person;	y have been						
	to be sold or offered or expose for sa possession of any turtle eggs.	sale or be in						

Chap. 67:51 (Pages 1-9)

3. No person shall between 1st March and 30th killi September, kill, harpoon catch or otherwise take har possession of or purchase, sell, offer or expose for sale or cause to be sold or offered or exposed for sale any turtle or turtle meat.

Restriction on killing, harpooning and selling turtle

APPENDIX XI

Wildlife Section, Forestry Division (1985). Draft Proposal for the Declaration of Fishing Pond and Matura Beach as Prohibited Areas

DRAFT

Declaration of Matura and Fishing Pond Beaches as Prohibited Areas under the Forest Act

BACKGROUND

A decision was taken at the Wildlife Conservation Committee Meeting held on May 24, 1985 to make recommendations to the Ministry of Agriculture, Lands and Food Production to have Matura and Fishing Pond Beaches declared as prohibited areas during the nesting season of the leatherback turtles. The Minister has the power to declare specified areas (Forest Reserves and/or State Lands) as prohibited areas under Section 2 of the Forests Act, Chapter 66:01.

Marine turtles nest along several beaches of Trinidad (Map I). Matura and Fishing Pond Beaches (12 and 13 on Map I) are two areas where leatherback turtles nest in significant but where they also encounter numerous difficulties. Beaches along the Blanchisseuse to Matelot coast (1 - 7 on Map I) also contain large numbers of nesting leatherbacks, but due to the relative inaccessibility of these areas, some degree of natural protection is afforded. Beach characteristics at these aforementioned areas are highly conducive to leatherback turtle nesting.

The leatherback turtle, *Demochelys coriacea* is the most important species of marine turtle found 1n Trinidad. It is listed as endangered by the United States Fish and Wildlife Service and by the International Union for the Conservation of Nature and Natural Resources and as an Appendix I (protected) species under the Convention on International Trade in Endangered Species of Flora and Fauna.

JUSTIFICATION

Despite its endangered status, people slaughter leatherback turtles and are continuing to do so at an alarming rate. This is especially prevalent at Matura and Fishing Pond Beaches. It is felt that almost twenty to thirty percent (20-30%) of the nesting leatherback population in Trinidad is killed each year. Data collected in 1984 showed that 29% the nesting population was slaughtered. To date, a total of forty-five (45) carcasses have been counted for the 1985 nesting season. In reality this number might be three times higher since carcasses are dumped far out to sea, buried deep or carried away.

The people who slaughter turtles and/or dig up their eggs go to the beaches under the pretext of going to fish. However, they set up their fishing lines as a sham, but in reality wait for the unsuspecting turtles to come ashore. It is not unusual to come across these so-called fishermen loaded with large plastic bags and cutlasses. As soon as they notice any authorized persons they either pack up and leave or pretend that they are fishing.

Wardens have confiscated knives and plastic when they suspected hunting was the main motive. However, they have been challenged and told that they cannot prevent people from fishing. If Mature and Fishing Pond Beaches were to be declared as prohibited areas for which special entry permits would be required this practice of hunting under the pretext of fishing would be eliminated completely as any unauthorized persons found in these areas would be liable to prosecution. Other unfavourable practices which affect the nesting habitat such as sand mining and destruction of the shoreline will also be prevented as a result of this action.

Leatherback turtles are part of the natural heritage of our country and have a great tourist appeal. During the nesting season, it is not unusual to see as many as two hundred (200) people viewing nesting leatherbacks on a particularly good moonlit night. Although this interest in turtles is encouraging, uncontrolled visits to these beaches during nesting could also have serious negative effects on the nesting process. It is imperative therefore that these turtles should be allowed to nest with the minimum of disturbance.

Map II of Matura and Fishing Pond areas (12 and 13 respectively) show that these two areas are fairly inaccessible, a factor which should make monitoring by the Forestry Division relatively easy. At a there are two points of vehicular entry and at Fishing Pond there is a natural barrier in the form of a wetland swamp (North Orupuche). The area bordering these two beaches is also part of the Manzanilla Windbelt Reserve.

CONCLUSION

If Matura and Fishing Pond Beaches are designated prohibited areas, there are numerous potential benefits which can be derived. First and foremost we will be safeguarding a unique species, namely the leatherback turtle. As a result of this action, revenue could be generated from the development of this resource as a tourist attraction and rational harvesting for its meat. At present, leatherback meat is illegally sold between \$6.00 to \$14.00 per lb and vendors at El Socorro are enjoying a thriving trade in turtle meat roti which they pass as beef roti.

There is no doubt whatsoever that urgent action is needed to have Matura and Fishing Pond Beaches declared as prohibited areas. Nesting leatherbacks present a unique spectacle and people who are fortunate to witness this phenomenon never forget the experience.

REFERENCES

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APPENDIX XII

Various newspaper articles

EXPRESS Monday June 11, 1984 Page 43

Βιά το στορ slaughter of

CONSERVATION ISTS have renewed a call for the Matura beach to be declared a wildlife sanctuary af ter it was disclosed that about 16 leather-back turtles had been sinughtered by poach-ers since the nesting senson started last March. Carol James, a zoolog-ist and head of the wild life section of the wildlife ministry of Agriculture, Lands and Food Produc-tion, confirmed the count while on a turtle patrol at Matura beach

late Friday night. Also on the turtle parton were zoologist Nadra Nathai-Cyan, forester Roopnarine Singh and 11 other officers of the ministry's wildlife sec-tion. The wildlife section in two groups twice basis. The officials walk the beach with the aim of discouraging poaching on the leatherbacks' hab-rond section of the beach on carcasses have been found on the beach on carcasses have been found on the beach on the leatherbacks' hab-rond section of the beach on the leatherback of the stepped up patrol by the suble section of the beach was secluded, it was ideal for the illegal slaughtering of the ani-mals. However, the wildlife

Baughtering of the ani-mais. However, the wildlife section had reportedly secured the services of a full-time watchman to patrol the area. The leatherback tur-tles (dermochelys copia-coa) has been offically declared and endangered species worldwide. The ministry had accepted the findings of interna-tional conservation orga-nisations and declared the turtles a protected animal. The wildlife section has been monitoring the turtles on the beach since March but due to limited manpower it can-not mount a full-time patrol. Last Friday, a group of biology students from lower Form 6 at St Mary's College in Port of Spain were on the beach taking mensurements and observing the tur-tles. While the widdlife sec-

tles. While the widlife sec-While the widlife sec-tion welcomes the volun-tary patrol by young conservationista, it ad-vises these eager turtle-watchers not to use too much light when the tur-tle comes ashore. It was pointed out that the bright lights fo-cussed on the animals often disriented them and they eventually lose direction. It was pointed out that sometimes the tur-tles go back to sea with-out depositing their eggs.

Leatherback turtles need your help to survive conservationist

By HARRY PARTAP EXPRESS San Fernando Desk

THE TURTLE patrol THE TURTLE patrol mounted by volunteers from the few conserva-tionist groups in Trin-idad and Tobago is indeed a labour of love spawned by a love for the cantry and a strong desire to preserve the fast declining numbers of the leatherback turtles who nest every year on the leatherback turties who nest every year on our east and north

coasts. The Wildlife Section of the Ministry of Agri-culture. Lands and Foxd Production this year be-gan a twice-weekly pa-trul of the leatherbacks? not the reatherbacks nesting grounds at the Matura and Fishing Pond beaches. Their reg-ular participation is greatly welcomed by oth-er naturalists and conas the Trinidad Field Naturalist Club and the Wider Caribbean Sea Wider Caribbean Sea Turtle Network (VCSTN), whose local representative is Molly Gaskin. Patrol leaders collect data on the tur-tles and submit it to the University of Georgia, head quarters for WCSTN, where it is col-lated with information from other leatherback turtle patrols around the world.

world. The leatherbacks use The leatherbacks use the dark of the night to crawl ashore to lay their eggs. It is during this time that the leather-backers who batter the animals without thought about whichter the specie survive another genera-tion or not. It is precise-tion or not. It is precise-tion or not. It is endan-gered specie that the pagered specie that the pa-trols were instituted.

Trols were instituted. It is estimated that if the indiscriminate slaughter of the animals continued mankind would have lost this spe-cire of turtles in a few years. Last week I ac-companied a group of others from the Wildlife Section combrising zoo-Section comprising zoo-logists, foresters, games wardens and interested boilds, foresters, games wardens and interested persons on a patrol of the Matura Beach off the Tooo Road. In the party were head of the wild life section Dr Carol James, zoologist Nadira Nathai-Gyan. foresters Roopnarine Singh and Coartney Parks, forest rangers Leo Lendors. David Boodoo and A. Oliver, game warden G Thompson and conserva-tionists Clifford Gyan and Höyzer-old Jetome Partap, a student of Na-parina College. While staking out the waterabeach during a seven-hour period that extended into the wee boars of Saturday morn-ing, it became painfully

back into the water and disappeared in the surf without laying any eggs. The human interference, explained Dr James, had denied the turtles the chance to deposit their eggs and possibly pre-vented a generation of turtles from being hatched. > Dr James noted that if the turtles returned the eggs may not hatch because the fertility peri-od would have expired. She explained that young would be conser-vationists should be aware of this and refrain from focus-ing bright up to nest. This takes a great deal of discipline, since it may take as long as an k. *x* for the female to eco-mahor she at a sing to exit. This takes a great deal of discipline, since it may take as long as an k. *x* for the female to eco-mahor, select a with a shot of sand and dig its nest. Watchers need 'wait silently, in the dask, and not to crowd in a small circle around the digging ani-mal, or she is disoriented and frustrated from the task she waited three-years and swam thou-complish. Lights or human ac-tivity around the turtles one they in the process of laying do not disturb them. This is the time when viewers can draw near, watch and count the eggs being haid, mea-sure and tag the turtle or laying do not disturb them. This is the time when viewers can draw near, watch and count the eggs being haid, mea-sure and tag the turtle or laying do not disturb them. This is the time when viewers can draw near, watch and count the eggs being haid, mea-sure and tag the turtle or basing haid, mea-tivity around the turtles one they in the formle when viewers can draw near, watch and count the eggs being haid, mea-sure and tag the form the when viewers can draw hear in the form the turtle have a will not move Dr Jannes the turtle or the set will not move Dr Jannes the turtle

move, or sames pointed out in an information booklet issued by the Wildlife Section last year that "this makes the creature extremely vul-necesitates action by concerned individuals to oreven this annual traprevent this annual traredy

But some people go to these nesting grounds at

Mathura, Salibia, Mada-mas, Paria and Blanchis-scuse under the pretext of turtle patrols and find themselves betraying this trust. There was a clear example last Friday inght when Forest Rang er Lendore intercepted a young woman in a patrol

er Lendore intercepted a young woman in a patrol group attempting to tak-away a young turthe which had just hatched and was finding its way to the ocean. Under the pretext that she was taking the helpless creature to the helpless creature to the institute of Marine Af-fairs for medical atten-tion she almost got away with it. But Lendore was alert and demanded some form of official identification. The woman astrendered the crea-ture and it was placed in the ocean.

an source of the second second second. During the patrol Lendore, Nathin-Gyan and Boodon spoke with people on the beach ex-plaining facts about the leatherbacks. The trio buttomholed any group of two or more turtle-watchers giving them do's and don'ts about the leatherbacks. Some peo-ple found the exercise useful while others ar-gued and refused to take matice of the advice, like the couple who kept clicking the cameras sending out blinding flashes that disoriented

clicking the cameras sending out blinding flashes that disoriented the creatures. When one considers that out of the 100-odd leatherback only about the or 10 hatchlings ever survive to adulthood, the pressure for survival of the specie becomes acute. Apart from the matural predators of sharks and birds, man has become a savage to these helpless creatures. Dr James wrote, "dis-regard for the life of these creatures has been so great that some fish-ermen do not consider it an immoral act to hack off a flipper for use as bait to catch sharks and leave the remainder of the carcas to rot." Dr James pointed out in her article that "it had been found that swill also attract sharks, so that a partially dam-aged turtle or even

will also attract sharks, so that a partially dam-aged turtle or even blooksoaked sand maybe used as lures for sharks". Dr James' account dramatised the savagery of pouchers who roam the cast coast beaches in search of leatherbacks. One cannuot yet under-stand how a human be-ing could look at these magnificent creatures in a state of helplessness and batter them to oleath. It is a heartless exercise which must be condemned not only because of its cnelty but because of the danger of losing the specie allo-gether."

Travelling with the Wildlife Section patrol team, one senses a great deal of zeal from the eight officials who were using the time and losing

eight officials who were using the time and losing their sleep to protect the turtles. The partol vol-unteers walk the beach from 7.p.m. Friday night to 2 am. Saturday izel-to 2 am. Saturday izel-volutions in the soft isenerary of the leatherback and their total population. Said one of the offi-cers while plotding through the soft sand at Mathura. "working at the Wildlife sections had made me so conscious of conservation that I can-that being isonghered. This love for animals and the idea that some of them face extinction pushes me to join the patrol tam every oppor-tunity I get. The fact that some of usid in not reach home until 5 o'clock Saturday morn-ing should lead poachers

ing should lead poachers to swear ar ath never to slaught the leather-backs cain." While the turcle pa-trobs had significantly re-duced the slaugher -outly 15 so far this year as compared with 25 during the same period last year - it is not the answer to the problem. The solution lies in edu-answer to the problem. The solution lies in edu-cating the population to the fact that these leath-erbacks face estinction and need protection if we in future years, and our children, are to know a Trinishad and Tobago with wonderful creatures whould embark on a com-prohensive public educa-tion programme designed to tell people the facts about conservation. The Wildlife Section

The Wildlife Section needs to use the radio, television, press and public lectures to spread the message, and the ed-ucation programme public lectures to spread the message, and the ed-ucation programme should be taken to the schools. Gaskin, assisted by Carlin Shepherl, is the only regular volum-teer for conservation ed-ucation. They spend several hours each work driving to schools all over Trinited and Tohy-not owhich they have been invited, speaking on conservation of the native animals and plants and the impor-tance of not pelluting and not littering Gas-kin, who also is Girl Guides Commissioner and founder-manager of the Pointe-a-Pierre Wildlife Trust, conducts

active conservationist and beautification pro-grammes, such as an is-land-wide tree-planting still under way, with the Girl Guides and Boy Scouts.

The naturalist and conservationist clubs as well as the Trinidad Hunters group and the South Trinidad Hunters Group must get involved in educating people on endangered species and conservation in general. But the funal responsibil-ity lies with each eitizen. It is we who must pre-serve our heritage; peo-ple of other nations will not do it for us. The eatherhacks are part of, the Trinidad and Tohago national heritage — we must each one of us pro-tect them.

Commentary Who will protect the leatherback?

By KATHLYN RUSSELL

T'S THE time of year when a miracle of nature happens on some Trinidad beaches, particularly Matura, Salybia, Madamas, Paria and Blanchisseuse, every night —the gigantic female leatherback turtle comes ashore to lay her eggs in the sand.

It is an amazing ritual to witness, as increasing numbers of persons are discovering. The giant creature emerges from the surf, visible only as a slowly moving dark hump at first, because any sight or sound of human beings or other moving creatures will cause her to turn around immediately atd return to the waves.

She lumbers up to the beach, using her huge flippers to propel her body which may be 150 centimetres long or more and weigh 400 kilograms. She makes slow progress, indeed, especially compared to the agility with which she can suddenly disappear into the waves, but finally selects a friendly stfetch of sand above the tide mark and begins painstakingly, using her rear flippers as efficient tools which can spray the unwary onlooker with sand from several feet away, to scoop an enormous hourglass-shaped nest.

Onlooker with sand none several feet away, to scoop an enormous hourglass-shaped nest. Until she is satisfied with her children's domicile, the female leatherback is cautious and wary; she will retreat to safety if disturbed. But as soon as she has settled herself over the nest and begun the process of filling the lower section of the hourglass with up to 100 golf ball-sized eggs of sticky white jelly, she goes into a sort of trance and will allow herself to be measured, tagged, photographed with flash bulbs, stared at with the light of bright electric flashlights, shouted at, robbed of eggs and even maimed or butch-

Presuming that the latter two crimes are not committed, she will use her flippers again to refill the nest with sand and pack it down tight. Then comes an elaborate sand dance in which the turtle drags her body in circles around and away from the top of the nest," finally leaving marks which camouflage the actual location. Satisfied with the safety of her eggs, she finally makes her way back to the water, leaving "tire tracks" in the sand.

Turtle watchers spend up to half a night walking the beach, watching for the figures emerging from the surf, sitting still for up to an hour during the nest-building process, then drawing near to watch the actual laying. These days there are increasing numbers of people on the beaches who are interested in helping to preserve the turtles: those who are accompanied by turtle patrols from the Division of Forestry, Pointe-a-Pierre Wildlife Trust, Institute of 'Marine Affairs, Trinidad and Tobago Field Naturalists Club and other game wardens.

Even such groups may do harm by their very enthusiasm; making too much of a racket; forming a circle around the nesting site which can so disturb the turtle that she may make tracks wildly for hours without digging; shining so many bright lights on the beach or on the waves that she may be deterred from coming ashore; and — worst of all —being unable to resist taking an egg or two as a souvenir.

But this is little or nothing compared to the havoc wreaked by the poachers; people who, for decades now, have developed a taste for turtle meat, believe that the flippers are an aphrodisiac, dig up the eggs, or even hack off a flipper to use as bait for sharks (the blood of any creature in the water will attract sharks, and divers or swimmers carrying bloody bait or freshly killed fish invite shark attack, then hunt the sharks as harmful to man).

Wholesale slaughter of turtles in many parts of the Caribbean and the world over for many years has so lessened the total population as to make the species highlyendangered. The animals are protected by law in Trinidad and Tohago, and any game warden, full-time or civilian, is authorised to stop poaching or harassment of the creatures or the eggs (only five to 10 which survive natural predators to attain adulthood). Since most of the huge carcass is inedible, it is truly wanton destruction to kill the creatures, but wardens have already come upon many carcasses on the beaches this year.

This year in Trinidad there is a new development which threatens the turlles by threatening to drive away their human protectors. One recent weekend at Matura Beach, the most popular for turlle watchers, there was an unusually large number of cars parked because several large groups had accompanied the patrols.

At about midnight, people emerged from the beach to go home, only to find that vandals had been at their cars. One car had been bereft of all four wheels; two others had their rear windshields smashed (there was nothing inside to steal); one glove compartment had been raided and documents stolen as well as money; sterens were gone, and in many/ cases the door locks had been tampered with and broken.

It was a case of strangers helping each other — especially the car with the missing wheels, which finally limped home on four different borrowed spares after a great search in the ditches where bolts had been tossed aside —but the inconvenience, the frustration, the anger, the weariness and the expense caused by the vandals who, after all, gained very little, was enough to discourage a great many people from giving up most of a night's sleep and driving many miles to observe a natural miracle.

The area police seemed unable to tackle the problem of finding the culprits; in fact, their casualsounding question was whether anyone had been murdered!

This, from the men sworn "to protect and serve", is a degree of cynicism which in itself is contributory to a totally lawless society. Laws are useless if nobody is willing to enforce them or even to assume the moral rights of the victims.

APPENDIX XIII

Workshop gives environmental education a boost

By ELENA ARAUJO

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guaramas Netural Park and Marcas National Park. Freed was delighted to have witnessed two leatherback turtles laying their eggs on Matura Beach. "I have been doing the same type of work in ocean and beach areas in the region, but I saw only carcases or tracks where turtles had already returned to the sea. This was the first time I actually saw the

sea turtle lay her egg." The ultimate aim of the three experts is to make ecological and en-vironmental concepts a part of the school curric-ulum in the hope that when the young people are leaders, they can lead the young people are leaders, they can lead the country in conserva-tion and demonstrate a balanced and wise use of their resources. The Environmental Express is a step in this direction.

EXPRESS Tuesday July 30 1985 Page 17



Who me! No sir! I going some way else.

(R ť a CA 2 5. x

Hurry Mary, run for your life.

which went on the road in 1983, is a brightly painted forest scene. In-side, the bus features nature displays, seating accommodation for 20 people, and audio and visual teaching appara-

visual teaching appara-tus. Officials from the For-estry Division take atu-denta on nature field trips, and use innovative devices, such as puppet shows and stuffed ani-mals, in their lessons on the environment. So far, over 100 schools have been visited, and their are plans to take it to shopping malls and fac-tories.

"I have found their ideas for interpretation wonderfully creative." and Freed, who demon-strated his own methods of presenting nature in the classroom. "I think their commitment to the environment is marvel-lous."

The participants, will represented the Forestry Division, primary and secondary achool teach-ers, Fointe-a-Pierre Wildfowl Trust, Min-istries of Education and of Sport, Culture and Youth Affaina, and the Naturalist Magazine, came away from the workshop with an up-to-date list of sources of information on environ-mental interpretation (both local and foreign), a diploma testifying to their ability to commu-nicate their natural and new ideas on graphic cultural heritage, and new ideas on graphic techniques, including slide shows and nature samples. During the course of the workshops the par-ticipants made field trips to Caroni Natural Park, Cleaver Woods Recre-vation Reserve. The groups prepared 'teacher packets' (containing classroom material, pre-lessnop material, pre-lessnop material, pre-lessnop material, pre-lessnop material, pre-lessnop reparations, and storharks and tures In fact, the workshops were an extension of the Environmental Express programme. Robyn Cross, Forestry Depart-ment ecologist, ex-plained: "The Express is a feature of the national parks project. From its inception in 1983, we placed training of staff or our list of priorities." The idea of sending out a few specialists to train large groups in their own country is a new one. The OAS tought it better to train a fairly wide group of techors, principals and officials involved in the evironment, rather officients from the Forest of Division to partici-

CARPONS on leutherback turtles

Leatherback at the mercy of murderers



THE EDITOR: Let us horrife sight of the most income type of pictures of microparticle and the set of the set

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EXPRESS 4.5.87

Possession of turtle meat: **FISHERMAN JAILED** FOR THREE MONTHS

SENIOR Magistrate Mahabir Sar-wan last week jailed a Bacolet fisherman for three months for illegal possession of some 15 pounds of turtle meat.

And he warned that he will send to prison anyone found guilty of violating the wildlife laws of the country, parti-cularly the slaughter and destruction of turtles.

Jailed was 20-year-old Wayne Smith who admitted three previous convictions, but none for a similar offence.

"The plunder and destruction of the country's wildlife must be stopped." declared Sarwan. In the Magistrate said at this particu-lar time when turtles were coming ashore on beaches of the country to lay their eggs, everything must be done to protect and preserve the species. Smith was held by Cpl Forbes on Sangster Hill, Scarborough, with a beg containing the turtle meat. He said then he was taking it for a friend. Sentening him, Sarwan disclosed that the maximum penalty was six months imprisonment or \$2,000 fine.

Page 10 EXPRESS Thursday, May 28, 1987

Leatherbacks need privacy

THE EDITOR: I have written this letter on be-half of some friends and yself concerning the viewing of the Leather back turtle during its present egg. laying sea son. I will give an exam-ple of the reaction of some people, which I witnessed together with others at a "private" beach in Matura on Sa-turday May 16 into Sun-day morning. To my knowledge THE EDITOR: I have written this letter on be-half of some friends and myself concerning the viewing of the Leather-back turtle during its present erg-laying isa-son. I will give an exam-ple of the reaction of some people, which I witnessed together with others at a "private" beach in Mature on Sa-

BURYERS. Imps switched on full beem, cluatered around the pitful creature. In its claustrophic state the turtle resorted to digring its nest in the wet sand, which was pe-riodically filled up with water by the nearby wave. Realising its fail-ture it returned to the state the turtle resorted to filled up with water by the nearby wave. Realising its fail-to diffuence of the group has-tened to get a touch of its before it got there. Although I am no ex-fittle common sense alone is needed for one to realise that any ani-mult atek. In hope the govern-ment agency responsible for wildlike conservation will take more interest, either by iasuing guards to accompany interested parties or restricting vevent. *ALAN D'ANDRADES*

ALAN D'ANDRADE JR, Tacarigua

APPENDIX XIII

Wildlife Section, Forestry Division

Turtle Data Sheet

Name: Location: Date:

Weather:				ſ	Moon:		Tide:		
Time & Date Observed	No.To Laid	urtles Did Not Lay	Seen Carca- sses	Length	Width	Physical Condition of Turtles	Condition of Nesting Area (Clear, littered, wide)	Human Influence No. of Activity People	Other

APPENDIX XIV

Wildlife Section, Forestry Division (1987). Marine Turtle Management at Fishing Pond with Specific Reference to the Leatherback Turtle Data Sheet

Marine Turtle Management at Fishing Pond with Specific Reference to the Leatherback Turtle *Dermochelys coriscea*

1.0. INTRODUCTION

The leatherback turtle *Demochelys coriacee* is a migratory species of marine turtle which nests on the north coast and northeast coast beaches of Trinidad during the months of March to September. Fishing Pond and Matura beaches are two of the major nesting grounds which are accessible to the general public and during the peak months of May-June at least (10) ten leatherback turtles can be observed nesting in one night per beach.

The ready accessibility of these two beaches results in numerous slaughters, especially at Fishing Pond. Forestry Division patrols at Matura is confined to weekdays since on weekends the area is visited by people who go to view the nesting leatherback, and this affords some measure of protection from poachers. At Fishing Pond the situation is different since the area is very isolated and relatively inaccessible and would-be poachers bide their time, waiting as long as necessary for the departure of Forestry staff to slaughter turtles. The poachers are determined to obtain turtle meat, a venture which is highly profitable for them. This meat is sold to roti-shops and is then cooked and sold to the unsuspecting public as beef-roti. Eggs are also taken since the Trinidadian male believes that they have aphrodisiacal qualities.

Protection is afforded to the nesting leatherback turtles under the Conservation of Wildlife Act, Chapter 67:01 of the Laws of Trinidad and Tobago. In this Act, the leatherback turtle is a protected animal and therefore cannot be hunted at any time.

2.0. PATROLS

The Wildlife Section, Forestry Division in an effort to afford protection to the nesting leatherback turtles, their eggs and the hatchlings have been conducting bi-weekly patrols at Fishing Pond and Matura since 1983. One patrol is staffed by Game Wardens and Forest Rangers (4) stationed in the north and the other by Foresters, Forest Rangers and Graduate Trainees (6) from the research staff. Sporadic assistance is received from other Forestry Officers and members of the public.

These patrols (especially by the research staff) are inadequately armed and it is generally hoped that the mere presence of Forest Officers would deter would-be poachers. In return for their dedication, officers have been subjected to ridicule, obscene language and even threatened with cutlasses. On April 28, 1987 while on a turtle patrol at Fishing Pond, an encounter with some poachers who were determined to kill a turtle (s) that night nearly became "out-of-hand". Since then, Officers have been extremely cautious about returning to Fishing Pond at night unless accompanied by armed personnel. It is important to note that the poachers' taunt of "there is only one way in and one way out" is all too true.

For the year 1987, despite conducting at least two patrols per week since March, a total of sixteen (16) leatherback carcasses have been discovered at Fishing Pond. This number is not a true indication of the actual killings that took place since some are dumped far out at sea, some are buried deep and others are carted away. It is certain that this wonton slaughter will continue unless adequate patrols can be deployed at Fishing Pond every night from around 8:00 pm to 5:00 am. It is indeed frightening for unarmed Forestry Division staff to meet determined poachers armed with their "tools of the trade": shining cutlasses, sharp knives, plastic bags and buckets (for the eggs) who have absolute disregard for the future of this endangered species.

3.0. EDUCATION AND PUBLICITY

Education is the key to understanding, and promotion of greater public awareness of the plight of the leatherback turtles is essential for the survival of this species.

3.1. Media

Since 1983, various articles, posters and simple cartoons all carrying an appeal to stop the slaughter of leatherback turtles have been prepared for media publicity. The Forestry Division, however, has managed to get only limited publication of these in the printed media.

For this year, the Forestry Division's artist prepared a number of cartoons which carry highly effective messages for publication in the printed media, but to date not a single one has been published in the newspapers.

3.2. Public Education

Numerous requests are received from members of the public, students, (ECIAF, UWI), organizations (IMA, CADP), etc. to accompany Forestry Division on their regular patrols. The opportunity is taken during such trips to educate people on the spot about the need for the conservation of marine turtles, especially the leatherbacks. Since 1983, hundreds of nationals have been sensitised about the need to protect nesting turtles.

4.0. RECOMMENDATIONS

4.1 Patrols

Patrols need to be upgraded using adequate number of armed personnel in critical areas, especially Fishing Pond. Assistance is needed from the Trinidad and Tobago Regiment, the Police Service and the Coast Guard, to supplement the efforts Wildlife Section staff.

4.2 Restrictions

Declaration of Fishing Pond and Mature Beaches as Prohibited areas during the nesting season should be given priority consideration. Entry by people into the area would be strictly by permits only, making enforcement easier.

4.3. Education

Favourable consideration is needed from the media to promote a greater public awareness. The Wildlife Section, Forestry Division has numerous articles, posters, cartoons, etc. which are already prepared for publicity.

Submitted by:

Nadra-Nathai Gyan, 4-05-87.

APPENDIX XV

James, C. (1983). Highlighting Wildlife, Basic Information on Wildlife Conservation in Trinidad and Tobago.

> The Leatherback Turtle. Pp 41-44

The Leatherback Turtle

The leatherback turtle, or Caldon, (*Dermochelys coriacea*) is a migratory species of sea turtle which visits the beaches of Trinidad during the months of March to September to build nests and to lay eggs. Although the majority of turtles nest in Trinidad between April and late June, some may be found on beaches as late as September.

Only female turtles come up on the beaches in Trinidad to lay eggs and, after depositing up to one hundred (100) eggs on repeated visits during season, the female leatherback returns to the ocean until the cycle is repeated in March of the following year. Eggs hatch in sixty to eighty (60-80) days and young hatchlings make their way to sea where their life cycle begins. Many of the young turtles do not survive the rigours of this early life as they are easy prey to shore birds and sharks. Only about five to ten (5-10) of the annual brood of one hundred (100) eggs may survive to adulthood.

Beaches most commonly used in Trinidad for nesting leatherback turtles are Matura, Salibia, Madamas, Paria, Blanchisseuse and as recently as ten (10) years ago nesting turtles were also frequently seen at Las Cuevas and even at Maracas Beach.

Adult leatherback turtles may weigh as much as 400 kilograms consisting mainly of muscular flesh that many people find tasty. This factor, along with the fact that their shells or backs are made up of soft leathery carapaces, and are not composed of the hard shell, characteristic of other turtles, make them easy targets for killing and many are slaughtered annually.

To protect these animals from being slaughtered for their meat while nesting and to protect eggs until they hatch, the government of Trinidad and Tobago legislated under the Fisheries Ordinance, the Protection of Turtles and Turtle Eggs Regulations 1975. This Act makes provision for the prosecution of anyone who captures, kills or mutilates any marine turtle or removes their eggs from beaches.

Early historical accounts of sea turtles indicated that population levels once were very high and several beaches in the Caribbean area were used as nesting grounds. Today, populations have declined to such low levels that former nesting grounds in the Cayman Islands and the Tortugas are no longer utilized by these reptiles. Population levels of leatherback turtles in particular are low enough to warrant international concern by conservationists and the species has been listed as endangered worldwide under the U.S. Endangered Species Act.

Many reasons have been proposed for population declines of leatherback turtles worldwide. However, the principal reason may be uncontrolled harvesting of the animal for meat. Every year scores of rotting carcasses could be observed along beaches of Trinidad as a result of illicit slaughter by poachers who are unable to cart away all of the meat, and the major portion is left to rot. Nests of eggs are dug up also. This distasteful practice not only kills the turtles of the present generation but destroys the potential for population increased due to egg harvests.

Disregard for the life of these creatures has been so great that some fishermen do not consider it an immoral act to hack off a flipper for use as bait to catch sharks and leave the remainder of the carcass to rot. It has been found that blood alone from turtles will also attract sharks, so that a partially damaged turtle or even blood-soaked sand may be used as lures for sharks.

The ease with which leatherback turtles can be killed is facilitated by the inability of the female to react to disturbance while she is in the act of laying eggs. Due to some primitive instinct, once the process of laying has been initiated the female can be prodded, poked or even hacked and she will not move. This makes the creature extremely vulnerable to 'killers" and necessitates action by concerned individuals to prevent this annual tragedy.

Conservation groups in Trinidad have been working to stem the tide of this illegal slaughter and to undertake basic scientific studies on these magnificent creatures. These groups who patrol beaches and tag turtles, include the Field Naturalists, Point-a-Pierre Wildfowl Trust, the Forestry Division and, the Institute of Marine Affairs. Recently, because of round the clock patrols, a decline in slaughter has been observed although it is possible that the whole animal may now be carted away leaving no tell-tale signs of slaughter on the beaches.

Leatherback turtles migrate long distances during the non-nesting season. Turtles tagged in Trinidad have been observed on beaches as far away as Nova Scotia, Canada (North America) and Europe. This

remarkable creature which has apparently not changed much from its ancient ancestors is a unique part of our natural heritage and inspires wonder, reverence and a feeling for beauty in all who witness the sight of nesting turtles. This magnificent phenomenon cannot be duplicated, and Trinidadians who care are very fortunate to witness this beautiful episode of one of nature's bounteous surprises almost nightly for at least five (5) months every year.

PLEASE HELP TO PRESERVE WILDLIFE.
APPENDIX XVI

Ramquar, J. (1983). Save the Leatherbacks,

In

James, C. (1983). Highlighting Wildlife, Basic Information on Wildlife Conservation in Trinidad and Tobago.

Pp 50

Save the Leather Backs by Joel Ramquar, Forestry Division

A Beastly looking Monster in man's sight, Still her flesh consumed satisfies his appetite, With the will to survive, she treds our shores, Only to be slaughtered by us more and more; When would we hopefully realize, It's our taste we should sacrifice, I hereby beg with emotional plea, For God in Heaven Sake! Let the gentle turtle be, Is it too much I am asking of thee? Or can't you allow the Leather Back to nest free? Whales, Leather Backs, and even Manatee; We'll kill them all without mercy. If all these creatures were to one day vanish, For the lack of their beauty and interest, Our world would perish, We would be to blame if we don't adhere, By our children, a horrid scar they will bear, Let us all now change the trend, And vow, never to bring these Creatures to an end.

APPENDIX XVII

Arneaud, W. (1987)

The Leatherback Turtle of Trinidad

The Leatherback Turtle of Trinidad by Wayne Arneaud, Forester I, Wildlife

She comes from lands around so far, even as far as Canada and Africa. She challenges the Ocean's rough seas and currents to destined places, one of such is Trinidad, for her blessed laying season time from April to September. Alas!, she is no more, beheaded for such little gains by a vile head hunter. Some says she is hideous, I say gracious, as she digs with such gentle power. With tears in her eyes she cries. Why she comes to La Trinity for such exploit? Grainy shore sand, the will of god, surely our country emits a certain power, and surely she brings some along. Please save our leather back turtle, for she is helpless!

APPENDIX XVIII

Publicity Material Prepared by

Gary DeFreitas' Forestry Division's Artist (Cartoons, Posters)



Steups! C'yar get chance to lay at all



Hurry Mary, run for your life!



Who me! No sir! I going some way else.







MAMA! MAMA! Oh Gosh she dead



Oh Gosh!! They coming.



















Look we boys reach!We could now lay safe.















DOH WORRY MARY, DAT IS WE BOYS, THE GAME WARDENS.







NESTING TURTLES "An unforgettable sight; to see is to believe."







APPENDIX XIX

Photograph of a Leatherback Carcass



APPENDIX XX

Photograph of a Leatherback's Nest and Eggs



WESTERN ATLANTIC TURTLE SYMPOSIUM II

NATIONAL REPORT

TRINIDAD AND TOBAGO

Prepared by

Nadra Nathai-Gyan • National Representative Dr. Carol James and Geddes Hislop

WILDLIFE SECTION • FORESTRY DIVISION

MINISTRY OF FOOD PRODUCTION, MARINE EXPLOITATION, FORESTRY AND THE ENVIRONMENT

October, 1987.

This report has been prepared for the Western Atlantic Turtle Symposium II (WATS II) scheduled for 1979 October 11 to 1987 October 16 at Mayaguez, Puerto Rico.

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The kind assistance of Mr. Garry DeFreitas, Forestry Division's Artist, in supplying publicity material (drawings, posters, cartoons) and the Drawing Office, Forestry Division in supplying maps is gratefully acknowledged. Assistance in protection of nesting beaches by officers of the North East Conservancy of the Forestry Division is also acknowledged. CONTENTS

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A. INTRODUCTION

Trinidad and Tobago are the most southerly of the Caribbean chain of islands with Trinidad lying close to the Orinoco Delta of the mainland of South America (approximately 12 km or 6.2 miles) and Tobago lying 34 km or 20 miles north east of Trinidad (Figure I).

The twin island nation comprises of an area of 5123 sq. km (1980 sq. miles) of which Trinidad is approximately 4828 sq. km (1864 sq. miles). Both islands lie between $10^{\circ} - 12^{\circ}$ North Latitude and 60° 62[°] West Long itude.

The total population of Trinidad and Tobago is estimated to be 1,149,300 persons with 1,106,300 in Trinidad and 43,000 in Tobago (Central Statistical Office, June 1983).

The unique physiogeographic layout of both islands provides a wide variety of habitats for numerous species of fauna, including 5 species of marine turtles, which have historically nested on most of the country's sandy beaches (Fig. IImap of Sandy Beaches). Within recent times, increasing human populations and parallel infrastructural, social and economic developments, have served to reduce the number of suitable beaches for marine turtles. Thus, this report focusses attention on the main nesting beaches visited annually by various species of marine turtles with limited references to occasional visits on historical nesting sites.

B - PART 1

Summary of Past and Present status of Sea Turtles in

Trinidad and Tobago

1. Species nesting in Trinidad and Tobago

1.1

The leatherback turtle, <u>Dermochelys</u> <u>coriacea</u> (local name - Caldon).

The leatherback turtle is the dominant species of marine turtle which nests both in Trinidad and Tobago. In Trinidad nesting is confined to the North East and North Coast Beaches and in Tobago to the more Leeward coast (Figs. III and IV.). Trinidad beaches with greatest nesting activity are Matura, Fishing Pond, Paria, Grand Tacarib and Madamas. It is at Matura however, that protection efforts and nesting studies/observations have been undertaken in greatest detail because of its relatively easy accessibility. Plymouth and Turtle Beach are the two more important nesting beaches in Tobago.

Nesting takes place each year from about late March to late August with early arrivals in February and stragglers in September. Indeed, for this season (1987) five (5) leatherback nests and 15-20 hatchling tracks were observed at Fishing Pond as early as late February by Wildlife Enforcement Officers. Late February hatchlings would suggest nesting activity as late as November 1986. Peak nesting occurs in May - June and it is not unusual to count as many as seventeen (17) turtles nesting per night on a 2.5 km stretch of beach at one of the major nesting beaches during this period.

Data collected since 1984 suggests that approximately 500 - 900 mature female turtles come ashore in Trinidad to nest each year. An increase in nesting was observed in 1985 and this has been paralleled in 1987 (Tables 1 and 3). In fact, this data suggests that for 1987 there seems to have been an unprecedented increase in nesting. Many turtles were observed at the beaches, with damaged fins, bruises (old and new), and round tag holes. No recent information on nesting numbers is

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MARINE TURTLE NESTING AREAS OF TRINIDAD



-20-

available for Tobago. Bacon, 1971 (App. I) reported that the Tobago population numbers only a few dozens and recent verbal reports suggest no significant changes.

1.2 The green turtle, <u>Chelonia mydas</u>

Although no data has been collected in a systematic way, reports are received that the green turtle is frequently caught by fishermen in waters of Trinidad and Tobago and it appears that this species is moderately common. Nesting on Trinidad and Tobago beaches occurs occasionally at Paria, Moruga and offshore islands in North West Trinidad. Occasional sightings of nests are made during regular patrols to protect and study leatherback turtles but there is insufficient data to pinpoint its relative abundance, preferred beaches, season (peak season inclusive), etc. It can safely be assumed that nesting is much less common than the leatherback/at least some nesting activity takes place during the nesting season of the leatherback.

1.3 The hawksbill turtle, <u>Eretmochelys</u> <u>imbricata</u> (Local name - Oxbill)

Pritchard, 1984 (App. II pg 23-24) reported that the hawksbill turtle can be found around coral reefs with nesting grounds often very close to favourite/grounds. During the period under review, hawksbill nest were observed singly and never in groups at various beaches around Trinidad (sandy and rocky) but only one hawksbill turtle was actually observed nesting at Matura in 1985. Pritchard (1984) further states that actual records of nesting hawksbills in Trinidad are rather few, and appears to be concentrated on the Bocas Islands rather than on Trinidad itself.

1.4

The olive ridley turtle, Lepidochelys olivacea (Local name - batali)

Historically, nesting records of olive ridley in Trinidad and Tobago are very rare although it is commonly caught in Trinidad waters. Two recent noteworthy records of nesting by olive ridley are:-

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- Nesting in Western Trinidad, ie. Orange Valley - 1 nest and Otaheite - 20 + in 1984 (reported by M. Gaskin, 1984).
- Discovery of an olive ridley carcass at Fishing Pond in September 1986 (assumed that turtle came ashore to nest and became entangled in beach debris rendering it incapable of returning to sea).

1.5 The loggerhead turtle, <u>Caretta caretta</u>

1.

The loggerhead turtle is the rarest of the marine turtles found in Trinidad and Tobago waters and records of nesting are few to non-existent. Confirmed sightings of loggerheads have been made around the North Coast and Chachachacare Island (one of the Bocas Islands). In addition in March 1987 two loggerhead shells were discovered at an inland river at D'Abadie in East Trinidad, used for recreational purposes, and there were signs that the meat may have been cooked not far away from the discarded shells. Fishermen may have captured these in Trinidad waters.

* Detailed further in C - Part 2.

2. <u>Factors_affecting_nesting_beaches</u>

- 2.1 Nesting beaches can be described as high-energy sandy beaches where the sand particles have been graded by the waves into zones of a certain texture and size. In the ideal nesting zone, sand is less compacted and this allows for more aeration of nests and easier digging by turtles(evidenced by the difficulty experienced whilst walking on this loose surface).
- 2.2 Most of the suitable nesting beaches offer wide, sandy surface, have gently sloping inclines and are bordered by unbroken lines of vegetation.
- 2.3 The undesirable practice of sand-mining was allowed at Matura BEach up to 1984, but was terminated thereafter, largely through

- 4 --
the efforts of the Wildlife Section, Forestry Division in alerting authorities in the mining sector of the detrimental effects of this practice. Removal of sand resulted in ' drastic changes in beach contours due to tidal action in quarried areas (large craters, fallen coconut trees on shoreline) leaving no suitable nesting surfaces. Fortunately, with the cessation of this practice, beach conditions were stabilized. Further Ref: App. II Pg. 16-18 ; App. III pg. 1 ;

App. IV pg. 3-4 and 13.

2.4

Solid waste pollution is a serious problem affecting most turtle nesting beaches and usually consist of any item from logs, branches, dried coconuts, plastics, bottles, fishing nets, and a host of other incidental items either brought in by tides or washed from inland by rivers. During certain months of the year as much as 70% of beach surfaces may be covered by debris resulting in drastic reductions of available nesting surfaces. Observations indicate that the immediate areas selected by the leatherback turtles to nest are mostly wide sandy areas free of debris. Available nesting beach surfaces are further affected by creeping vegetation (<u>Sesuvium portulacastrum</u>; <u>Ipomea pes capre</u>; <u>Sporobolus</u>; <u>Canavalia</u>) growing rapidly during the start of the rainy season.

2.5

Due to the high-energy condition of these beaches there is a natural cycle of sand accretion and erosion. At times, the erosion phase can fall within the critical nesting period thus reducing nesting surface as well as destroying nests and eggs (eggs have been found scattered and nests exposed).

2.6

Increased recreational activities at Manzanilla, Mayaro and Guayaguayare beaches have seriously affected nesting at these beaches where significant numbers of leather back turtles continue to nest anually. Manzanilla and Mayaro may suffer a similar fate to North Coast Beaches such as Maracas and Las Cuevas where recreational activity has had negative impacts on turtle nesting.

3. <u>Exploitation</u>

3.1 Quantities of sea turtles taken for human use and the kind of use.

The leatherback marine turtle is the only marine turtle for which data on exploitation has been collected on a regular basis. In 1985, 68 carcasses were recorded; in 1986, 11 carcasses; in 1987, 28 carcasses for Trinidad. These carcasses were as a result of illegal slaughtering of the nesting female turtle while on land. This data is not comprehensive as other evidence of slaughter not based on carcass sightings is difficult to obtain. Some carcasses are burried deep in the sand; are covered with an abundance of vegetation; may be dumped far out at sea and in some instances the entire carcasses may be carried inland to locations where time is taken to dress the meat for sale. Frequently poachers are unable to cart-away all the meat and the carcass is left on spot where rotting occurs. Needless to say, the stench emanating from this rotting carcass spoils the pleasure of people visiting the area to view the nesting turtles. In addition, a certain percentage of both males and females are caught as incidental catch in fisheries (fishing nets and shrimp trawls) or deliberately caught with nets and harpoons. Since 1984 data on incidental catch of marine turtles in fisheries ; deliberate catch catch has not been collected by the Fisheries Division of the Ministry of Food Production, Marine Exploitation, Forestry and the Environment.

Other species are spared the wanton slaughter while on land because of their unobstru**s** ive nesting habits. However, the green, hawksbill and olive ridley turtles are frequently caught in fishing nets. Recent reports indicate that fishermen at Paria, Moruga and Sea Lots design special nets with a mesh size between 6-10 " specifically to harvest green turtles illegally.

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There is also serious poaching of eggs often in the day-time when long poles are poked into the sand and if the ends come up sticky, the nests are dug-up and the eggs retrieved.

Meat obtained from marine turtles is used for domestic consumption or commercial gains. In the case of the former, it may be prepared in curry, stew or soup (calipee). The latter is a lucrative trade and the meat may be sold in local markets at prices ranging from TT\$2.00/lb wholesale and TT\$5.00-TT\$6.00/lb. or cooked and sold disguised as "beef-roti" (especially leatherback which is known as "Brazilian Beef" in the North Coast villages of Trinidad) for TT\$6.00 - TT\$8.00 by unscrupulous vendors. In Tobago, hotels have been known to serve "turtle-steaks"in their menu. The green and hawksbill in that order are preferred by the populace of Trinidad and Tobago due to the edibility of the meat.

An unusual use for the male turtle genital organ has been explored by a 24-year old man from Port-of-Spain. It is grated and formed into a concoction with brandy, punches, peanut, soursop, carrot, etc. He claims that it is a highly successful aphrodisiac (App. V).

Eggs are utilized mainly because of the supposedly aprodisiac quality and may be eaten raw or cooked (fried). In addition, some people especially in the poorer rural areas may also use the eggs for subsistence.

Fins are sometimes hacked from nesting turtles and used as bait for catching sharks which are usually attracted to the scent of blood. Local shark fishermen have found it profitable to use fins as lures for sharks nearby in the waters and leatherback turtles are mostly affected by this highly undesirable practice.

- 7 -

The only other species of marine turtle exploited for products other than its meat in Trinidad and Tobago is the hawksbill turtle. Shells (tortoiseshell) are utilised in various ways to make jewelry (rings, earnings, braclets, pendants) carvings, accessories (brooches, pins, hairpins, clips, combs) and souvenirs or curios ("backs" are polished). Pritchard (1984) indicated that the shell and leather of wild green turtles are of little Commercial value or importance.

Further Ref: App. II pp 26-27, 29 ; App. IV pp 2, 13-14

Trade in Sea Turtle Products

3.2

3.2.a. Local

In the past, a localized trade existed in the villages of Trinidad and Tobago where the hawksbill shells were obtained primarily for/the handicraft industry. This may still occur since worked items turn up for sale in hotels and other tourist centres. Many homes in Trinidad and Tobago also display polished "backs" which they may have obtained either as a gift or purchased from local "manufacturers".

3.2.b. International

Milliken and Tokunaga (1987) (App. VI) reported that no trade in "tortoise shell" was received from Trinidad and Tobago between 1970 and 1982, but suddenly appeared in Japanese Customs data in 1983, 1984 and 1985 for a total of 1,081 kg (derived from at least 1,000 hawksbill). An investigation was held into 63 kg exported to Japan in 1985 and it was confirmed by the Wildlife Section, CITES Management Authority of Trinidad and Tobago to Traffic (Japan) that it was an

illegal exportation. this may have alerted the dealer since in 1986, trade from Trinidad was halted. It is possible that illegal trade may have shifted to another Caribbean Country.

Pritchard (1984) (App. II pp 26) related that a considerable proportion of the shells of hawksbills caught in Trinidad waters is purchased for \$15 TT -\$20 TT per pound by Hashim Mohammed of Toco, who then sells it to Mr. Charles Fritz of St. Lucia who visits Trinidad approximately every three months, purchasing shell for export to Japan.

The Trinidad and Tobago delegation of the sixth meeting of CITES held in Ottawa from July 11-24 expressed strong concerns about the exploitation of marine turtles and turtle products in the region. The delegation commended the Japanese delegation for removing its restriction on the Appendix I listing of green turtles but felt that such action had not gone far enough and recommended that similar action should also be taken with regard to the hawksbill turtle. The Trinidad and Tobago delegation also supported proposals made at the conference to reject the French proposal for ranching turtles until mechanisms for tighter control on trade in the Caribbean region involving transhipment of products from various regional territories, including Trinidad and Tobago, through the French overseas departments of Martinique, Guaddoupe and French Guiana was developed. (App.VII). * Further information on Exploitation: App VIII pg 2-5).

Other_known_sources_of_sea_turtle_morality 4.

The question of sea turtle morality is being broa dened to include factors affecting turtle-nesting success and other unfavourable conditions.

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4.1 A major mortality factor for sea turtles is the accidental capture in fisheries operations (fish nets and shrimp trawls). Turtles are injured or drowned and in cases where they are brought up alive, fishermen kill them and sell the meat to compensate for the damage to the fishing nets. This problem is intensified during the nesting season when turtles "bask" near to shore resulting in more females than males being caught in nets.

Turtles are also hunted in the open waters by fishermen using nets or harpoons.

- 4.2 During the nesting process, leatherback turtles are subjected to lights (torches, cameras), noises, other disturbances from large, sometimes unruly crowds who flock the beaches to observe nesting. These activities undoubtedly disturb and frighten the turtles which may return to sea without laying.
- 4.3 Nests are dug up by dogs, corbeaux (<u>Coragyps atratus</u> vulture), which utilize eggs for food and there is some evidence that eggs may also be penetrated by ghost crabs (<u>Ocypoda guadrata</u>) thus rendering them useless. This situation is grave/Grande Riviere and Madamas Beaches. Corbeaux will also eat the carcasses left on the beaches to rot.
- 4.4 Based upon repeated observations, it is apparent that dogs, corbeaux and ghost crabs also eat hatchlings when they emerge. In addition, some are eaten by shore birds such as gulls and frigate birds and in the waters by sharks and large carnivorous fish.
- 4.5 Lights are detrimental to hatchlings resulting in disorientation. Some go inland following the lights (in built-up areas eg. Grande Rivere) or into the vegetation lining the shore and sooner or later perish.

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- Litter on the beach, in addition to reducing the amount of 4.6 nesting surface available, also present obstacles to hatchlings heading out to sea. Observations have been made on beach debris. many occasions of hatchlings entangled in
- Crowds of visitors lured by the spectacular attraction of 4.7 turtle nesting walk on beach surfaces where nests are already located. This can seriously affect eggs and hatchlings since compaction can occur to reduce/impede aeration of the nests and emergence of hatchlings.
- Erosion (natural/cauSal) especially in these high-energy 4.8 beaches can result in nests being destroyed by tidal actions (washed away, slopes caved-in) leaving eggs scattered and exposed. Observed at Matura , fishing Pond, Grand Rivere and Madamas.
- At Matura Beach for 1987, it was observed that clay from 4.9 bordering hillsides was washed down during the rainy season and covered portions of the nesting surface. On hot sunny days when this clay layer hardened, hatchlings were unable to penetrate the surface and in a few nests excavated in this area dead hatchlings were found. Also, unusually heavy deposition of sand was observed at Matura in 1987 which could have presented some degree of difficulty to emerging hatchlings.

Important sea turtle foraging areas

5.

Sea turtles have been observed feeding and swimming this year (1987) in the waters off the Bocas Islands (North West), Galera Point (North East) and Solado Rock (South West). . Luxmoore and Groombridge (1987) cite foraging sites in ١. Trinidad for the green turtle at Gulf of Paria, Toco, Grande Rivere Bay, Soldado Rock and Scotland Bay. Foraging sites in Tobago are Man O'War Bay, Buccoo Reef and Bon Accord Lagoon.

For the hawksbill turtle, Salybia Reef, Maqueripe Bay and the North Coast near Toco in Trinidad and Man O'War Bay and Bon Accord Lagoon in Tobago were identified as foraging areas. Further Ref: App. VIII.

6. <u>Summary of Marine Turtle Research Projects in</u> <u>Trinidad, W.I. (Past, Present and Planned)</u>.

The following lists publications (Scientific and popular) relating to Marine Turtle Conservation and/or Research in Trinidad and Tobago:

- 1. Ingle,R.M. & F.G.W. Walton Smith, 1949. Sea Turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico, with annotated bibliography. Spec. Publ. Marine Lab. Univ. of Miami Press, Miami, 107 pp. (Leatherback breeding season May - June in Trinidad)
- Carr, A.F. 1956 and rep. 1963 The Windward Road, adventures of a naturalist on remote caribbean shores. Knopf, New York, 258 pp.

(Trinidad's North Coast, fishermen interviews; report of the "batali" (<u>Lepidochelys olivacea</u>) for first time in Trinidad).

- 3. Bacon, P.R. 1967. Leatherback Turtles. Jour. Trinidad Field Naturalist's Club. 1967 : 2-3 (Brief summary of the presence of nesting <u>Dermochelys</u> in Trinidad)
- Bacon, P.R. 1969. The Leatherback Turtle Project. Jour.
 Trinidad Field Naturalists Club, 1969 : 8 9
 (Update of Bacon (1967); with 1967/1968 nesting
 reports and recommendations for conservation)

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Bacon, P.R. 1970 Studies of the Leatherback turtle, <u>Dermochelys</u> <u>coriacea</u> (L.) in Trinidad, West Indies. Biol. Conserv. 2(3): 213 - 217.

(General discriptions of : nesting colony ; nesting adults ; summary of breeding season (March to August). Nesting reports at Paria (North Coast) and Matura (East Coast. 150-200 estimated nesting in Trinidad. Slaughters at Matura).

6. Status of Sea Turtle conservation in Trinidad. 1970 • Caribbean Conservation Association. Environmental Newsletter. 1(2) (Oct): 14-17.

7. Bacon, P.R & G.K. Maliphant.1971. Further studies on sea turtles in Trinidad and Tobago with a guide to the common species and their hatchlings. Trinidad Field Naturalists Journal. 1971:2-17.

/ Trinidad population
estimated at 500-600,
with 200-250 nesting
per year.

(Nesting reports on North and East Coast beaches. Adult measurements and timing of nesting. Matura nesting population estimated at 90-120 per year./Nesting reported at Grafton Estate, Tobago).

 Bacon, P.R. 1973. The status and management of sea turtles of Trinidad and Tobago. Report to the Permanent Secretary, Ministry of Agriculture 40. pp. (mimeo).

(Statistics on sales of turtle meat islandwide. Estimates 30% slaughter at Matura and 100% at North Coast beaches near villages. Summarise existing relevant legislation with recommendations for enforcement. Turtle sanctuaries proposed at Paria and Matura).

Bacon, P.R. 1973. Appraisal of the stocks and management of sea turtles in the Caribbean and adjacent regions. Reports to CICAR meeting in Cartagena, Colombia, July 1973. (Brief summary of Trinidad turtle situation; Protection only from June 1 to September 30 (1952 regulations). Annual catch in Trinidad waters estimated at over 50,000 pounds).

10.

Rebel, T.P. 1973 Sea turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico. Univ. Miami Press: 250 pp.

> (Revision of Ingle and Walton Smith (1949). ea turtle landings for 1969 in Trinidad given as 11,747 pounds. Quotes Bacon and summarises regulations).

Pritchard; P.C.H. 1973 International migrations of South Americansea turtles (Cheloniidae and Dermochelidae). Anim. Behav., 21: 18-27.

(List several Trinidad and Venezuelan tag recoveries for female <u>Lepidochelys</u> <u>olivacea</u> tagged while nesting in Suriname).

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11.

Bacon P.R. 1975. Review of research, exploitation and management of the stocks of sea turtles in the Caribbean
Région. FAO Fisheries Circular No. 334: 19 pp. mimeo.
(Summarises information from other sources. Tobago
Society for Prevention of cruelty of animals
offered \$50 TT to persons ensuring safety of nesting turtles. Increased to \$75 TT in 1974. Many turtles
saved as a result).

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(Leatherback nesting in Trinidad. Includes folklore concerning the Turtle Star and the Leatherback turtle is the "doctor turtle" visiting other turtles when they are sick).

14. Pritchard, P.C.H. Post-nesting movements of marine turtles (Cheloniidae and Dermochelyidae) tagged in Guianas, Copeia, 1976: 749-754.

(Eight Trinidadian recoveries of tagged Surinam <u>L</u>. Olivacea reported, as well as 4 from Isla Marguarita and 13 from Eastern Venezuela).

- 15. Hilton, A. 1977. My first turtle. Trinidad Naturalist 1(9): 14 - 16.
- 16. Jones, A. & N. Sefton. 1978. Marine life of the Caribbean. London: Mac Millan Caribbean. 89 pp.
- Kenny, J.S. & P. R. Bacon, 1981. Aquatic resources. <u>In</u> The natural resources of Trinidad and Tobago, eds. P.R. Bacon and G.C. Cooper, 112-144. London: E. Arnold.
- 18. Bacon, P.R. 1981. The status of sea turtle stocks management in the Western Central Atlantic. WECAF studies No.7, UNDP 1-38.

(Summarises nesting/foraging sites for each sea turtle species in Trinidad and Tobago. Estimates 400-500 female <u>Dermochelys</u> in Trinidad in 1972, 800-1000 in 1975. Proposed sanctuaries at Matura and Paria, Trinidad. Summarises regulations).

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19. Carr, A.F., A. Meylan, K. Bjorndal & T. Carr 1982. Surveys of sea turtle populations and habitats in the Western Atlantic. NOAA TEchnical Memorandum NMFS-SEFC-91. 1-82.

> (Reports nesting of 2 green turtles and one hawkbill turtle at Mayaro) Manzanilla beaches, Trinidad, Hawksbill nesting in Tobago. Leatherback deaths on Tobago beaches in 1977. Migratory route along Trinidad North Coast. General deplation of turtle populations).

20. Chu Cheong, L. 198 - . - Mimeographed summary of a 3-year study of Trinidad sea-turtles.

(Extensive information on nesting beaches, nesting censuses, beach dynamics, market surveys, fisheries statistics, labratory hatching and hatchling nutritional studies, head-starting of hawkbills.Bresented at W.A.T.S.I.)

- 21. James, C. 1983 The Leatherback turtle. <u>In</u> Highlighting Wildlife, ed. C. James. pg. 41-44. Forestry Division, Ministry of Agriculture, Lands and Food Production.
- 22. Nathai-Gyan, N. 1984. Basic information on the leatherback turtle. (<u>Dermochelys coriacea</u>). Zoologist Section, Wildlife Section, Forestry Division, Ministry of Agriculture, Lands and Food Production.
- 23. Nathai-Gyan, N. 1984. Marine turtle management in Trinidad and Tobago with specific reference to the Leatherback turtle (<u>Dermochelys coriacea</u>). Wildlife Section, Forestry Division, Ministry of Agriculture, Lands and Food Production.

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- 24. Pritchard, P.C.H. 1984. Marine Turtles: Trinidad and Tobago. Report on a Consultancy to the F.A.O. acting as executing agency for the U.N.D.P.. U.N.D.P./F.A.O., Port-of-Spain. (Outlines the sea turtle situation in Trinidad and Tobago at present; summarises existing management strat gies with recommendations. Discuss problems faced by the five local species with suggestions for management).
 - 25. Marine turtle management at Fishing Pond with specific reference to the Leatherback turtle, <u>Dermochelys coriacea</u> (1987) Wildlife Section, Forestry Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment.
 - 26. Protection of Leatherback and other marine turtles by the Forestry Division (1987). Report submitted by the Wildlife Section, Forestry Division, to the Honourable Minister, Ministry of Food Production, Marine Exploitation, Forestry and the Environment.
 - References 1-5; 7-14 and 18-20 cited from Pritchard, 1984.
 - References 6 and 15-17 cited from Salisbury, L. 1987.
 Natural History of Trinidad and Tobago:
 a bibliography. Bibliographic Series No. 7,
 U. West Indies, Trinidad.

In December 1983, The Wildlife Section, Forestry Division became involved in a long-term research project, entitled "Nesting Characteristics of marine turtles with special reference to the Leatherback Turtle (<u>Dermochelys coriacea</u>). Objectives are listed hereunder:

- To determine location, frequency and duration of nesting of leatherback turtles.
- To determine the degree of threat to turtle nesting (sand mining, poaching, predation).
- To prepare management plans protecting both the turtles and their breeding environment.
- To contribute data to both local and foreign bodies involved in Marine Turtle Research.

7. Persons/Organisations concerned with Marine Turtle Conservation/Management in Trinidad & Tobago.

The following persons/organisations have made contributions to the conservation/management of Marine Turtles in Trinidad and Tobago:

7.1 Governmental:

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1) Forestry Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment. Long Circular Road, St. James, Trinidad, West-Indies OR P.O. Bag 30, Port-of-Spain, Trinidad West-Indies.

Phone: (809) 62-27476.

2) Fisheries Division, Ministry of Food Production, Marine Exploitation, Forestry and the Environment. St. Clair,

Port-of-Spain, Trinidad, W.I.

- Phone: (809) 62-25481.
- 3) Wildlife sub-section, Forestry Section, Tobago House of Assembly, Studley Park, Tobago, W.I.
 - OR c/o Botanical Station, Scarborough, Tobago, W.I. Phone: (809) 660-2234/2428
- Institute of Marine Affairs, 4)

Hilltop Lane, Chaguaramas, Trinidad, West-Indies. Phone: (809) 634-4292-4.

5) Zoological Society of Trinidad and Tobago, c/o Emperor Valley Zoo, Royal Botanic Gardens, Port-of-Spain, Trinidad, W.I.

Phone: (809) 62-23530.

- 7.2 Non-Governmental:
 - 1) Trinidad Field Naturalist Club c/o Ms. Luísa Zuniaga (Sec.) Errol Park Road, St. Ann's, Trinidad, West Indies.
 - 2) Point-a-Pierre Wildfowl Trust c/o Ms. Molly Gaskin, 42 Sandown Road, Goodwood Park, Westmoorings, Trinidad, West-Indies. Phone: (809) 63-75145.

- 3) Trinidad Naturalist Magazine, 20 Collens Road, Maraval, Trinidad, West-Indies. Phone: (809) 62-26625.
- 4) Mr. Ishmael Samad
 c/o Natural History Library, 11 Mac Donnel]Street, Curepe, Trinidad, West Indies.

Phone: (809) 64-53402.

- 5) Asa Wright Nature Centre, P.O. Bag 10, Port-of-Spain, Trinidad, West Indies.
- 6) Nature Angels Hiking Club,

c/o Mr. Anthony Dial, La Canoa Road, Pole No. 28, Lower Santa Cruz, Trinidad, West Indies.

8. Current laws or regulations concerning sea turtles:

8.1 International

Trinidad and Tobago is signatory to the Convention on International Trade in Endangered species of wild Flora and Fauna (CITES) since 1984. The terms of this Convention regulate /prohibit commercial import or export of marine turtles or their products in signatory countries.

8.2 Domestic

- The Conservation of Wildlife Act, Chapter 67:01 of the Laws of Trinidad and Tobago, 1958 (App. IX) makes provision for the prosecution of anyone who kills, wounds, pursues, captures or molests by any method, any animal not listed in schedules to the Act. (The definition given for the word <u>animal</u> in Section 2 is "animal means any mammal, bird or <u>reptile</u> and <u>includes</u> the eggs, carcass, meat, nest or young thereof). For marine turtles, this protection applies all year round willst on land.

- The Fisheries Act, Chapter 67:51 of the Laws of Trinidad and Tobago, 1916 (App.(X) includes regulations for the management of "fish" defined as including "oysters, crabs, shrimps, turtle,turtle eggs, corals and any species of other marine fauna.
- The protection of Turtle and Turtle Eggs Regulatins, 1975 made under Section 4 of the Fisheries Act specifies that there must be a closed Season on all capture and marketing of turtles from March 1st to September 30 (nesting season); that turtle eggs are protected at all times, and no female turtle may be caught either while on shore, within a reef, or within 1000 yards of shore where there is no reef.
 - The apparent conflict between protection and utilization in these three pieces of legislation has been drawn to the attention of the Fisheries Division which supports our recommendations for amendments which eliminate utilization of marine turtles.

Over the peri od that the Wildlife Section started formal patrols of turtle nesting beaches, the only arrests made were of five poachers apprehended on the one road out of Vega De Oropouche (North-East) in 1985 after a two-day stake-out by Game Wardens and a Police Officer. This resulted in at least six (6) Court appearances spread over ten (10) months, legal bungling by defence attorneys, and eventually the case was dismissed with strong warnings to the defendants by the very concerned magistrate. (Appendix III pg.2).

Limited manpower and inability to limit access to nesting beaches, has made marine turtle protection at Matura and Fishing Pond exceedingly difficult. Towards this end recommendations have been made to restrict public entry to these areas during nesting seasons. (App. XI).

9. Recommendations made to improve Turtle Management in Trinidad and Tobago.

- 9.1 Assistance required from the Police, Army and Coast Guard to Patrol the turtle-nesting beaches (increase manpower is essential).
- 9.2 Precepts, arms and communication equipment are required for Wildlife Officers. (Cutlasses are inadequate to deal with irate poachers).
- 9.3 Massive public education drive. This is already bearing fruit as evidenced by the furore this year over wanton slaughters of leatherbacks in the news media (App. XII) and the increased number of people (members of the public) patrolling the beaches.
- 9.4 Declaration of Turtle Nesting Beaches at Fishing Pond and Matura Beach as Prohibited Areas for the 1988 Turtle Nesting Season to allow for regulation and monitoring of activities in these areas. (App. XI).
- 9.5 Amendment of the Fisheries Act, Chapter 67:51 to remove harvesting of marine turtles.
- 9.6 Assistance from regional CITES management authorities in minimising illegal transhipments of products through ports. A regional computer network for trade data would help to reduce this problem and informal approaches made for fundingat the Sixth CITES Meeting require follow-up.

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C - PART 2

Attachments of WATS II Sea Turtle Survey Data Forms

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Due to the non-receipt of the above-mentioned data forms, the data sheet used by the Wildlife Section, Forestry Division (App. XIII) is substituted and used as the basis for the Summarising process.

Tables presented below outline the information collected for the period 1985 to 1987 at various nesting beaches through-out Trinidad No information was available from Tobago. TABLE 1

DATA COLLECTED FOR 1985

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Remarks	VCIIICA													-24-	
Beach ⁵ condition	(1111111111111111111111111111111111111														
	Activity		Fishing	Turtle viewing	-op-		Turtle viewing	- Turtle	viewing	Fishing	Turtle = viewing	Research	Turtle viewing		
Influence	Origin ⁴ /		T'dadian	Undeter- mined	Undeter- mined	1	Undeter- mined	- ECIAF	students	Undeter- mined	Field Natura-	list Club	British Embassy		
Human	Number		9	2	4	1	ຕ	35 -		Ś	ନ		و		
	Tide	:	Low	High	Low	Low	High	High Low		High	Low				
Moon ³	phase		Full	Full	г.Q.	N.M.	N.M.	N.M. F.O.		F.Q.	г.д.				
A vora op	width	×	3' 5"	31 6"	31 4"	31 0"	3' 7"	4'3" 4'2"	ł	31 3"	31 8"				
	Averag e Length		4' 10"	4' 9"	4' 11"	4'0"	4' 9"	5'6" , '8"	4 0	4' 4"	1, 9"				
	Carcasses ²		1	I	1	I	2	ļ	7	ł	3 (day-time) -				
s seen	Did not lay		•	1	I	1		1	<u>در</u>	1	н				
Turtle	Laid	. :		1 1	2	1	7	4			12				
No. of	Total				5	H-	en	4	9		13				
	Date			4/4/85 8///85	10/4/85	18/4/85	20/4/85	24/4/85	26/4/85	30/4/85	5/5/8:				
	Location	Motor	Beach												

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		Kemarks															-25-	
-	Beach 5	(dimmediate area)																
-		ce Activity	1 1	• •	Turtle viewing	1	Turtle viewing	Turtle viewing		Turtle viewing	Turtle viewing	1	Turtle viewing	-op-	-op-	·. 	Turtle viewing	
		Influenc	-1		Undeter- mined	1	Undeter- mined	Included T'dadian & French	Group	Undeter- mined	-op-	I	Undeter- mined	-op-	-op-	1	Undeter- mined	
		Human Number	. 1		12	ŀ	40	60		16	13	I	14	16	2	1		
		Tide	LOW		Low	High	High	High		High	Low	High	High	Low	High	High	High	
		Moon ² phase	WN		F.Q.	F.Q.	F.M.	F.M.		F.M.	F.M.	г.д.	г.д.	N.M.	F.Q.	F.Q.	F.Q.	
		Average width	6		2'9"	31 8"	31 5"	4'2"	,	31 4"	3' 8"	3' 3"	4' 0"	31 9"	3' 8"	3, 1"	3' 10"	
	•	Average Length	. 1		4'8"	51 3"	4' 8"´	5' 2"	1	5' 1"	4'11"	51 3"	5' 2"	5' 1"	51 3"	5-1=	41 [.] 8"	
		Carcasses ²	I	2(day-time)	4	.i	1	I	•	I	I	I	I	1	ł	ł	ł	
	1 s seen	Did not lay	1		ł	4	6	1	•	6	ო	н	I	I	1	ı	t	
-	Turtle	Laid	1		7	0:	Q	4		13	9	4	6	ŷ	Ś	4	П	
	No. of	Total	2		2	13	15	4		15	6	S	6	9	5	4	-	
		Date	15/5/85	23/5/85	24/5/85	24/5/85	31/5/85	31/5/85		1/6/85	1/6/85	13/6/85	14/6/85	18/6/85	21/6/85	21/6/85	24/6/85	
		Location	Matura Beach															

TABLE 1 cont'd.

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		rks													-26-
		Rema												 	
	Beach S ondition	immediate area													
	U	Activity (Turtle- viewing	1	Viewing -do-	- op-	- op -	-op-	-op-	-00-	3 - 0 -	-op-			
	Influence	Origin ⁴	Jndeter- mined	1	Jndeter- mined -do-	- qo- 	-op-	-op-	-op-		- op -		1	 	
	Human	Number	16	16	16 20	1 -	t 04	56	s 56	,	22	4 8)	 533	
		Tide	High	High	High High	High	Hioh	High	Risin	Fall-	ing	High T 2	5 1 ·	 	
	· · · · · · · · · · · · · · · · · · ·	Moon ⁵ phase	F.Q.	F.Q.	F.Q. F.M.	г.Q.	р. Г.С.		10.			F.Q.			
		Average width	41 3"	3' 10"	5'0" 3'8"	3' 11"	4.0" 17"	, 		 	⊣ t	3' 7"		31 6"	
		Average Length	61 1"	5' 1"	5' 0" 4' 10"	5' 2"	513"	.0.0		+	11.4	5'9"	2, 2, 	5' 1"	
		Carcasses ²	I	1	1 1	1	I	ı	ı	1	1	I	1	11	
	een ¹	Did not lay	1		5 1	1		1	1		6	1	ę	40	:
ŀ	rtles s	Laid	2	4	, 4 c	ι Π		2	-1		e	<u>د</u>	Ś	 126	
	No. of Tu	Total	e	S	, Q	4 E	2	2		2	S	ŝ	80	 166	
		Date	8/6/85	38/6/85	29/6/85	co/1/6	11/7/85	12/7/85	12/7/85	13/7/85	25/7/85	27/7/85	31/7/85	 34	5
		Location	Matura 2	beacn											TOTAL

TABLE 1 cont'd.

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			Remarks												Day-light	assessment						- הכ	1-
•		Beach 5 condition5	(immediate	area																			
		ence	Activity			_ Turtle	viewing	Fishino	(suspected	poachers)	1	1	Possiblv	poachers	1	Turtle	viewing Turtle	viewing	۱	i	- Turtle-	viewing	
		n Influ	Origi		1	T'dad-	ian	T'dad-	ian		۱ 	1	T'dad-	ian	١	T'dad-	dian T'dad-	dían	1	1	T'dad-	ian	
		Huma	Number		I	7	I	7		ı	I	ł	4		1	2	ę		1		ŝ		<u> </u>
			e Tide		Low	High	No.1	High	1	νο,]	Low	Rising	High		Low	Rising	Low	 ; ,		Ricino	Rising		
		Mood	phase		N.M.	N.M.	N.M.	F.M.		F.M.	F.M.	L.O.	L.Q.	•	N.M.	F.M.	F.M.	 C	· · ·		,		
		Average	width	·,	3' 7"	2' 11"	۱ :	3' 6"		4'2"	3' 5"	3' 6"	3' 10"	. i	0	31 6"	3' 7"	 c	31 9"	3' 11"	3' 10"		<u> </u>
•		Average	length		6' 1"	5' 1"	I,	5' 4"		51 6"	51 0"	512"	51 2"		 ,	.0	" "			1 2"	- 2"		
-	 		Carcases ²	5 (Day-time)		2	 	0		0	0	0	0		2	ۍ س	10	2	0	0	0		
		tles seen ¹	Did not lay		0	0	0	0		F-1	5	0	e		0	4	0	0	0				
		of Turi	Laid		4	Ч	0	5		2	e	1	2	c	5	en	ę	0	2	2	1		
		No.	Total		4	-	0	2		m	Ś	-	ŝ	¢	5	7	en	0	2	e	7		
			Date	22/4/85	24/4/85	26/4/85	27/4/85	1/5/85		4/5/85	8/5/85	10/5/85	16/5/85	10/5/05	C8/C/61	2/6/85	4/6/85	10/6/85	5/6/85	14/6/85	5/6/85		
		•	Location	Fishing	Pond													<u>.</u>			<u></u>		

TABLE 1 Cont'd.

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	s,												- 28 -	•
	Remark													
Beach	(immediate area)											 		
9	Activity	١	Turtle viewing	-op-	-op-	-op-	-op-	-op-	۱					
Influen	Origif	I	T'dadiar	-op-	-op-	-đô-	-op-	-op-	ı			 		
Human	Number	1	4	ę	6	ω	15	2	I		69			
	Tide	Rising	High	High	Rising	1	Falling	High	Low	-		 		
	Moon ³ phase	F.Q.	F.Q.	F.Q.	F.M.	F.M	г.9.	г.Q.	F.M.			 		
	Average width	31 5"	3' 7"	3' 7"	3' 11"	3' 8"	i	3' 8"	ı		31 6"			
	Average length	5' 1"	5† 3"	5'0"	5' 6"	5' 1"	I	5' 0"	I		5' 3"			
	Carcastes	0	0	0	0	0	2	0	2		30			
-	tles seen ¹ Did not lay	4	£	4	0	0	1	0	gs observed		24			
	of Tur Laid	7		7	-	2	0	-	tchlir		45			
	No. Total	11	4	11	ч	2	н	1	22 Ha		69			
	Date	23/6/85	28/6/85	29/6/85	5/7/85	5/7/85	8/1/85	13/7/85	3/8/85		24			
	Location	Fishing				. –					TOTAL			

TABLE 1 cont'd.

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4	Remarks	• •	; Salibia Some Dast.	-29-
an a	Beach 5 condition (immediate area)	na charain i i constante a ganza de constante de constante de constante de constante de constante de constante	North Coast East Coast. n the West C	
	ce Activity	Crab catching -do-	(5) in the the South wksbill) i	
	n Influen Origin ⁴	T'dadian -do-	s Beach re (2) in Bay (4 Ha	nationals
	Humai Number	F 17	6 Las Cuevas Layaguayan	likely be
	Tide	Low	(1), I (3); Gunge	1 most
Cont 1 d .	Moon ³ phase	 	as Beach e Beach ; and at	with a not -
ABLE 1	Average width	1.08 M A 4.1 M	3' 7" therwise at Maracc , Ortoir th Coast	bers
	Average length:	146 M 159 M	4' 8" stated o bbserved Beach (6) n the Sou	
	Carcasses ²	3 (Day time 1 1	5 except wher s were also Manzanilla Moruga (1) j	in is undeter
	es seen ¹ Did not lay	0 1	1 back Turtle back carcass h East Coast t Quinam (1)	tere the orig
	f Turtl Laid	1 7	3 leather eather- he Nort nets a	arter n uarter on. that wh
•	No. o Total	7 7	4 to the 1985, 1 1985, 1 ught in	Last Qu New Moo First Q Full Mo issumed
n 19 - Hart Charles an San	Date	17/4/85 22/5/85 23/5/85	3 Refers During Beach (were ca	IL.Q F.Q It is
!	Location	Grande Riviere	TOTAL 1. 2.	ю. 4 ,

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- 5.—Beach conditions at Matura Beach were more or less stabilised (cessation of sand-mining) except for the problem of beach litter/debris at various points along the beach.
- -Fishing Pond beach condition was favourable especially to the North, except for certain areas littered with beach debris and other areas with small pebbles/stones.
- -Grande Riviere is a relatively small stretch of beach just off the secondary road and is affected by recreational activities; stray dogs and corbeaux (Coragyps atratus).

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TABLE 2 DATA COLLECTED FOR 1986

	emarks	atherback is observed.	awksbill	. Orosco.		300.		tle did not	due to ter. Orosco	ncon & nero 10 old	sts.	8	8		8	8	8	co on formd	nercace Rectace	-31	-
	t i			yel yel		ğ		F.	lay Lit	ered Ri	38		20		Sond Sond	Sond	Dros	Sond Sond			
Beach	(Immedia Area)	Clear and Wide				Heavily	littered	þ		Wide & littu		þ	Sent- littered		Wide	Clear	Sent- Littered,	Clear			
e	Activity	Turtle Viewing	1			Intle	riewing	ę		I		Turtle- viewing	6		Nurtle- dieving and	Pishing	þ	þ			
Influenc	Origin	USA, T'dad				Undeter-	mined	þ		. 1		Undeter- mined	þ		ł	þ	-b-	-bp			•
Human	Number	9				9		e		I		8	18] 3	Ĵ.	9	4	22	45			
	Tide	Low				Rising		Rising		MOT		ΓOW	High		MOT	MOJ	M	MOL			
Moon Moon	Phase	а				W		M		S.		M	a		ž	¥	£	£			
Average	Width	3'6"			``	3'6"		ı		3'7"		3'8"	4'2"		3'4"	3'3"	313"	3'4"			
000001	Length	6'0'				5'3"		ı		6'1"		5'C'	4'9'		5'1"	5'4"	4'6"	5'0'			
en 1	Carcasses	1				1		ı		1		I	I		1	1	I	I .			
furtles Se	Did Not	(91 I				I		-		l		1	I		I	t	1	 - -			
o. of]	Laid	1						1		ę		e	9		2	2	-	1			
N	Total					-		1		e		e	9		5	2		2			
	Date	86.04.02		<u> </u>		86.04.11		86.04.11		86.04.15		86.04.25	86.05.01		86.05.07	86.05.09	86.05.16	86.05.17			
	Location	Matura	Beach			(0008C0	and	Beaches)													

	Remarks	I	Orosco	Drosco(3 Laid) Rincon(101.5(d)	, , , , , , , , , , , , , , , , , , ,	l'usco	Orosco	3 old nests. Orosco	Prosed Hatchling	Omern	28 Hatchlings	scar direguig. 85 Hatchling Tracks.		- 32-	
Beach	- Condition (Immediate	Littered	Clear and Wide	Orosco Semi Littered	Rincon clear	Littered	littered	Heavily	Littered	ŀ					- [
ce	Activity	Turtle	Turtle Viewing)	Turtle	viewing -do-	þ	þ	þ						- [
n Influen	Origin ³	Undeter- mined .	Forest Officers	Undeter- mined -	Indeter-	paria de la	þ	þ	Univ. of Durdee	Scotland -					
Humai	Number	2	4) 3 1	I	ম	Ś	14	ព	15	1			ŝ		-
	Tide	High	alling	Rising	Rising	High	High	Rising	ltigh	Non					-
2 Moon	Phase	Æ	W	W	£	M	Æ	ğ	ß	g					-
Average	Width	3'8"	1	i	3'4"	3'8''	1	3'2"	1	1			3'6"		_ •
Average	Length	5*4"	ł	1	4'11"	513"	1	4,6,	I	1			5'1"		-
en 1	Carcasses	1	I	I	1		1	1	1	J			, O		-
Turtles So	Did Not Lay	П	F-1	2	1	1	1		1	1			7		
vo. of	Laid	m	1	18	ო	Ś	1	1	1	1			ន	·	_
~	Total	4		କ୍ଷ	ო	ŝ	1		I	1			57		-
	Date	86.05.21	86.06.05	86.06.07	86.06.20	86.06.24	œ.u.æ	86.07.03	86.08.12	86.08.28			18		_
	Location	Matura Beach	(Urosco & Rincon Beaches)		1								TOTAL		-

TABLE 2

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TABLE 2 CONTINUED

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	Remarks	1	115 eggs laid by 1 Leather- back turtle.		T	These 4.	carcasses recorded before	•	1		1	ł	I	Die nest observed to be Poached.	33 I
Beach	 Condition (Immediate Area) 	ł	Clear	Clear	I	Littered		Littered/sand too connected	Littered/sand	oo compacted	lide & Littered	ide&Littered	ittered	ittered	Clear
nce	Activity	Possibly Slaughtered Turtle	Turtle Viewing	ł	Turtle Viewing Posstibly Slaughtered turtle.	Fishing		Turtle Viewing	Turtle	Viewing	1	1	Turtle Viewine	4	þ
n Influe	Origin'	Undeter- mined	\$	þ	Trinidad Undeter- mined	Trinidad		Undeter- mined	Undeter-	mined	t	I	Undeter- mined	þ.	þ
Huma	Number	5	œ	27.	4) 1 3	1		4	16		1	t	6	æ	Ś
	Tide	l	High	High	High	Low		low	Low		Low	Low	High	High	Low
2 Moon	Phase	W	õ	Æ	£	F		Æ	Æ		Æ	ន	£	Q.	W
Average	Width	2'10''	3'5"	34" 、	I	3'5"		1	I		317"	3'6''	318"	3'4"	3'8'
Average	Length	6'2"	4,10,	4'10"	1	6'5"		I	i		510"	5'1"	4,8"	4'11"	5'0'
en 1	Carcasses	(1-recent)	I	1	(1- recent)	4		1	1		1			I	1
Turtles So	Did Not Lay	1	I	T	I	1		. 2	2		I	I	I	~ 1	I
lo. of	Laid	i	-	1	I	-		1	1			ر	9	г.	5
	Total	1		1	1			2	2		1	n	9	5	7
	Date	86.04.11	86.04.17	86.04.27	86.05.15	86.05.21		86.05.23	86.05.23		86.05.27	86.06.02	86.06.13	86.06.13	86.07.09
	Location	Fishing Pond													

a the factor

	Remarks	i	1	1	Cercase-possibly two weeks old.	1 Olive Ridley Carcass fourd entangled in debris.		une Leather- back nest was observed with its contents removed.	I	5 recent nesting siteswere observed-Guay.	١		34-	
Beach	(Immediate Area)	Clear	Littered	I	I			t	I	Clear	Clear	Clear		
9	Activity	1	Turtle	Pflurtle Viewing	10 Grah catching -	<u></u>		ı	ı	1	1	1		
Influen	Origin ³	ŀ	Undeter	þ	I				I	1	ı	I		-
Humar	Number	ı	8	17	I			1	ı	I	1	1		
	Tide	Low	Ì.ow	low	Low		601	1	Low	Low	low	Low		
Moon	Phase	N.M.	æ	WN	Æ			£	¥	Ğ	a	W		
Average	Width	319"	3'11"	I	I		3'7'	ł	ł	ł	I	I		
Average	Length	1,6,7	5'1"	1	i		4'11"	1	I	I	I	١	- ·	
en 1	Carcasses	1	1	I	1		7	ł	I	1	1	ł		
Turtles Se	Did Not Lay	2	2	1	I		6	I	1	1	1	· 1		yaguayare)
0. of .	Laid	4	I	ı	1		ิล	I	1	Ś	I	1		5(0.1
Z	Total	6	2	I	1		ୟ	l	1	1	1	1		
	Date	86.07.09	86.07.18	86.08.07	86.08.21	୫. ୫	IJ	86.04.20	86.04.08	86.05.16	86.05.28	86.06.06		5
	Location							Manzanilla and Guayaguayar						

CONTINUED

TABLE 2

a program indiana

		Remarks	1				6 nests were vandalised by does and	corbeaux. · 3 hawksbill nests seen	Hawkshill Carcass			- 3 <u>4</u>
	Beach	- Condition (Immediate Area)	j			Clear and Wide						
	ce	Activity	1	-		I					•	
	n Influen	Origin	ł			1						nationals
	Humar	Number	I			ł					ch.	t likely b
		Tide	low			ğ	I				viere Bee	will mos
	2 Moon	Phase	Ŵ	•		ਬ	1				Grande Ri otherwise	e persons
	Average	Width	, s.		,						ig Bay near Mere stated	amined, the
	Average	Length	1								served at Bi Lle except v	in is undete
1		Carcasses	2 (3 dome 214)	(mo sken c)	2	1 rec. slavgiter	I			1	ass was also ob leatherback turt	arter n Narter on that where origi
Turtles S		Did Not Lay	ı	i		I				•	herback carr fers to the	 Last Q New Moc <l< td=""></l<>
io. of	5	Laid	ì	ł							l Leat	. 2. 2. Færðæri
		Total	4 nests	6 nests	01	5 nests	27 nests			8	*	
	•	Date	86.05.10		1	8. A. B	86.05.22	<u> </u>		2		
		Location	San Souci	Toco Beache	TOTAL	Grand Riviere		<u></u>		TOIN		

(Continued) TABLE 2

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 TABLE 3

 DATA COLLECTED FOR 1987.

	Remarks	<pre>1 Turtle with tag T1184 (Florida) 2 nests </pre>	eggs).		I				30 cars observed.	-Scattered debris on beach -1 nest wash- ed away, 5 eggs re- located.
Beach condition	úmmediate area)	Clear and suide	:		Clear & wide	Clear			Clear	Clear and flat
	Activity	Students observin & record ing in- formatio	Turtle viewing	•••	Turtle viewing	Turtle viewing Fishing	Turtle viewing& Research	-op-	Turtle viewing	Turtle viewing
Influence	Origin	U.W.I.	Local & Foreign		Unidenti- fied	Unidenti- fied - do-	50-E.C.I. A.F.	20-U.W.I.	identified	Unidenti- fied
Human]	Number	35	63		35	м v	225			61
<u>+</u>	Tide	Rising			Rising	Rising	Low			Low
Moon	phase	N.M.			F.Q.	F.Q.	F.M.			г.д.
Averaoe	width (m)	i			1.18	1.1	1.13			1.12
Averaoe	length (m)	ł		•	1.61	1.44	1.56			1.5
	Carcasses	. 1			I	I	1			I
tles seen	Did not lay	2			4	ч	I			
of Tur	Laid	2			ω	4	11			ν
No.	Total	6			12	ν	11			Q
	Date	24/4/87			8/5/87	8/5/87	15/5/87			23/5/87
	Location	Matura Beach					<u> </u>			

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TABLE 3 cont'd.

	Remarks	nest re- cated-too ar water-	mediately ter sting.					I .	1	-	-37 -
 Beach condition	(immediate area)	Clear -1 lo	im af ne					I	Clear		
 nce	Activity	ch Turtle viewing	Turtle e viewing	-op-		-op-	Turtle viewing	-op-	.Turtle viewing	-op-	
an Influe	Origin	40-Corin Teachers College	5 -Univ. of Dunde	4-Ethio-	pia, Holland, Belgium,	21-T'dad ian	-St.An- drevs Pres. Church.	-Piarco Village Sport & Cultural Youths.	52-U.W.I students	26-Un- identi- fied	
Hum	Number	70					Amt. not noted.		78		
	Tide	Low					ı		Rising		
W	phase	N.M.					F.Q.		F.M.		
	width (m)	1.14	,				ı		1.12		
	length (m)	1.49					t		1.62		
	Carcasses	l					1		1		
tles seen [.]	Did not lay	1					FI .		I		
of Tur	Laid	و			100 ⁻¹¹		10		9		
No.	Total	7					11		9		
	Date	28/5/87					7/6/87		12/6/87		
	Location	Matura Beach									

TABLE 3 cont'd.

	Remarks	-35 Hatchlings observed	-Beach severzly eroded by waves.	I	i				Gentle slope at one nesting site.	-Hatchling trackobserved	-One Hatchling dug out (live)	-57 Hatchlings observed	- One nest washed away, w eggs scattered. 1	
Beach condition	(immediate area)	Clear		Clear	Clear				Clear	Clear		Clear &wide		
e	Activity	Turtle viewing		Turtle viewing	-op-	ia -do-	an -do-	- op -	-Turtle viewing	Turtle viewing		Turtle viewing	Fishing	
Influence	Origin	Uniden- tified		Uniden- tified	3-Holl- and	1-Ethiop	1-T'dadi	5-Uniden tified	Unidenti fied	Uniden- tified		-Uniden- tified	4-Uniden tified	
Humar	Number	57		70	g 10				£	2		23 19		
	Tide	Low		High	Fallin				High	Low		Rising		
Moon	phase	г.д.		L.Q.	N.M.				N.N.	F.Q.		F.M.		
Average	width m)	1.13		1.12	ı				1.12	1.21		1.12		
Average	length m)	1.59		1.57	1				1.52	1.58		1.57	•	
	Carcasses	ì		1	ł				I	i		I		
les seen	Did not lay	-1		I	ł				2	i		1		
f Turt.	Laid	2		2	2				n	ო		S		
No. o	Total	Q		2	2				4	en		9		
	Date	17/6/87		18/6/87	26/6/87				28/6/87	2/7/87		10/7/87		
	Location	Mátura Beach												

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TABLE 3 cont'd.

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	Remarks		1	-10 Hatch-	LING Fracks seen.	Dug-up nests for hatch-	lings :- #1-25 dead,	3 alive, 1 track. #2-2 tracks	l alive. #3-11 alive	Observed: (4-20 emerged	rescued from	5-exposed eggs,		-39-
	Beach	Condition (Immediat Area)	Clear + mid	Clear &	MOTIBII	Littered, steep	slopes,re- duced beach front						 	
	ce	Activity	Turtle	viewing -do-	op	Camping & Fishing							 	
	Human Influen	Origin -	Univ. of	Dundee 4-T'dad-	3-Bel- gium	Uniden- tified							 	
		Number	7	7		2						*		
	Tide		Falling	Falling		NO							 	
	Moon Phase		г.д.	N.M.		F.M.						.	 	
	Average	Width (m)	1.14	` I		1.2							 	
	Average Length (m)		1.54	1		1.6						*****	 	
een		Carcasses	ł	I		I							 	
Turtles S	TA NET	Lay Lay	I	I		I							 	
No. of	1 244	птрл	و			7		<u> </u>					 	
	Total	TOLOT	Q	н	(2		<u> </u>					 	
	Date		15/7/87	29/7/87	-0,0,7	0/8/8/							 	
	Location		Matura Beach										 	

TABLE 3, cont'd,

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		Remarks	Nest#1-35 Lracks seen . Nest #2-28	Lacus seen. Nest #3-25 tradis seen. Nest #4-20	tracks seen. Nest #5-20 tracks seen. Nest #6-34 tracks seen.	<pre>Nest #1-1 alive 1 track obser- Nest #2-1 Nest #3-23 Nest #3-23 I alive(dug-up nest). Nest #4 -5 tracks. left#5-2 live dug-up,rest deed. Nest #6-1 alive</pre>	- 40 -
	Beach	Condition (Immediat Area)	Semi-littered			1	
	1 Influence	Activity	4-Turtle viewing 2- Fishing			(one family) Turtle viewing.	<u>.</u>
		Origin	Uniden- tified			tified tified	
	Humaı	Number	Q			4	
	Tide		Low			Risting	
	Moon	Phase	L.Q.			M. N	· · ·
	Average	Width	I			1	
	Average Length		I			1	
een		Carcasses	1			1	
Turtles S	:	Did Not Lay	ŀ			1	
lo. of		Laid	I			1	
	T. + . 1	TOCAL	I			1	
	Dato	קסרב	14/8/87		5		
	Location		Matura Beach				
TABLE 3 Cont & TABL

		Remarks	No hatchlings observed.		5 nests observed 17 hatchling tracks seen,	9 nests observed,2 poached for eggs. 1 carcaes seen. 3 Camps des- troyed.	-41 -
	Beach - Condition (Immediate Area)		Heavily littered		1	l	
	ce	Activity	Turtle viewing		Pistúng		
	n Influen	Origin	Unidenti- fied		T'dadian	1	<u></u>
	Humai	Number	'n	777	No number recorded.	I	
		Tide	Risting	-	I	Rising	
cont d	Moon	Phase	N.M.		F.Q.	F.Q.	
TABLE 3	Average Width (M)		ł	1.15	1	I	
	Average	Length (m)	I	1.55	1	I	
	een	Carcasses	I	~	I	-	
•	Turtles So	Did Not Lay	1	+:	I	l	
	lo. of	Laid	l	86	• •	1	
	~	Total	I	99	I	1	
·.		Date	28/8/87	 20	22/2/87	7/4/87	
		Location	Matura Beach	TOTAL	Fishing Pond		

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TABLE 3 Contrd.

		Remarks	1		ł	4 nest sites	observed. Day-time ass-	essment-15	carcesses counted &spray	painted. Note-17 car-	casses recorded to this date.	1	_			- 42	2	
	Beach	Condition (Immediate	area / Clear	_	Clear	Littered	ı			lear & wide								
	lce	Activity	18-Fishing	Probably	poachers.	Turtle	Витматл			Fishing C		,						
	n Influer	Origin	Uhidenti- fied	Uhidenti-	fied	ł	1			Inidenti-	tied							
	BLINH	Number	37	8		7	1			2		1		<u> </u>	29			
		Tide	Rising	Rising		Rising	Rising			ltigh		Rising						
	Moon Phase		F.M.	N.M.	.,	N.N.	F.Q.			F.M.		N.M.						
	Averace	Width (m)	1.05	1.24		ı	ı			ł		T	-	AVERAGE WIDTH	1.15			
	Average	Length (m)	1.45	1.56		1	ı			1		I			·····			
		sses												AVERA	1.5			
,	Seen	t Carca	4				 21			7				TOTAL ³ CARCASSES	24	Vote-some duplication may have aken place		
	INTTLES	Did No Lay			I	l	I			7		ł		TOTAL DED NOT NEST	4		+	
No. of T	10 . OI	Laid		чл	~	 ו	1			e	<u> </u>	1		TOTAL	12			
		Total	7	Q	<u>س</u>)	1			S		1		TOTAL CAME UP	16			
		Date	16/4/87	28/4/87	30/4/87		4/5/87			15/5/87		18/0/05		VIAL *	89			
		Location	Fishing Pond						_				I	<u> </u>				

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TABLE 3: confid

	Beach • Condition (Immediate Area) Tear & wide Manzanilla		Guayaguayare Day-time evaluation.	Marzarilla Night-time evaluation.				I	l nest dug up Ly dogs. I poached.	ı	Dogs seen eating eggs.	numueus ou eggs exposed due to erosion. Hatchling track observed. I	-43 -	
			Clear & wide	Littered & narrow	Littered & narrow.				Clear & wide	C lear	Clear			
	ce	. Activity		ì					Turtle viewing	þ	i	Clear		
	n Influen	Origin	I	1	1				Unidenti-	Unidenti- fied	1	1		
	Humaı	Number	1	i	ł		1		ŝ	ន	I	I	58	
		Tide	Falling	Falling	Falling				Low	I.cw	Rising	Rising	· · · · · · · · · · · · · · · · · · ·	
	Moon	Phase	F.M.	F.Q.	F.Q.				F.Q.	F.Q.	F.Q.	N.M.		
	Average	Width	I	I	v I				1.21	1.11	1	1.2	51-1	
	Average	Length	1	1	1				1.5	1.53	1	1.57	1.53	
	een .	Carcasses	ł	ī	I				ł	l		FT.	2	
	Turtles S	Did Not Lay	I	5	ñ		ۍ		1	I •	1	٦	-	
	lo. of	Laid	1	4	ŝ		0		e	ω	7	4	22	
	~	Total	1	Q	ω		5	,	e	8	7	5	23	
		Date	14/5/87	4/6/87	1/6/87		- 10		8/4/87	6/4/87	6/5/87	25/6/87	<i>.</i>	
		Location	Manzanilla &	Guayaguayare Beaches,		÷.			Grande Riviere.				TOTAL	

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	Remarks	-2 poached nests observed.	Heports of villagers re- moving buckets of eggs the previous night.	ı		-44-	_
Beach	- Condition (Immediate Area)	Wide & flat		þ			
e1	Activity						-
n Influenc	Origin.	- 1		i .			.
Humai	Number	I		I			
	Tide	Rising		Rising			
, Moon	Phase	F.Q.		F.Q.			-
Average	Width	1.13		1			
Average	Length	1.55		I			
een .	Carcasses [*]	I		i			
Turtles So	Did Not Lay	5		1	2		
ło. of	Laid	E E			; _ດ ໄ		. —
	Total	m					·
	Date	8/4/87		- L&/7/6	2		
	Location	San Souci.			,		_

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TABLE 3. confid

		Remarks		20 Old Nests Observed.	25 nests counted.	108 old nest observed 259 atching tracks beerved, 1 beerved, 1	by dog. ewc. nestring beach).	24 old nests observed.	8 hatchlings served mrvine	l nests bserved	- 45 -	
	Beach	Condition (Immediat(Area)		Clear & Wide	Clear & Wide	Clear & Wide		Clear & Wide	llear & Wide 17	1		
	ice	Activity		Fishing & Observing.	1	ł		1	1	1		
	n Influer	Origin.		Trinkladian	I	ł	•	l	1	1		
	Huma	Number		e	1	I		1	I	ł		
		Tide		Rising	Risting	Risting		Rising	Rising	Rising		
	Moon	Phase		EM	Æ	M		Æ	FM	Μ		
	Average	Width		, }	I	I		1.14m	1.05m	I		
	Average	Length		1	ł .	I		1.58	1.45m	I		-
aan		Carcasses		I	1	ı		I	1	1		
Turtles S		Did Not Lay		I	1	9		1	,	1		
No. of		Laid		S	I	I		2	Ś	1		
		Total		Ś	1	1		e.	9	1		
	•	Date		10/6/87	11/6/87	11/6/87		10/6/87	11/6/87	11/6/87		
		Location	North Coast_ Hike from 10/06/87 - 12/06/87	Paria Bay	Petit Tacarib	Grand Tacarrib		Murphy Bay	Madamas Bay ³	"AZ WEE"		

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- At Fishing Pond, less patrols were conducted since Officers'lives were seriously threatened by poachers. 2.
- The number of carcasses, despite the warning of duplication, could in fact be much greater than the figure given. е,
- As stated previously, the beaches along this coast are inaccessible and provide an excellent nesting habitat (wide, clear, sandy beach) for marine turtles especially the leatherback. 4.
 - 5. Entire Beach literally covered with old nests.

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D . PART 3

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ATTACHMENTS OF ANY OTHER SEA TURTLE INFORMATION

1.	Wildlife Section, Forestry Division (1987).Marine Turtle		
	Management at Fishing Pond with specific reference to the		
	Leatherback Turtle.		App. XIV
2.	James, C. (1983). Highlighting Wildlife, Basic information		
	on Wildlife Conservation in Trinidad and Tobago. The		
	Leatherback Turtle. pg. 41-44.	••••	App. XV
3.	Ramquar, J. (1983). Save the Leatherbacks. In James, C.		
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	Wildlife Conservation in Trinidad and Tobago. pg 50.	• • • •	App XVI
4.	Arneaud, W. (1987). The Leatherback Turtle of Trinidad.	• • • •	App XVII_
5.	Publicity material prepared by Garry De Freitas, Forestry		
	Division's Artist (Cartoons, Posters, Illustrations)	••••	App XVIII
6.	Photograph of a Leatherback carcass	• • • •	App XIX
7.	Photograph of a Leatherback's nest and eggs.		Арр ХХ

APPENDIX I

Excerpts from Proceedings of the 2nd Working Meeting of Marine Turtle. Specialists. IUCN.Bacon, P.R. (1971). Sea Turtles in Trinidad and Tobago pages 79-84.

Paper No. 13

SEA TURTLES IN TRINIDAD AND TODAGO

by P.R. Eacon University of the West Indies, Trinidad

General

Sea turtles are listed for attention in the marine research programme of the Trinidad and Tobago Government but the Fisheries Department has no active programme of study, exploitation or conservation of this resource. The collection of turtle statistics at the various fishing centres is not continued although records are kept in some of the wholesale fish markets.

Information on the sea turtles of Trinidad and Tobago is thus very limited, as it is from most other Caribbean islands, which is one reason why no report from this area was received at the previous meeting of the Marine Turtle Group in 1969. It is only since 1965 that any interest has been paid to turtles in Trinidad and Tobago by naturalists attached to the Trinidad Field Naturalists' Club. The Club, which is composed mainly of amateur personnel, has concentrated on patrols on easily accessible beaches where basic nesting data have been recorded.

Species

Four species are known to nest regularly in Trinidad, which are, in order of abundance,

<u>Dermochelys coriacea</u> - known locally as "caldon or coffinback"; <u>Chelonia mydas</u> - "greenback"; <u>Eretmochelys imbricata</u> - "hawksbill"; <u>Lepidochelys olivacea</u> - "batali".

There is one nesting record for the north coast of Trinidad in July, 1970, which was almost certainly the loggerhead <u>Caretta caretta</u>. This species is seen frequently by fishermen off the north coast but was not known previously to nest in the island.

To date, only the leatherback, green and hawksbill turtles have been recorded in Tobago.

This report contains the personal views of the author and does not necessarily represent the view of the Trinidad and Tobago Government. Nesting areas

Fig. 1: Map of the islands of Trinidad and Tobago, showing the main



Most of the nesting is confined to the north and east coasts of Trinidad, where almost any beach of any size has been used during the last few years. Absence of nesting on the south coast is probably due to the presence of steep cliffs with little sand below, while the west coast is predominantly muddy with coastal mangrove swamps.

Nesting has been studied in greatest detail on Matura beach on the east coast as this is readily accessible. This beach is probably the most important nesting area for leatherbacks. The green and hawksbill turtles nest mainly on the north coast and around islands between Trinidad and

Venezuela, where these species can be seen feeding and resting during In Tobago, leatherback nesting appears to be confined to the more sandy

leeward coast, especially near Plymouth, Green and hawksbill turtles nest in small numbers all round the island and small individuals can be seen

feeding in the reefs throughout the year.

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Relative abundance

Except for Dermochelys, no data are available on the numbers of sea turtles nesting each year in Trinidad or Tobago, or on the numbers killed on the beaches or at sea.

The leatherback mesting population for the whole island of Trimidad is estimated at from 200 to 250 mature females each season, with about 50% br this centred on the east coast at Matura Day. The Tobago population numbers only a few dozens. Compared with the nesting populations of neighbouring Guyana and Surinam, the Trinidad and Tobago turtle populations are very small. They are, however, probably larger than those of most other Caribbean islands, few of which have all five species nesting.

Exploitation

Little accurate information is available on the degree of exploitation. All turtles seen nesting on the north coast beaches are killed by local villagers and a large number of immature ones are taken in beach seines. A sufficient number of greens and hawksbills are caught at sea off the north coast to keep about 20 pirogues occupied during April, May and June. None of the fishermen is entirely dependent for his livelihood on harpooning and netting turtles as, during this period, ordinary fishing is neglected. All the meat and eggs are used for home consumption of find local markets. A number of hotels, especially in Tobago, also purchase turtle meat and green and hawksbill shell is sold locally.

Conservation

Legislation 1.

At the present time the Protection of Turtle and Turtle Eggs Regulations, 1952, are in force (see Annex). As will be noted, these regulations under the Fisheries Ordinance prohibit killing of turtles, removal of eggs and the sale of meat or eggs only from the 1 June to the 30 September in any year. They are, therefore, very unsatisfactory as the sea turtles are not protected during April and May when most of the nesting takes place.

The Fisheries Department, under whose auspices turtle protection falls, does not have wardens to patrol beaches or visit fishing centres. Law enforcement falls, therefore, on the civil police who are already overburdened. The Fisheries Department does not have representation on the Wild Life Conservation Committee which advises the Government through the Ministry of Agriculture, Lands and Fisheries. The Forestry Department is represented, however, on this advisory committee and their game rangers have been assisting the Field Naturalists' Club over the past few years. The game rangers can exercise their authority only during the close season for the

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hunting of animals on land, thus giving some protection to turtles on the beaches from 1 April to 30 September. Administrative confusion of the nature indicated by the situation greatly hampers progress in turtle conservation.

2. Education

During the last three years lectures have been given to schools, clubs and societies in both Trinidad and Tobago on the need to conserve turtles. Propagenda of this sort has met with a warm response and large numbers of interested persons have accompanied beach patrols - making things more difficult for the poachers.

Research

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Up to the present time research has been concerned almost entirely with <u>Dermochelys</u>. For this species, the nesting season is from March to August, possibly September, with most nesting taking place in April, May and early June. The majority of the nesting females emerge from the sea between 9 p.m. and midnight, spending about one and a half hours on the beach. The dimensions of the nesting females do not differ significantly from those recorded elsewhere - mean carapace lengths for all <u>Dermochelys</u> measured on Trinidad beaches from 1968 to 1970 was 158 cm with a range from 125 to 185 cm. Carapace widths averaged 106 cm with a range of 75 to 121 cm.

Tagging was begun in 1970. From the 16 leatherbacks tagged on Matura beach there were two tag returns indicating re-nesting intervals of 10 and 11 days respectively.

Small round holes through the fore flipper of nesting females have been seen commonly in Trinidad leatherbacks. Three of the 16 animals tagged on Matura beach in 1970 had these holes. These may be holes left after old tags have fallen out - which would indicate that the animals had come from other nesting areas where tagging had been carried out before 1970.

Other records for <u>Dermochelys</u> include clutch sizes from 65 to 130 eggs; Adults observed eating the jellyfishes, <u>Physalia</u> and <u>Stomolophus</u>, in coastal waters; the high incidence of fresh injuries on females arriving at the nesting sites; the presence of the commensal barnacle <u>Platylepas</u> on the carapaces and limbs; and the great loss of eggs due to beach erosion - especially at the start of the wet season in early June.

Intended research

Seach patrols will be continued throughout 1971. One group will concentrate on Matura beach to collect further data on leatherbacks and others will work on the north coast to gather data on the nesting of the other species. During the 1971 mean we infinit to seek the services of a fisherman from the Fisher by method out. Toto to collect turtle exploitation statistics. It would accorde to receive the date and location of all turtles caught at See, mentode and weight the netform they were shaughtered and follow the meak the of the meat Time they fishermen and villagers he could obtain to be recting doing a red time to would be possible from this information to be the mean of conclusions on turtles, at least in this area, there is necessary beyond discussions on turtle conservation in Trinidad that Tobay an proceed further we approaching various local organizations for funds for the project - which can be carried out better by someone resident in the north than by any members of the Field Naturalists' Club visiting the area in their spare time.

Further lectures to schools are planned for 1971, although it will not be possible to reach many districts. Funds are required urgently for the printing of literature for distribution to schools and village community centres.

At the end of the turtle nesting season we hope to advise the Trinidad and Tobago Government on the revision of the laws to give adequate protection to all species during their breeding period. It would help greatly to know what other territories, particularly in the Caribbean, are doing in this respect to protect similar small populations of sea turtles.

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Government Notice No. 192

TRINIDAD and TOLAGO

Regulations made by the Governor in Council under Section 3 (1) (c) of the Fisheries Ordinance, Ch. 25. No: 9.

1. These Regulations may be cited as the Protection of Turtle and Turtle Eggs Regulations, 1952.

2. It shall not be lawful for any person between the 1st day of June to the 30th day of September in any year to take or remove or cause to be taken or removed any turtle eggs after they have been laid and buried by the female turtle or after they have been buried by any person.

3. It shall not be lawful for any person between the lst day of June to the 30th day of September in any year to be in possession of or to offer or expose for sale, or to cause to be offered or exposed for sale, or to purchase turtle eggs.

4. It shall not be lawful to catch, kill, or harpoon or otherwise take possession of any turtle or to offer or expose for sale or cause to be offered or exposed for sale or to purchase any turtle or turtle meat between the lst day of June to the 30th day of September, of any year.

5. These Regulations shall not apply to turtles, turtle meat or turtle eggs lawfully imported into the Colony. Provided that the onus of proving that the same was lawfully imported into the Colony shall be on the person alleging the same.

6. Any person who contravenes these regulations shall on summary conviction be liable to a fine of Forty-eight Dollars or to imprisonment for two months.

7. The Protection of Turtle and Turtle Eggs Regulations, 1951 are hereby repealed.

Dated this 14th day of October, 1952.

W.S. ARCHER Acting Clerk, Executive Council

Approved by resolution of the Legislative Council this 14th day of November, 1952.

G.E.L. LAFOREST . Clerk, Legislative Council

APPENDIX II

Pritchard, P.C.H.(1984) Marine Turtles in Trinidad and Tobago. Report on a Consultancy to the Food and Agriculture Organization for preparation of plans for the management of marine turtles.

MARINE TURTLES IN TRINIDAD AND TORAGO

Report on a Consultancy to the Food and Agriculture Organization (FAO) for preparation of plans for the management of marine turtles

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> > 1984

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ACROWNEDCHEMENTS

The Consultant wishes to record his sincere thanks to John Bindernagel whose interest resulted in this FAO marine turtle Consultancy; also to Michael Smart and his staff of the FAO office in Port-of-Sprin for many courtesies.

Dr. Carol James of the Trinidad and Tobago Forestry Department was a source of never-failing encouragement and assistance, and many members of her staff rendered invaluable help with the field work; among these, special mention should be made of Nadra Nathai Gyan and Foresters Singh and Lendore for accompanying me on the three-day foot patrol from Blanchisseuse to Matelot. My colleague Lori Chu Cheong of the Institute of Marine Affairs took a major interest in the Consultancy from its inception, and helped in innumerable ways. She also kindly served as volunteer observer on the aerial survey of the mainland coast, and invited the Consultant to join her on helicopter surveys of the Trinidad and Tobago coastline, utilizing aircraft generously made available by Trinidad/Tobago National Security.

Molly Rowena Gaskin, who serves with the Consultant on the Wider Caribbean Sea Turtle Recovery Team (WIDECAST), kindly shared many ideas, suggestions, and data on the marine turtles of Trinidad and Tobago.

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The loggerhead turtle, <u>Caretta caretta</u>	
Literature cited	

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MARINE TURTLES IN TRINIDAD AND TOBAGO

BACKGROUND

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The marine turtle fauna of Trinidad and Tobago is more diverse than that of most Caribbean islands, and has been unusually well stildied since the 1960's. Initially these studies were conducted by volunteer patrols organized by the Trinidad Field-Naturalists' Club. In recent years, detailed surveys of both nesting and non-nesting marine turtles in Trinidad and Tobago have been conducted by the Institute of Marine Affairs, while visitors such as A. Carr and A. Meylan have also added to knowledge of marine turtles in the country,

Important publications (scientific and popular) and research reports relating to the marine turtles of Trinidad and Tobago include those listed below (in chronological order).

i) R. M. Ingle and F. G. W. Walton Smith. 1949. Sea turtles and the turtle industry of the West Indies, Florida, and the Gulf of Mexico, with annotated bibliography. Spec. Publ. Marine Lab. Univ. Miami, Florida. Univ. of Miami Press, Miami, 107 pp. (Leatherback breeding season May-June in Trinidad).

ii) A. F. Carr. 1956. The Windward Road. Alfred Knopf, New York, 258 pp. (Describes northern coast of Trinidad and interviews with fishermen; reports the "batali" (Lepidochelys olivacea) for first time from Trinidad).

111) P. R. Bacon. 1967. Leatherback turtles. Jour. Trinidad Field Naturalists' Club, 1967: 2-3. (A brief summary of the presence of nesting Dermochelys in Trinidad) iv) F. B. Bacon. 1969. The leatherback furth project. Jour. Trinidad Field Naturalists Club, 1967: 8-9. (An uplate of Bacon (1967), with reports of nesting in 1967 and 1968 and recommendations for observation).
v) P. R. Bacon. 1970. Studies of the leatherback furthe, <u>Dermodualysi</u> <u>covisional</u> (E.) in Trinidad, West Indies. Biol. Conserv. 2 (3): 213-217.
(General description of the nesting colory, with description of nesting adults, summary of breeding season (March to August) and identification of nesting on north and east coasts, especially at Paria and Matura Braches! Estimated the nesting colory as numbering "considerably more than 100 per year" at Matura alone, and 150-200 nesting annually in Trinidad as a whole. Documents slaughter of 23 nesting adults at Matura Bay in 1968, and 13 in northern section alone of Matura in 1969).

vi) P. R. Bacon and G. K. Maliphant. 1971. Further studies on sea turtles in Triaidad and Tobago with a guide to the common species and their hatchlings. Trimidad Field Naturalists Journal, 1971: 2-17. (Nesting was reported at Matura, Cumana, and Balandra on east coast, and at Big Bay, Toco, Paria, Valentine's, Gran Murphy, Petit Tacarib, Gran Tacarib, Madamus, Cachipa, and Las Cuevas on north coast. Dimensions of adults and timing of nesting were discussed. Eature nesting population estimated at 90-120 females per year; an average of 1.5 nestings per night was recorded on the northern section of Matura. The total Trimidad population was estimated at 500-600 female <u>Dermochelys</u>, with 200-250 nesting in a given year. Regular nesting was discovered at Grafton Estate, Tobago (up to 5 per night). Summe data are presented for the other sea turtle species in Trimidad, including a nesting record for <u>Lepidochelys</u> at Matura and also one for <u>Caretta</u> at Las Cuevas. However, photograph shows the latter to be a hasksbill (<u>Eretmochely</u> An identification key to Trimidad sea turtles in provided.)

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4 -60vii) P. R. Bacon. 1973. The status and management of sea turtle resources of Trinidad and Tobago. Report to the Permanent Secretary, Ministry of Agriculture. 40 pp (mimeo). (Summarizes available information on sea turtles in Trinidad and Tobago. Fragmentary statistics for turtle meat sold on boaches at Leacos, Carenage, San Fernando, Matelot, Grand Chemin, and Mayaro are listed. Author estimates that 30% of the nesting females at Matura are killed annually, and nearly 100% of turtles nesting on north ceast adjacent to villages. Existing protective legislation is summarized, and strong recommendations are given for improved law enforcement. It is also recommended that turtle sanctuaries be declared at Paria and Matura).

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viii) P. R. Bacon. 1973. Appraisal of the stocks and management of sea turtles in the Caribbean and adjacent regions. Report to CICAR meeting in Cartagena, Colombia, July 1973. (A brief summary of the Trinidad turtle situation; turtles and eggs protected only between June 1 and September 30 under 1952 regulations. Annual catch in Trinidad waters probably over 50,000 pounds. Regulations not enforced).

ix) T. P. Rebel. 1973. Sea turtles and the turtle industry of the West Indies, Florida, and the Gulf of Mexico. Univ. Miami Press: 250 pp. (A book-length revision of Ingle and Walton Smith (1949). Sea turtle landings for 1969 in Trinidad given as 11,747 pounds. Quotes information from Bacon and summarizes regulations).

x) P. C. H. Pritchard. 1973. International migrations of South American sea turtles (Cheloniidae and Dermochelidae). Anim. Behav., 21: 18-27. (Lists several Trinidadian and Venezuelan tag recoveries for female <u>Lepidochelys olivacea</u> tagged while nesting in Surinam).

xi) P. R. Bacon. 1975. Review of research, exploitation and management of

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the stocks of sea turtles in the Caribbean region. FAO Fisheries Circular No. 334: 19 pp. Mimeo. (Summarizes information from above sources; also reports that the Society for the Prevention of Cruelty to Animals in Tobago offered rewards of \$50FF to persons ensuring that nesting turtles returned safely to the sea. Rewards increased to \$75 in 1974, and many turtles were protected in this way).

xii) P. C. H. Pritchard. 1976. Post-nesting movements of marine turtles
(Cheloniidae and Dermochelyidae) tagged in the Guianas. Copeia, 1976: 749-754.
(Eight Trinidanian recoveries of tagged Surinam L. <u>olivacea</u> reported, as well
as 4 from Isla Margarita and 13 from eastern Venezuela).

xiii) P. R. Bacon. 1976. Follow the turtle star. Trinidad Naturalist, 1 (3): 12-16. (A popular account of leatherback nesting in Trinidad. Includes folklore accounts of how turtles nest when the turtle star is shining, and that the leatherback turtle is the "doctor turtle" which is visited by other turtles when they are sick).

xiv) P. R. Bacon. 1981. The status of sea turtle stocks management in the western Central Atlantic. WECAF studies No. 7, UNDP. 1-38. (Summarizes nesting and foraging locations for each sea turtle species in Trinidad and Tobago. Estimates 400-500 total female <u>Dermochelys</u> in 1972 in Trinidad, 800-1000 in 1975. Only sanctuary is Buccoo Reef Marine Park in Tobago; proposed sanctuaries at Matura and Paria, Trinidad. Summarizes regulations, including ban on taking any female turtle within 1000 feet of shore, and complete protection of eggs).

xv) A. F. Carr, A. Meylan, K. Bjorndal, and T. Carr. 1982. Surveys of sea turtle populations and habitats in the western Atlantic. NOAA Technical Memorandum NMFS-SEFC-91. Pp. 1-82. (Reports nesting of two green turtles at Mayaro, and also a hawksbill at Brigand Hill (i.e. Manzanilla Beach). Also

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6 - **62-** reports hawksbill nesting on Tobago, and dead leatherbacks on beaches of Tobago in 1977. Important migratory route for turtles along northern coast of Trinidad. Turtle populations in general seriously depleted following heavy exploitation).

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xvi) L. Chu Cheong. 1984. (Mimeographed summary of a three-year study of Trinidad sea turtles. Gives extensive information on nesting beaches, census of nesting animals, beach dynamics, market surveys and fisheries statistics, laboratory hatching and hatchling nutrition studies, and head-starting of hawksbills. Data presented in summary form at West Atlantic Turtle Symposium, WATS 1).

COORDINATION OF AGENCY AND INDIVIDUAL RESPONSIBILITIES

Trinidad is in the unusual and fortunate position of having a variety of individuals, distributed among several governmental and non-governmental organizations, who have demonstrated a major commitment to marine turtle research, conservation, and management. Among such organizations, the Institute of Marine Affairs (IMA), the Trinidad Forestry Department, and the Point-a-Pierre Wild Fowl Trust and Trinidad Field Naturalists¹ Club are preeminent.

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The responsibilities that each of these organizations has selected for itself in the field of marine turtle activities are substantially non-overlapping, and even where interests or responsibilities partially coincide, the logical policy is one of supplementation of effort rather than conflict or competition. While there have not been serious conflicts in the past, there is a potential for closer coordination and sharing of data, and it is strongly recommended that this take place.

In order to ensure harmonious coordination of marine turtle activities in Trinidad/Tobago in 1985 and subsequent years, it is proposed that a planning meeting be held early in 1985, at which individuals involved with sea turtle __ work should plan the sharing of research and management responsibilities for the season. These responsibilities will include the following: a) Laboratory Research, including a "head-starting" program for the hawksbill turtle. The Institure of Marine Affairs would logically be the lead agency for this work, requesting assistance from other agencies (e.g. Forestry, for assistance in acquisition of eggs or hatchling turtles from patrolled beaches) when this is needed.

b) Beach patrols, primarily for purposes of law enforcement. This should

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continue to be the prisary responsibility of Forestry. However, to the extent possible, research perconnel should accompany these patrols. These individuals may be from MAA, the Field Naturalists' Club, or elsewhere; they would be responsible for tagging nesting turtles, waking observations on the numbers and species of turtles nesting, evaluating nesting and hatching success, and any other research that is though appropriate or desirable. c) Educational activities. These would be the primary responsibility of the non-governmental sector as long as such organizations (Point-a-Pierre Wild Fowl Trust, Field Naturalists' Club, etc.) were willing to make a compitment to this undertaking. Such educational activities would be conducted partially in the classroom (using slide shows or other audio-visual presentations as far as possible, together with an expert "resource person" to give commentary and answer questions); and partially in the field, by taking groups of young people to nesting beaches and having them watch turtles nesting. Such groups must be closely supervised or they could cause more harm than good. The person in charge of the group should have a detailed knowledge of turtle biology and behavior, should ensure that rowdy behavior, uncontrolled use of flashlights, etc., do not occur, and so on. While it is not easy for the Consultant to give a fixed maximum size for such groups, experience should quickly suggest how many people are "manageable," and can be kept.together and can observe turtles nesting without forming an excessive crowd or getting in each others' way. These educational beach patrols should be accompanied whenever possible by a representative of the Forestry Department or Fisheries so that any poachers encountered can be apprehended, and also so that the young participants can receive direct instruction on law enforcement topics from the agency representative.

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. The second second of a state as a second Further details of proposed educational activities, endorsed by the Consultant, may be found in the Draft Trinidad Turtle Recovery Plan submitted to the Wider Caribbean Sea Turtle Recovery Team by M. R. Gaskin. d) Mesting and pelagic turtle surveys. The Institute of Marine Affairs would be the logical organization to conduct these surveys, which need not be continuous but which are important in order to maintain monitoring of the overall turtle populations in Trinidad and Tobago. The monitoring will clarify whether the enhanced levels of nesting by the leatherback turtle in Trinidad in 1984 is a sign of an overall population increase or just an isolated year of heavy nesting. If possible, National Security will continue to make its helicopters available for these surveys. Flights should be coordinated among the interested parties (e.g. IMA, Field Naturalists) and data shared freely.

e) Incidental catch surveys. These are described more fully elsewhere in this report. It is anticipated that IMA would be the lead agency.
f) Monitoring of terrestrial habitat alteration. Examples of undesirable alteration of sea turtle nesting beach habitat include beach sand mining and - establishment of illuminated development behind nesting beaches, which can both deter turtles from nesting and also attract hatchlings from nests that were made inland, away from the sea, which may greatly increase the neonatal _ mortality. The Institute of Marine Affairs, Forestry, and non-governmental groups should combine in their efforts to prevent activities or developments _ of these kinds, and jointly monitor both occurrence and effects of such _ disturbances.

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LEGISLATION AND ENFORCEMENT

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i) INTERNATIONAL CONVENTIONS

Trinidad and Tobago became a signatory to the Convention on Trade in Endangered Species of Flora and Fauna (CITES) in 1984; the Instrument of Accession to the Convention was signed by Dr. Basil Ince, Minister of External Affairs of Trinidad and Tobago, in February 1984.

The terms of this Convention require that there be no commercial import or export of marine turtles or their products in signatory countries: Publicity for and enforcement of this Convention is critical if it is: to be effective in Trinidad and Tobago. Posters notifying travellers of the kinds of wildlife product that are now prohibited should be displayed in critical locations, including Piarco Airport. Effective displays can often be made from confiscated items, advising importers that they too will have their goods seized if they import or export them illegally. Customs officers at both marine and air points of arrival should be thoroughly briefed on the terms of the Convention.

ii) DOMESTIC LEGISLATION

The 1963 Conservation of Wild Life Act empowers any Game Warden (including Honorary Game Wardens) or Constable with enforcement authority for regulations concerning the protection or management of any non-domestic mammal, bird, or reptile. This Act thus includes management authority for marine turtles, which of course are reptiles.

The 1975 Fisheries Act overlaps in scope with the Conservation of Wild Life Act in that it includes regulations for management of turtles and turtle eggs in addition to all other marine fauna. This Act specified that there must

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be a closed season on all capture and marketing of turtles from March 1 to September 30; that turtle eggs are protected at all times; and that no female turtle may be caught either while on shore, within a reef, or within 1000 yards of shore where there is no reef. Enforcement is the responsibility of Fisheries Officers.

These regulations are soundly based, but minor modifications are recommended:

a) Both Acts (i.e. Wild Life and Fisheries) should specify that <u>any</u> law enforcement agent, including Fisheries Officers, Game Wardens, and their deputies, Constables, and others, should have authority to enforce turtle protection regulations. Until the law can be changed in this way, Forestry Officers and other law enforcement officers should be accorded status of Deputy or Honorary Fisheries Officers if legal provision exists for this to le done. Such spreading of enforcement authority is a pragmatic necessity; offences may occur anywhere on Trinidad and Tobago's long coastline, or inland in local markets, and no single agency can field an adequate cache of enforcement officers to ensure compliance with the regulations. Also, if a Forestry Department patrol should encounter a turtle poacher, it may theoretically be prevented from ma ing an arrest if "Fisheries Officer" is narrowly construed. This is clearly an undesirable situation, especially since it is likely that the majority of turtle beach patrols will be made by Forestry personnel.

b) Since the hawksbill turtle is caught principally for export of its shell, and since this trade is now outlawed by the provisions of CITES, it wo be appropriate to offer this species complete protection in Trinidad in domes tic legislation. Similarly, the leatherback is almost impossible to catch at

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12 - **68**- sea, and in practice exploitation of this species takes the form of illegal killing of nesting females. Inclusion of this easily recognized species on the "totally protected" list would close an enforcement loophole. At present, individuals encountered with leatherback parts may safely be assumed to have derived them from a nesting female (with the rare exception of a specimen accidentally caught in a trawl or filette), but this could not easily be proven in a court of law, and poachers may be released if the species is not given complete protection.

The olive ridley is highly endangered in the Western Atlantic, through unknown causes but possibly through massive incidental catch in shrimp trawls throughout the region (Trinidad to Brazil). It also should receive complete legal protection in Trinidad and Tobago.

c) The Fisheries Regulations offer protection to "female turtles" unless they are outside the reef or more than 1000 yards from shore where there is no reef. This regulation includes elements of unrealism in that even a scientist cannot externally distinguish the sex of a turtle until it nears maturity. Moreover, even a fisherman trying to follow the regulations may not be certain whether or not he is 1000 yards from shore. Also, it is not known how many males are necessary to ensure normal reproduction, and since copulating males are quite easy to catch, this "open season", without quota, on adult males could lead to trouble. In practice, turtles are likely to be caught wherever they are found except in the unusual situation of an enforcement agent being present.

It would be better to protect turtles of breeding size, and to allow a limited open season on green turtles of less than mature size. Turtles of subadult size are less susceptible to overharvest since they do not present themselves as an easy target while copulating or nesting. The minimum breeding size of green turtles in the Atlantic is about 36 inches (91.5 cm) carapace length. Green turtles larger

13 **6q-** than this should meetive protection.

Nevertheless, the restriction of where turtles can be caught should be retained despite its shortcoming, and the qualification of "malesonly" should be removed. Such a regulation may protect turtles very close to shore, as in northeastern Trinidad near Toos, where instature greens and hawksbills often swim within a few yards of shore and can easily be approached.

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Relatively few people make a significant part of their income from capture of turtles in Trinidad and Tobago. These individuals, in many cases, have been cooperative with IMA and other surveyors and are concerned about the status of the resource. Individual fishermen should be carefully briefed on the purpose of the revised regulations, and it should be explained to them that it is still legal to catch green turtles under certain circumstances for domestic use, so it is not a case of new regulations "banning everything."

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INCIDENTAL CATCH

The problem of incidental capture of sea turtles is a critical one in several parts of the world, including Indonesia, the Atlantic waters of the United States, and Pacific waters of northern Mexico. It has not been quantified in the northern South America area, but unquestionably occurs. It is potentially serious in that such catches often involve the relatively slow-swimming olive ridley, <u>Lepidochelys olivacea</u>, which is endangered in the region. Of the olive ridleys tagged in Surinam by the Consultant in the 1960's and early 1970's, a fair proportion were caught incidentally, in waters of Trinidad and western Venezuela by trawlers.

It is vital that the dimensions of this problem be quantified in Trinidad. It would be appropriate for the Institute of Marine Affairs to take the lead in this investigation, with backup and support from other agencies and personnel where appropriate. Such investigation will take the form of interviews with trawler captains to determine how many turtles, of what species, they catch, and whether such turtles are generally alive or dead when caught. In either case, final disposition of the turtle (released or kept) should be ascertained. In this way, it should be possible to determine how many turtles of what species are caught annually, and where the greatest concentrations of captures take place. Cooperative trawler captains could be asked to maintain a log of turtles caught for the next few months. In all interviews with trawler captains, the topic of the Turtle Excluder Device (TED) should be discussed, and their receptiveness to a program of volumtary TED usage in high-capture areas explored.

For the time being, it may not be necessary to proceed legislately in the area of incidental catch; a voluntary compliance program as regards the TED would certainly be better. However, ultimately it may be necessary to establish areas in which capture is so high that the TED should be made mandatory, at least at certain seasons.

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SAND MINING

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The Consultant only became aware of the problem of the mining of sands on Trinidad beaches in the last days of his stay on the island, and this precluded him from making an in-depth evaluation of the problem and possible solutions. However, a meeting was coordinated by Dr. Carol James, at which the Consultant was able to meet with various government representatives and discuss the sand mining question; the group actually had the opportunity of watching a leatherback turtle nesting on the beach in question (Matura). The Consultant was also able to see the sand-mining areas, both while on foot and from the air. Some preliminary conclusions were reached, but in some cases they raise questions rather than present definitive answers. These are as follows:

Sand mining is unquestionably an environmentally undesirable activity i) at Matura, contributing to beach erosion, destabilization of shorelines, and loss of nesting habitat for marine turtles. The mined beach, Matura, is a narrow one, already undergoing erosion and with many areas where there is insufficient space left between the sea and the coconut palms for turtles to nest. Even now, leatherback nesting thus has to concentrate itself on those places where the beach is widest. Matura is also one of the most important leatherback nesting beaches in Trinidad. Consequently, earnest effort should be made seek alternatives to satisfy industrial needs from other sour A systematic search should be initiated for sand that fulfils the requirement of both the oil industry and sewage filtration. If inland sources in Trinida cannot be located, other sources should be sought. For example, in Guyana t are substantial and easily accessible inland deposits of sand near Timehri Since the foreign exchange situation is such that Guyana owes Airport. Trinidad substantial revenues which are unlikely to be paid in the foreseeab

16 **- 72 -** future, it is possible that Guyanese sand could be obtained without charge in partial mitigation of these debts, if it is determined to be physically suitable.

ii) Reports reached the Consultant that the sand mining company working at Maturn had frequently ignored the guidelines and restrictions established under which the sand could be mined, in terms of season, location, and absolute quantity. It is strongly recommended that a system be established whereby removal of sand can be monitored and contracts cancelled if the rules are not respected, since breach of the terms of the mining permission constitutes theft of natural resources for private gain and should not be tolerated. While the precise nature of this monitoring should be worked out locally, rather than by a Consultant with limited familiarity with the problem, a possible solution might be for a massive, locked gate to bar vehicular access to the beach until it was unlocked by the official responsible for monitoring sand removal.

iii) While a clear and total moratorium on beach mining has been advocated (e.g. by the Field Naturalists' Club) and is strongly recommended, until this is established it is necessary to take steps to ensure that turtle nests are not destroyed by the mining operation. Thus, unless mitigation procedures are adopted, mining should not take place at any time when eggs are incubating in the beach, which would correspond to a period starting when the first turtles nest, and ending about two months after nesting had finished. This would approximate to a six-month period starting in March, though refinement of the dates according to the exact nesting schedule in a given year may be necessary.

A possible alternative would lie in the establishment of a 100% monitoring of nesting activity on the section of the beach from which sands were extracted. This should be financed by the sand mining company but undertaken by an individual primarily answerable to government. If each nest in the mined area were to be relocated to a site outside the limits of the mined area as it was laid, this

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17 - **73-** might represent a satisfactory accomodation to the turtles' needs. It would have to be done by a responsible and careful individual who would spend each nighon the beach during the nesting season. Leatherback eggs are more susceptible to mortality following relocation than are those of other species, so they would have to be moved immediately and carefully, and the nests marked inconspicuously so that hatching success could be monitored.

The Teatherstock turtle, Dansdelve contaces

The loatherback is the most important maxime turtle species in Trinidad in terms of numbers of individuals encountered neuting; it is probably also the dominant mosting species on Tobago. The best mosting grounds in the Antillean area are located on Trinidad, although greater numbers nest on mainland shores of Central America and the Guiancs. Curiously, almost none nest in Venezuela.

The peculiar biology of this species, which is known to dive to depths of almost 1500 feet, migrate distances of 3000 miles to temperate or even near-polar latitudes within a few months of nesting in the tropics, and grow to 10,000 to 20,000 times its hatchling weight in only 2-3 years on an exclusive diet of jellyfish, is unique among reptiles, but space does not allow further discussion of these topics here.

The leatherback is listed as "endangered" by the United States Fish and Wildlife Service; as an "Appendix I" (protected) species by the Convention on International Trade in Endangered Species of Flora and Fauna; and "endangered" by the International Union for the Conservation of Nature. Whether these categories reflect biological reality has been the subject of some debate, since leatherbacks are now known not to be rare, and surveys conducted in recent decades have revealed major new nesting grounds rather than documented declining populations. Nevertheless, in most areas where it nests the species is subject to stress either by poaching or egg collecting, or both, and while the "endangered" designation may be changed in the future, this should not be done yet.

In Trinidad and Tobago, the greatest value of the leatherback lies in its benefit as a scientific and educational resource. The value of the experience gained by both Trinidadians and by visitors when they have the

19 746 opportunity of observing the nesting of a 1000 pound turtle is greater than any value that could be derived from direct utilization of the animal or its eggs for human consumption. Moreover, these two uses are somewhat incompatible even if exploitation is maintained at a low level; the turtle is very difficult to mapture at sea, and leatherback hunters are generally obliged to seek their prey during the vulnerable nesting phase. The turtles are so large that they have to be butchered where they are found, leaving a stinking carcass that destroys the pleasure of the beach experience for both turtle-watching groups at night and daytime visitors enjoying other aspects of the beach, such as swimming, windsurfing, or pienicking.

Management plans for the leatherback in Trinidad/Tobago should include the following components:

i) A tagging program. It has been found most effective to tag leatherbacks on the hind flippers, or failing that towards the outer part of the foreflipper (when the flesh is tough and must be perforated with a chisel or knife before tagging). Monel metal tags are reasonably satisfactory, but plastic or titanium is better in that under certain circumstances monel tags can corrode badly in sea water.

Since tagging is a research rather than a management activity, the responsibility for this lies more with IMA or Field Naturalists rather than with Forestry. It is recommended that IMA and Field Naturalists confer and establish a "lead agency" responsible for turtle tagging, and that an individual be designated who will be in charge of keeping the records of all turtles tagged and of tagged turtles subsequently re-encountered either on the beach or by capture at This record should be freely available to all interested parties. If they are willing to accept the responsibility, Forestry employees on turtle patrol should carry tags and tag turtles opportunistically, using Overall techniques as described in the "Manual of Sea Turtle Research and Conservation Techniques" distrib

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by the West Atlantic Turtle Symposium (WATS).

Tagging, if conducted seriously and systematically, can yield valuable data on migrations, exchange between nesting grounds (e.g. between Trinidad and Tobago, or between Trinidad and mainland beaches), and on population monitbring.

ii) Anti-poaching patrols. Leatherbacks are slaughtered while they nest on many Trinidad and Tobago beaches, although beach patrols have slowed this somewhat in recent years. Such patrols should continue and be augmented, and should extend to further beaches as resources allow. The major nesting beaches should be patrolled on a random and unpredictable basis, and personnel should operate with stealth and with minimal use of flashlights in order to maximize the chances of catching poachers red-handed. The Fishing Pond Beach is particularly visited by poachers and large numbers of carcasses were seen there by the Consultant. It is urgent that a high enforcement presence be maintained on this beach.

iii) In some areas, feral dogs (or poorly disciplined and hungry pet dogs) are a major problem. At Grande Riviere, for example, numerous leatherback nests on this important beach had been destroyed by dogs just before our visit in 1984. These dogs need to be eliminated; they probably do a great deal of damage to other wildlife as well as to turtles. This will need to be done discretely to prevent a reaction from the local people, but it is important. Probably few nests in northeastern Trinidad survive predation by these dogs if what we saw at Grande Riviere in 1984 was typical.

iv) Monitoring. IMA should continue to constitute a focus for information derived from tagging efforts, aerial surveys, and law enforcement patrols, as regards the numbers of leatherbacks nesting in Trinidad and Tonago each year,

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v) Other studies. Many scientists around the world are interested in various aspects of leatherback nesting biology, and Trinidad provides an excellent site for such studies, with reasonably accessible nesting beaches, adequate numbers of nesting turtles, and a cooperative and English-speaking people and government agencies. Studies by foreign scientists should be welcomed, and Trinidadian personnel allocated to assist such scientists in the field so that they can learn from them. This would parallel the philosophy of the Charles Darwin Research Station in the Galapagos Islands, where foreign scientists are assigned Ecuadoriar assistants for field work.

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The hawkshill turtle (Eretmochelys imbricata)

The baokshill is a highly tropical, typically island-nesting turtle, most usually found around could reefs where it subsists upon sponges and other invertelevates. It is probably less migratory than other sea turtle species, and the sting grounds are often very close to favorite feeding areas. However, a few cases are on record of long-distance migrations by post-nesting hawksbills. The species is the most frequently seen sea turtle around many of the Antilles, but never forms large nesting colonies; typically, nests are made singly and unpredictably, often on very small cove beaches. This species locomotes on land or over obstacles more easily than other sea turtles, and it is known to enawl over exposed reefs and ascend rocky or pebble beaches, often nesting under trees or bushes. Its nests may thus be missed by aerial surveys and even fresh nests may be hard to detect even with ground surveys.

The hawksbill is listed as "endangered" by the United States Department of the Interior and the International Union for the Conservation of Nasure, and as an Appendix I species (banned from international commerce between signatory countries) by the Convention of Trade in Endangered Species of Flora and Fauna (CITES). World populations have been significantly depleted by the demand for the shell of the hawksbill which provides true "tortoiseshell."

Geologically and biologically, Trinidad is more similar to part of the South American mainland than to a typical Caribbean island, and this may account for the presence of far more nesting leatherbacks than hawksbills on Trinidad beaches. Actual records of nesting hawksbills in Trinidad are rather few, and appear to be concentrated on the associated islands rather than on Trinidad itself. Bacon (1981) reported hawksbill nesting on the east coast beaches of Matura and Manzanilla, as well as the north coast beaches of Maracas and Las Cuevas (originally reported by Bacon and Maliphant, 1971, as <u>Carotta</u>), and the islands of Huevos

23 --78and Chacachacare, but recorded no nesting on Tobago. However, Carr et al. (1982) reported hawksbill nesting on Tobago, and also reported an individual nesting at Brigand Hill, on the east coast of Trinidad.

H. Boos (pers. count.) reported two instances of hawkshill nesting on Chacachacare Island; in one case, J. Boos had intercoded to prevent the killing of a nesting hawkshill at Salt Pond Beach on Chacachacare. H. Boos also reported a hawkshill nest that had been excavated by dogs at Tortue Eay, Huevos Island, and another individual was photographed on its second attempt to nest at La Tinta Beach, West Bay, Chacachacare.

Chu Cheong (1984) head-started hawksbill hatchlings from a nest from Chacachacare Island, and we saw two fairly fresh nesting tracks on this island in the course of a helicopter survey, both on La Tinta Beach.

We also found some evidence of nesting of hawksbills on beaches on the north coast of Trinidad. An informant at Paria Beach reported that hawksbills nested there in small numbers from March to October, and we found a single supracaudal scute of an adult hawksbill on this beach, possibly derived from an individual slaughtered while nesting. We also found three pleural bones of an adult hawksbill on an extremely small, unnamed beach a short distance east of Blanchisseuse.

In conclusion, it appears probable that hawksbills nest rarely on beaches of eastern Trinidad, somewhat more frequently on the north coast beaches, and regularly, though not in colonial fashion, on the islands of the Boca del Dragon, especially on Chacachacare Island.

Because of the sporadic and unpredictable nature of its nesting, it is probable that most Trinidad hawksbills nest unmolested by man. However, there is a considerable capture of the species in Trinidad waters. Generally they

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are caught in nets and most commonly off the northern coast. One fisherman claimed to recognize two forms of hawksbill; the smaller one, weighing 50 lbs or less, be called "sch-sch."

Chu Chaong (1984) presented statistics on the capture of turtles in Trinidad. She found that fishermon at six of the fifteen depots investigated cought one turtles; these included Matelot, Topo, Grande Riviere, Mayaro, La Lune, and Carenage. Both hawksbills and greens were caught; nets used were generally of 30 cm mesh, and extended vertically 210-240 cm in the water column. Individual nets were about 30 m in length, but longer spans could be made with several units. The nets were set in known feeding areas and checked every morning and evening. Reported weekly catches ranged from 4-10 turtles, but on one occasion fifty turtles had been caught in one day in 1980 at Mayaro.

Statistics gathered by a cooperating fisherman at the Toco Depot gave the average weight of 36 hawksbills as 91.4 kg (201 lb). However, this figure is greatly in excess of the usual size of mature hawksbills, and it is likely that the weights given were exaggerated. Pritchard (1969) gives dimensions and weights of a series of adult hawksbills from Guyana, and according to the ratios suggested by these data, animals around 66 cm in length should weigh 25-30 kg, not 80-100 kg. The figures also suggested that adult males made up the vast majority of the catch. This could have been the result of the usual method of capture (harpooning), copulating males being especially easy to harpoon; on the other hand, it is conceivable that the data were presented in such a way as to exclude illegal animals (i.e. undersized individuals, or females during the closed season). Fishermen interviewed by Chu Cheong were generally aware of laws protecting turtles, but they had varying and often inaccurate understandings of the details of these laws.

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While the hawksbill is listed as endangered or as Appendix I by international agencies, there is some controversy as to the real biological status of the species. Some authorities (e.g. Carr and Meylan, 1980) regard it as on the brink of biological extinction worldwide; others (e.g. A. Dammann, pers. comm.) feel that Caribbean populations are not significantly depleted and that protection of the nesting females will be adequate to maintain populations. Some interpret the huge volumes of tortoiseshell in international trade as evidence that the species could not be all that rare; others see these same volumes as evidence that the species is being harvested at an unacceptably high rate that cannot be sustained much longer. There may be some truth in both assertions; hawksbills are not about to become extinct, and despite the difficulty of locating any beach on which more than a few hawksbills nest, the world population must be at least in the hundreds of thousands, of mostly immature specimens. But on the other hand, documented decline has occurred in many areas, especially in the western Caribbean (both mainland shores and the Colombian islands and banks), and world demand for the shell is almost surely incompatible with sustainable yield. The species thus may only be saved by strong legal protection and curtailment of markets.

Currently, Trinidad law, promulgated via the Fisheries Act of 1916 (last revision: 1980) does not differentiate between the different species of sea turtle. It offers seasonal protection to all turtles, and protection of turtle eggs and female turtles in or close to shore at all times. There is thus legal catch of

26 **- 81 -** hawksbills under some eircumstances. On the other hand, the principal product of the hawksbill turtle is the shell, for which the markets lie in other countries (ultimately largely Japan), but export of tortoiseshell from Trinidad is illegal under the provisions of CITES. Turtles may still be caught for their meat for local use, but the product of greatest cash value is essentially unsalable without breaking the law (though there may be miniscule, local markets). This presents an untenable situation since it is unrealistic to expect fishermen to discard the most valuable part of their catch.

Because the hawksbill is officially listed as endangered, and is widely over-harvested and listed by CITES in Appendix I, it is recommended that this species receive as much protection as is politically feasible in Trinidad and Tobago.

The species should receive complete protection for the time being. Also, it is recommended that a small-scale head-starting project be initiated. This should be conducted by the Institute of Marine Affairs, which already has the capability for such programs. If, say, two nests averaging 170 eggs each could be collected annually and the young artificially hatched and released after growing for the first year in captivity, an annual increment of 200-300 juveniles could be added to the population resident in Trinidad waters.

If the recommendation of head-starting is accepted, the most feasible source of eggs may be Chacachacare Island. Nesting appears to be more frequent there than elsewhere in Trinidad and Tobago, and if a biologist were stationed on the island for a few days in mid-season (say May or June), he could expect to find the required nests.

Before head-starting is undertaken, IMA should send a biologist to Venezuela to visit the head-starting facility at Archipielago los Roques.

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This effort, under the direction of HUDENA and the Instituto Los Roques, has had conspicuous success in rearing hawksbills from local nests to an age of 9-12 months.

Hawksbills head-started in Trinidad should be released in local waters. Unnatural concentration of released animals should be avoided, and areas of coral reef, that not only constitute the appropriate habitat but also are unsuitable for trawling, should be selected to receive the young turtles. Released turtles should be tagged, preferably with small titanium tags with the IMA return address.

Complete legal protection of the hawksbill may be difficult for the fishing community to accept, and means would have to be taken to make the ban as palatable to them as possible. The number of people involved in turtle fishing in Trinidad is small, and the ban should be explained to them on an individual basis. It could be stressed that the green turtle is still legal to catch, and that it is adherence to an international convention rather than an arbitrary local decree that protects the hawksbill. It could also be pointed out that, with an active head-starting program and protection of the wild stocks, the species could return to a level of abundance that could justify application to CITES for a shift of the Trinidad population to Appendix II, which would mean that Trinidad and Tobago could issue descretionary export permits. However, the latter should not be over-emphasized since depleted sea turtle populations tend to recover slowly and erratically at best, and if a certain level of poaching continues recovery may not take place at all.

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The green turtle, Chelonia mydas

The green turtle in moderately common in waters of Trinidad and Tobago, and it occasionally nests on TT shores, though much less commonly than the leatherback and probably less commonly even than the hawksbill. This is a species of great world-wide economic importance, almost entirely because of the edibility of the flesh and eggs. The shell and leather of wild green turtles is of little commercial value or importance (though these products from farmreared turtles have been sold as substitutes for hawksbill shell and ridley leather respectively).

The green turtle is a highly migratory species. Specimens in the Caribbean area almost all derive from on of four nesting grounds -- major ones in Costa Rica and the Guianas, especially Surinam; and minor ones in Quintana Roo (Mexico) and Isla Aves (Venezuela). However, very small numbers nest on many islands and mainland shores of the Caribbean; it is not known whether these represent small, isolated nesting colonies, or simply stray individuals from a major nesting colony.

The green turtle, although still existing in large numbers in certain parts of the world, is listed by CITES as an Appendix I species. Consequently, Trinidad may not be party to international trade in this species or its products. However, if Trinidad can effectively protect the breeding animals by maintaining a ban on collection of eggs or capture of breeding-size animals of either sex (see LEGISLATION AND ENFORCEMENT), it should be permissible to allow limitedscale capture of immature animals to continue.

Moves are afoot in CITES to downlist certain localized populations of the green turtle in order to allow production from the Grand Cayman turtle farm and the turtle ranching facilities in Surinam and Reunion to export their product.

29 - **8 4**- However, this change, even if consummated (at present it is only proposed) would not affect the ban on export of green turtle products from Trinidad. It might permit import of products under certain circumstances, but economic factors (high prices and loss of foreign exchange) should minimize Trinidad's role in any such commerce.

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 The olive ridley turtle, Lepidochelys clivacea

The olive ridley turtle has been known as a member of the fauna of Trinidad since Carr (1956) received fishermen's reports of a local, relatively rare, non-mesting species known as "batali;" subsequently, Carr t received the head of a "batali," confirming its identification as <u>Lepidochelys olivacea</u>.

pagging studies by Pritchard (1973, 1976) subsequently revealed that <u>L</u> <u>olivacea</u> is regularly caught in Trinidad waters, although these specimens were derived from distant nesting grounds in eastern Surinam. But until very recently, the only nesting records were those of rare individuals identified by Bacon (1981) at the beaches of Matura, Manzanilla, and Cedros, and another found by Chu Cheong (1984), who was able to raise some of the hatchlings in captivity. Indeed, Carr et al. (1982) stated rather categorically that "no olive ridley has been recorded nesting in Trinidad."

A report by Gaskin at the 1984 meeting of the Wider Caribbean Sea Turtle Recivery Team (WIDECAST), to the effect that olive ridleys nested in western Trinidad in 1984, is therefore surprising and noteworthy. Gaskin reported a single nest near Orange Valley, and twenty or more at Otaheite, both localities being in the Gulf of Paria.

Further investigations of these reports in a high priority. The olive ridley in the western Atlantic appears to be heavily depleted and has undergone massive reduction in the population of nesting individuals at the principal breeding ground in the region, namely Eilanti Beach in eastern Surinam. Whether this population has undergone an overall collapse or has merely dispersed required investigation. Some of the reduction in nesting females at Eilanti has been balanced by an increase on other Surinam nesting grounds, but even so

31 86 - the annual next count for Suminum as a whole, about 3060 in 1967-68, has not been higher than 1120 since 1972. It could be that some of these turtles, displaced translanding possibly by erovies at be observed by targeoning population of <u>Persistentes</u> (which, by nexting very desply, are liable to destroy ridley nests), have started to next in Trinical. If this is the case, Trinicad will hold a which responsibility for the survival of the species in the vestern Atlantic, and should take appropriate steps.

These steps should include the allocation of personnel to undertake patrols and interviews with local residents in the overall San Fernando area in 1985 and in subsequent years. The nesting season for <u>Lepidochelys</u> in Carinam is primarily in May and June, so patrols should be concentrated in these months. Which department or organization should conduct these patrols will depend upon availability of personnel. At the pre-season planning meeting, volunteers should be sought from the governmental and non-governmental sectors and coordinated patrols conducted. Important questions to answer are: i) Exactly where are the ridleys nesting, and in what numbers? ii) Polocal people claim that they have always nested locally, or is this a new phenomenon? iii) Are the turtles subject to poaching on the nesting teaches, or accidentally by trawler activity offshore? iv) What is the fate of nests ---are they destroyed by human or natural predation or endion, or do they usually hatch successfully?

Any aerial surveys during 1985 should ' attempt to include these areas, but it should be noted that ridley tracks and nests are lightly-cut and ephemeral, and only very fresh tracks are likely to be detectable from an aircraft

Since the olive ridley is endangered with extinction in the western Atlantic and is a species of negligible commercial importance in the region there

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should be no legal take of the species or sale of its products in Trinidad and Tobago.

It is recommended that captains of Trinidad-based trawlers be interviewed to determine whether or not significant numbers of olive ridleys are being caught accidentally. If regular capture is taking place, usage of the Turtle Excluder Devide or Trawling Efficiency Device (TED) should be instituted. A request could be made to the US National Marine Fisheries Service for a demonstration of this device or for help in getting it introduced in Trinidad.

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The Loggerhead Turtle, Caretta caretta

The loggerhead appears to be rare in Trinidad waters, and confirmed nestingrecords are few to non-existent. It would be desirable to gather whatever data can be obtained on the occurrence of this species in Trinidad and Tobago, but the species cannot be considered an important component of the local turtle faun. Moreover, the species occurs in large numbers in the United States (nesting especially in Florida, but also in Georgia and the Carolinas) where it receives _ considerable management attention. It is thus relatively safe in the western Atlantic, and Trinidad does not need to play any major role in the conservation = of this species. Thus, no specific management reconsendations are made for the loggerhead in Trinidad and Tobago.

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With the exception of the items listed below, full references, with summary of contents, to all textual citations will be found in the BACKGROUND section (pages 3-7).

Carr, A. F. and A. Meylan. 1980. Extinction or resoue for the hawksbill? Oryx, 15: 449-450.

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APPENDIX III

Wildlife Section, Forestry Division (1987). Protection of leatherback and other Marine Turtles by the Forestry Division.

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- 93-PROTECTION OF LEATHERBACK AND OTHER MARINE TURTLES BY THE FORESTRY DIVISION

BACKGROUND

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1.1. The Wildlife Section has been involved with the protection of leatherback turtles and turtle-nesting habitat since 1982.

1.2. The Section initiated action (lectures, field-trips) through which the Quarries Advisory Committee banned sand-mining at Matura Beach. This action encouraged increased nesting and reduced damage to eggs because of stabilized beach conditions (there were massive changes in beach contour due to tidal action in quarried areas leaving no suitable nesting surfaces).

Also, the parallel action of refusing permission for construction of an access road to the beach for sand-mining bore fruit, since it limited vehicle access and thus, indirectly reduced leatherback turtle slaughter (transporting heavy bags of meat by hand to vehicles parked long distances from the site of slaughter is undertaken only by the most determined gangs of poachers who each share the burden of transport).

Establishment in 1983 of regular dusk-to-dawn patrols by Forestry Staff, and the strategy of encouraging visitors and volunteer helpers on the beach (through educational trips organised by the Wildlife Section and by Molly Gaskin of the Field Naturalists Club), saw a dramatic reduction in turtle slaughters at Matura from that year onwards. However, determined poachers still chose their times very carefully by camping round-the-clock to observe for any breaks in human activity on nesting beaches and continued sporadic slaughtering at Matura (it takes only a few seconds to kill the very vulnerable female leatherback while on the beach, thus a 10 - 12 hour patrol can be rendered useless if campers are allowed on nesting beaches).

1.5.

Protection at Fishing Pond proved to be more difficult since volunteer assistance was not as available as at Matura. Very few citizen groups were interested in visiting this isolated, difficult to access "dangerous," area. Forest officers from North and South Game Warden Patrols and from Wildlife Research mounted a determined effort to reduce the high slaughter-rate at Fishing Pond Beach. 1985 proved to be reasonably successful as potential poachers who were on the beach to "fish" and whose only 'fishing gear" were cutlasses, sharp knives, plastic bags (for meat) and buckets (for eggs) - tools of trade of a turtle poacher - were harassed by Game Wardens to leave the beach.

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- 1.6. This exercise was somewhat dangerous since:-
 - (i) Game Wardens had no legal authority to ask any person to leave the area (they were not and are still not precepted, neither is the area out of bounds for citizens).

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- (ii) Threats against their lives were stepped up by determined poachers driven by the high profit motive (leatherback turtle meat is sold as beef roti - it is cooked with beef fat to disguise the taste and smell). Tyres on patrol jeeps have been slashed and cutlass threats have been made to unarmed wildlife research staff. An OAS Parks consultant and staff of the Ministry's audio-visual unit suffered at the hands of angry poachers by also having all tyres on their vehicles slashed during one of these trips accompanying Wildlife Section Staff.
- 1.7. Despite the danger, patrols were kept up at Fishing Pond. Less frequent patrols were also made at Grand Riviere, Toco and Manzanilla where slaughters and egg-poaching also took place, and at Matura. One major research/protection expedition was mounted from Blanchisseuse to Matelot during 1984 to survey North-coast beaches.
- 1.8. A recommendation made in May 1985 to have both Matura and Fishing Pond Beaches declared as Prohibited Areas during the turtle nesting season has not materialized. It was hoped that this action would assist Game Wardens in protecting nesting habitat and turtles through limiting entry into the area to permitholders (i.e. bona-fide fishermen etc.) and thus preventing potential poachers from camping on these beaches (sometimes for 2 or 3 days under the pretext of fishing). Reference is made to the "Background Report on Outstanding Problems in Wildlife Conservation with Recommendations" prepared on behalf of the Wildlife Conservation Committee by the Wildlife Section, 1987 January 30, pages 30 and 177 to 181.
- 1.9. Detection and apprehension of offenders is extremely difficult without adequate staff to be deployed round-the-clock on beaches, camping for several days, to stake-out determined poachers. The only arrests made were of five poachers apprehended on the one road out of Uega de Oropouche in 1985 after a two day stake-out by Game Wardens and a police officer. This resulted in at least six (6) court appearances spread over ten (10) months, legal bungling by defence attorneys, and eventually the case was dismissed with strong warnings to the defendants by the very concerned magistrate. One other case, not involving any arrests, was bungled by police officers (see pages 247 249 of Background Report, op cit in 1:8 above).

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2.1. Patrols

2.1.1. All-night patrols for the 1987 Nesting Season were initiated in February at Matura and Fishing Pond Beaches and in March at Grand Riviere. Day-time beach evaluations were also initiated in February to observe beach conditions, hatchling emergence and to prevent egg-poaching (the latter tends to be a day-time activity).

- 95--- 3 -

- 2.1.2. Slaughters were observed at Fishing Pond from March and 16 carcasses have been observed to date (Appendix 1). It is important to note that 16 slaughters did not take place over one weekend only, but were spread out over the period March to May 04. It is suspected that poachers have developed an alliance with a resident of Fishing Pond who is a known offender and who allows his property to be used as a parking lot for poachers' vehicles. This villager is exceedingly wily and was highly recommended by a concerned conservationist, Mr. Ishmael Samad, as a dedicated protector of turtles. It was suggested that he should be hired to assist in our protection efforts.
 - This resident was hired in 1985 for 2 days per week, to assist in undertaking protection. Suspicions 2.1.3. were aroused when all slaughters in 1985 took place on the days when the resident knew that Forest Officers were not scheduled to patrol. Strategies were developed to test this and suspicions were confirmed when a freshly killed turtle was observed on the beach (heart still beating) which was hurriedly covered with sand. The resident and other persons were on the beach and pretended that they had "just stumbled upon this poor animal which some heartless person had slaughtered." Circumstantial evidence was ysufficient to lay charges, but his services were dispensed with promptly. It has been extremely difficult to apprehend this person since the beach is close to his home and his home commands a panoramic view of the only road into the area, enabling him to take evasive action.
 - 2.1.4. Evidence of poaching for eggs was observed throughout the period February to May 08 as poles, used to test the sand for the presence of eggs (those are poked up and down in the sand vertically, and if the end comes up sticky, eggs are present and the nest is dug up), were left standing in the sand at various places.

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2.1.5. There was an alarming increase in physical threats made to Wildlife Officers at Fishing Pond over the last few weeks. This culiminated in a very ugly incident on 1987 April 28 when 7 - 8 drunk, potential poachers, armed with sharp cutlasses surrounded the wildlife vehicle, became very abusive and threatened to "kill ah Game Warden" (Appendix 2). Fortunately, also present on this patrol of unarmed Forest Officers, was a Regiment Sargeant armed with a self-loading rifle. When his presence in the darkness of the patrol vehicle was observed by one of the men, a signal was sent to his colleagues to retreat and they did so amidst threats of a later ambush on the only road out.

4 - 96-

- 2.1.6. A recommendation for Coast guard or Regiment assistance was made following this terrible incident (Appendix 2).
- 2.1.7. The recurring story of limited wildlife protection staff is relevant (18 for the entire country). These officers, in addition to undertaking turtle protection, are under extra pressure at this time to deter poaching of game animals which are vulnerable to poachers due to the stress of limited food and water imposed by this very severe dry season. Even with the assistance of Wildlife Research staff (9) during the turtle-nesting season, protection is inadequate.

2.2. Public education

2.2.1. Field Trips: Scores of citizens have already been taken, during the 1987 season, by Wildlife section staff on patrols to view nesting turtles. The Wildlife Section uses these opportunities to educate the public directly about the plight of leatherback turtles and need for protection. Among those taken so far were school children, UWI and ECIAF students, staff members from IMA and CADP, members of the Scientific Association of Trinidad and Tobago, one journalist and ordinary citizens.

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Since 1983, hundreds of nationals (and foreigners) have been sensitised directly on the beach by the Wildlife Section about turtle conservation, and this has borne fruit at Matura where volunteers go on their own, after initiation by the Forestry Division, to assist in protection. Fishing Pond has not attracted a similiar cadre of volunteers.

2.2.2. Media Exposure: Cartoons with effective messages have been hand delivered to the Department of Information since 1987 April 14 (Appendix 3) requesting media exposure but to date none has been published. A recent call to the relevant press officer indicated that it was not hitherto considered. important but he would do whatever he can now to help.

> During April, arrangements were made through the Public Relations Officer for this Ministry, at the Department of Information, for an appearance on T.T.T. to highlight wildlife issues. 1987 May 15 had been scheduled for discussion on wildlife conservation in general, and on specific issues such as turtle protection and the effect of fires on wildlife.

3.0. DISCUSSION

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- 3.1. The limited, but very dedicated staff of the Wildlife Section are unable to effectively protect nesting turtles without:-
 - (a) Declaration of Matura and Fishing Pond Beaches as Prohibited Areas during the Turtle nesting season.
 - (b) Assistance from the Coast Guard, Regiment and Police Service.
 - (c) Precepts, arms and communication equipment for Wildlife Officers.
- 3.2. The downturn in the economy has seen an unprecendented attack upon all of the natural resources of the country and illegal, but lucrative ways of making money will increase. Turtle poaching for meat and eggs is a potentially lucrative "business".
- 3.3. The Fisheries Act, Ch.67:51 allows for harvest of turtles at sea during an open season October - March annually. Females are more likely to be captured since they are more vulnerable to capture during the open season while on their way to shore to lay eggs (males remain out at sea). Besides, fishermen are unable to sex turtles at sea before capture!
- 3.4. Media exposure is required. During 1983/85 when an Express journalist, who was also a concerned conservationist, supported the Forestry Division's efforts by publishing articles and cartoons, public interest was heightened. Concerned citizens responded by making reports to the Division on poaching activities and on offending turtle meat vendors. Since the departure from Trinidad of this journalist, efforts for publicity through the then Ministry of Information were unsuccessful.
- 3.5. A Public Education/Public Relations Unit dealing with Environmental Education is required in-house within the Ministry of Food Production, Marine Exploitation, Forestry and the Environment to develop educational/public awareness programmes to deal with these and other important conservation/environmental issues.

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4.0. RECOMMENDATIONS

4.1. The Regiment should be approached to assist the Wildife Section in protecting the leatherback turtle.

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- 4.2. Early establishment of the National Environmental Office of the Ministry to undertake, as one of its primary functions, a massive public education drive on environmental issues (Ref: "Guidelines for Environmental Administration" 1987, April 24).
- 4.3. Declaration of Turtle Nesting Beaches at Fishing Pond and Matura as Prohibited Areas for the 1988 Turtle Nesting season. (Ref: "Background Report, op cit 1:8 above).
- 4.4. Amendment of the Fisheries Act (Ch. 67:51) to remove harvesting of marine turtles.
- 4.5. Attendance by Graduate Trainee N. Gyan at an International Turtle Conservation Workshop in Puerto Rico October 1987 (Appendix 4).

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APPENDIX II

On Tuesday 28th April, 1987 at around 9:30 pm while preparing to loove our vehicle PAG 8547 from its parking point in the Windbelt Reserve to proceed to do a Turtle Patrol, a yellow Mitsubishi Pickup, registration No. TAD 2586 pulled alongaide our jesp and parked. There ware seven men. Having recognized us to be Forest Officers, there was an air of silence. Forestor I, Farrier flashed his light in the tray of the vehicle, before he could of said anything, the eldest of the men started to cursa him in the worst obscene manner, and threatened his life. At this point our silence was broken, I asked the threatmaker the reasons for his behaviour, I too was cureed and threatened. While I spoke to him the other man armed themselves with cutlasses and began an outburst of threats towards all of us, they also mentioned of being badly treated by Game Wardens in the past while making a cook at the river mouth on the said beach. While all this commotion was going on, the officers maintained their silence. Just then, one of the men from the Pickup walked around our jeep where he came upon Sargeant Rose from the army who was standing quistely in a hiding position with his automatic five shooter in his hand. Having esen this, he walked quickly back to his friends and said something secretely to them which prompted them to board the pickup and laft. While leaving, they said its one way in and one. way out and they would be waiting for us.

The impression we got of these men is nothing else but to slaughter turtles. On the vehicle were one small fish net and seven cutlesses.

The situation at Fishing Pend is worsening. If Sergeant Rose was not around, the situation may have gotten out of hand and the officers lives would of been in danger. Given this incident, I note with great regret the inability of those in authority to understand the case made out in the past for wildlife officers to be properly armed, sepacially on such exercises.

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Finally, I wish to recommend that future patrols especially at Fishing Pond be strenghtened with at least two officers with guns and handcuffe.

Ufficars on patrol were - forestur I Farrier, A.A.I Wiltshire, Sergsant Rose and Ramdeen, Checker.

Submitted:

David Boodoc.

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Ac, Come. y Forests, This is an example of one of the more serious incidents at Fiching Pond Beach this your, slaughtering of turtles has increased in the area alsophie an efforts to prote nosting leatherbucks. Threats have been moved it Fishing And by prachase this you that they "must kill at healt one Same Vandan berruse they harassing we too much". This area is longly isolated and as the purchase said there is my one work and out, Wildlik Officer and like sitting ducks is this arra. I appeal to you to use your your (1) Have the area declard, as officie to a Prolitity are during the posting search as was required since iger, and (i) Seek the assistance of the Court / sur la Re in for protecting bruthe walk that Report-r -from officers an top

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APPENDIX 11 (cent'd) -103-From Torester J J Tarner To Head up Wildlife Saturda Dr. Guel Florer 1163 Graduate Creation () Davis Kilosilor Subject Report on cardan threat to affirm at Finling Pond on number Research trip. Ch Thesainy 28th April 1957 a party consisting of There will sure due, Surgest & Rese (TTR), Dowid Bender FRI -F Randien Chiner, S. Nedd (MUO) and J. Famer (FOR 1) undertook a trip to Fishing Panel Beach to collect Daric date from any turtles which may have come up to lay On cerebring the bridge to the cice paddier we observed a vehicle upposed ing the tribe and its way out. The driver was instructed to step short of the bridge of that we may step and check the vehicle. This we did, properly identifying ourselves and our purpose there. Immendiately the three ecuspants of the miking started using observe language towards us and saying that " this is not a caldon van "Alter about two minutes -they drove gff alter we had shone our lights in the tray and cabin (which weredevoid of turtle or turtle parts). We next duided to chuck at Mr A. Laban's (a known affender) here to see if any vehicles were there (none were observed) which would inducate the possibility of possibility on the beach. Afterwards we ventured to the entrance on the beach. On reaching the parking area we noticed another prik-up parked in the area. The officer then readied themselves, that before we could have the jup a vehicle's lights were seen approaching. We owitched off all our lights and awaited their arrival on reaching the jeep the anier apthe vehicle me along side the jeep

and triad the ann me over Cushy will a quick jump ende was to able to get anong with but the struct of the point To shill Marght Sittle of the annality Ili Migan Healtypic current to the several (7-5) or curponity vehicle (TAD 2586 Yellow Mitsubishi pick-up). At the point Ramidace was remembat already along the trail engine else was on the right side of the pelicit and I was outlie to the angastic ounders the angastic of the vehicle started suging that their and faither and that their Dirend deave to get some more. Donce of them started take ant cutlasses and checking a cast-net which day in the cl trany of their von CC. At this point I walked around the benk of the van to the other side to strind next to B wittshire. I did no so with my actuar in case and my torch off. Andente ne in reaching Wiltshire's side and of the group started cai cursing me and accusing me of watching in his trang. He vic then darted threatening to chop me and started to shine his _hav torch in my eyes. Being blinded by his light I immediate iss owitched my forch on and ohone it back into his yes The man started to incite the others to chop me and of i opened the left door of the vehicle and pull out a with regi I. immeadrately pulled out my cutlass in anticipation sp∈ of an attack The man continued curring and threaten whilst one of the group tried to make peace by saying that the ~rob man curring was under the influence of alushol. This abuse 's a continued for some time, before one of the men went to Druck of our jup to ask savejent Rose for a light the for his agarette. On reing Rose with his gun pointed et the others he went back to the van and told the others whe he sens All the while the abuse reat and names

22-5-5-5 L members of the North Patro were being called (whitties and "gus" -- This famswak) in connection with the some overherning of the Man men's food on some previous occasion, the . lealiging that one of our party had a gun they Min C started to leave but not before the man who was 1. even threatening to chop me came directly up to me ording me sitter C to move as he was "coming through" I stood my ground, ready ille i to counter any blow which may be forth coming, but the man 1_three after curring and threatening, turned and went into the vare taki They then drove away cursing and dureatening that we in th would not be able to leave Fishing Pond that night. + the I did Submitted by <u>adente</u> James Davit S.C. Enclorse C by id ! vj. He c his Raugher - (ch nerdiate is ryes (2) and DCF 2 withan This report is similian to that ation of F RI Boodoo on preater Protection Officia May w the ats at the dircuss JF/05/12. 2 buse ut to lightted at 21 wh

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Reference 1987, April 14.				

The Press Officer Department of Information ST. CLAIR.

Attn: Mr. Cuthbert Alexander.

Dear Sir,

Enclosed are some Cartoons on the Leatherback Turtle, Dermochelys coriacea for publication in the printed media. They have been prepared by the Forestry Division's artist, Mr. Garry De Freitas to highlight the plight of this species which is endangered worldwide. Please note that these are the originals and it will be appreciated if they can be returned after Use.

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The Leatherback is a migratory species of marine turtle which nests on the North Coast and North-East Coast beaches of Trinidad and some beaches in Tobago during the months of March to September. Despite its protected status in Trinidad and Tobago, people continue to slaughter this turtle as well as poach the eggs that are laid. The latter is very serious since this action destroys the potential for population increase.

Already for this nesting season (1987), carcasses have been observed at Fishing Pond, Matura and Grande Riviere Beaches in addition to poaching of the eggs that were laid.

The Wildlife Section feels that by undertaking a media blitz starting with simple and effective messages as contained in the enclosed cartoons, Trinidadians and Tobagonians will become sensitised to the 'need for protecting this important wildlife resource. Follow-up in terms of articles, both popular and scientific is also planned.

Thanking you for your kind consideration.

yours sincerely

Nada Northan - C

/f/ Dr. Carol James Head, Wildlife Section.

c.c. Garry De Freitas, Artist. NNG:jcc.

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SECOND WESTERN ATLANTIC TURTLE SYMPOSIUM — WATS II —

ELS SEA TURTLES OF THE WESTERN AT RAL RESOURCE LANTIC ARE AN IMPORTANT NATU-CAN USE IN SELECTING RATIONAL THE POPULATION SIZES AND TO PROVIDE BETTER ESTIMATE RESEARCH IS REQUIRED MANAGEMENT OPTIONS FOR ITS SEA TROLLED EXPLOITATION. TIONS COULD BE RESTORED TO LEV THE REGIONAL ECONOMY IF POPULA-**URTLE RESOURCES** SIGNIFICANT DATA WHICH EACH COUNTRY WHICH WOULD THAT WOULD MAKE CONTRIBUTION TO OF REGIONAL PERMIT CON-TO GET A FURTHER

The first Western Atlantic Turtle Symposium, held in Costa Rica in 1983, brought together government representatives from 35 countries to discuss the status of the sea turtle resource and problems related to its management and conserva-

sions. opportunity for public response to the panel discus-WATS II is by invitation. The Symposium, howand workshop wide symposium consisting of discussion panels will be held at the University of Puerto Rico. pants are encouraged to provide information on ever, will be open to the public and there will be Mayagüez, in October 1987, and will be a region-The Second Western Atlantic Turtle Symposium exhibition. the regional sea turtle resources through the poster lion There will be no invited papers, but particisessions. Participation. in the

Symposium activities are sponsored by the Intergovernmental Oceanographic Commission and its Sub-Commission for the Caribbean and Adjacent Regione (IOCARIBE).

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The Objectives of WATS II are:

- 1. To upgrade the Data Base for sea turtle populations in the Western Atlantic.
- 2. To present and validate these data at an international public symposium.
- 3. To prepare, an updated report on the status of stocks of sea turtles in the region.
- 4. To assess the effectiveness of regional sea turtle management, conservation and protection activities.
- 5. To identify future sea turtle research needs.
- 6. To promote appropriate international cooperation in research and management of sea turtle populations.

WATS II is promoting, sponsoring, and supporting sea turtle research, surveys, and data acquisition throughout the western Atlantic area. The research emphasis for WATS II. for 1985-1986-1987, will be in two important areas:

- 1. Documentation of sea turtle nesting on the major nesting beaches for *Chelonia mydas* (Costa Rica). *Lepidochelvs kempi* (Mexico), *Lepidochelys olivacea* (Suriname), *Dermochelys coriacea* (French Guiana and Costa Rica), *Caretta caretta* (Florida), and for *Eretmochelys imbricata* in its more dispersed nesting everywhere it occurs.
- Documentation of sea turtle mortality, especially exploitation of subadults, adults, and eggs and destruction of nests by any factors.

The WATS II data report forms have been revised, and the WATS computerized data base has been reorganized. Requests for data report forms and submissions of data to the international data base should be sent to the SECRETARY WATS II.

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APPENDIX IV

N-Gyan, N.(1984). Marine Turtle Management in Trinidad and Tobago with specific reference to the leatherback turtle.

SECOND WESTERN ATLANTIC

TURTLE SYMPOSIUM

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ACKNOWLEDGEMENTS

My grateful thanks are extended to Dr. Carol James,Head, Wildlife Section for the time spent in reviewing this report. Her excellent comments have been of tremendous help, and they are incorporated in this production.

第二日のためからないとう こうちょうかん ちょうちょう

Thanks are also extended to Forester I R. Singh, and Forest Ranger II L. Lendore who worked closely along with me on this project; to Ag Game Warden II U. Whittier and Game Warden r

G. Thompson for supplying information on the 1983 and 1984 Nesting Season; and to the other Patrol Officers who in their own special way have contributed to this project.

The kind assistance of the Drawing Office, Forestry Division in supplying Figures 1 and 2 is gratafully acknowledged.
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7	REFERENCESPg	17

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1. INTRODUCTION

TANONOLY OF THE LEATHERBACK TURTLE :-

PHYLUM - CHORD.T. OLIOS - REPTIMI -ORDER - THEATUDIN.T. FAMILY - DERMOCHEMID.E GEMUS - <u>Dornochelys</u> SPECIES - <u>coriscea</u> COMMON MAME - LEMILERB.CH FURTLE LOCAL RAME - CALDON

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Marine Turtles, especially the Leatherbecks <u>Dermochelys coriaces</u>, have always generated great interest arong the naturalists and populace of Trinidad and Tobago. During the nesting season, it is not unusual to see as many as two hundred people (200) viewing nesting leatherbacks on a particularly good moonlit night. Nesting Leatherbacks present a unique spectacle, and people who are fortunate to witness this phenomenon never forget the experience.

The Leatherback Turtle is listed as <u>"indervered Worldwide</u> under the United States Endangered Species act. In Trinidad and Tobago, protection is afforded under the Fisheries Ordinance, Chapter 67 : 51 of 1975 which is known as the Protection of Turtle and Turtle Eggs Regulation. This act makes provision for the prosecution of anyone who captures, kills or mutilates, any marine turtles or removes their eggs from the beaches where they nest. The Conservation of Mildlife act, Chapter 67 : 01 also makes provision for the prosecution of anyone who kills, wounds, pursues, capture or molests by any method, any animal implied in the definition given for the worl <u>animal</u> in section 2 which reads "animal means any mammal, bird or <u>reptile</u> and includes the eggs, carcass, meat, nest or young thereof. The Leatherback turtle is a migratory species of sea turtle which nests predominantly on the North and North East Coasts of Trinidad (Fig I) and some of the beaches of Tobago (Fig II) during the months of March to September. The Hawksbill <u>Eretmochelys imbricata</u>, Green Turtle <u>Chelonia mydas</u>, Loggerhead, <u>Caretta caretta</u> and Ridley <u>Lepidochelys olivacea</u> also nest in Trinidad and Tobago, but they are not as common now as the Leatherbacks. のないで、「「「「「「」」」」」

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The Leatherback furtle, is quite easily the <u>largest</u> of all the species of marine turtles with an average weight of three hundred and sixty four kilograms (364 kg) and measuring anything between 1.5 to 2.0 metres. It is immediately distinguishable by the absence of all cornified epidermal structures and instead the carapace has the texture of hard vulcanized rubber.

Nesting takes place at night with the average clutch size numbering from eighty to one hundred eggs (80-100).After an incubation period of sixty to eighty (60-80) days, the hatchlings emerge. Of this, only about five to ten percent (5-10) may survive to adulthood. The nesting leatherback is a relatively impertubable animal and it is at this point, that they are most vulnerable to predation. In Trinidad and Tobago, leatherbacks are exploited for their meat and eggs and therefore, it is not unusual to find many poachers on the beaches during the nesting season, hunting the turtles and their eggs. Ray and Coates (1958) commented that, although not used commercially, the flesh eater from a leatherback captured in the Gulf of maine "tasted like sirloin, but with a touch of the gaminess of venison."

It is felt, that almost twenty to thirty percent (20-30%) of the nesting leatherback population in Trinidad and Tobago is being killed each year. In 1984 (see table II) a total of twenty two(22) carcasses was counted as compared to seventy eight live sightings, putting the percentage to twenty-nine (29). The eggs are also dug up and taken, thus destroying the potential for future population increase.

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2. EXISTING MANAGEMENT STRATEGIES: -

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2.1 TRINIDAD: - In Trinidad one of the management strategies being employed, takes the form of patrols to ensure that the leatherbacks are afforded the protection needed while nesting on the beaches. Occasional patrols were conducted during 1982 by Forestry Division Personnel. These Patrols were undertaken on a regular basis by the Wildlife Section in conjunction with the North East Conservancy of the Forestry Division during the 1983 nesting season (March -August). This was continued in the 1984 nesting season, again employing the services of the previously mentioned sections of the Forestry Division. At Fishing Pond, a resident watchman was hired on a week to week basis from the month of June, 1984. External agencies such as the Field Naturalists Club also carried out patrols during this period on a regular basis. Patrols were concentrated at Matura Beach, Fishing Pond and Manzanilla. Previous to this period, dating as far back as the 1940's, regular patrols and tagging exercises were carried out by the Field Naturalists Club.

Educating the public was another management practice carried out by the Forestry Division. This mainly took the form of "education on the spot." Patrol officers would converse with anyone they met, explaining why there was such an urgent need for the conservation of Marine Turtles, especially Leather-backs in Trinidad and Tobago and indeed the world. Articles were also written and distributed to the public, for example "Endangered Species - the Leatherback Turtle" by Dr. Carol James in the Booklet entitled "Highlighting Wildlife -Basic Information on Wildlife Conservation in Trinidad and Tobago" (September 1983).

From time to time, the Forestry Division is consulted on development matters which affect the environment and hence the Wildlife occuring there. Such was the case, when Superior Sands Ltd applied to the Quarries Advisory Committee in 1982 for a lease to remove sand from Matura Beach for use primarily in the

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oil industry's gravel-packing process. Forestry Division recognizing the need for the wise and multiple use of our natural resources, was represented by Dr. Carol James, Wildlife Biologist and Mr. R. Bickram on a committee set up to evaluate this proposal. Permission to quarry sand was granted in 1983 during the non-nesting season under very strict conditions. Two recommendations were made that are

especially important to the welfare of marine turtle nesting and the protection of its habitat. They are outlined as follows:-

- Continuous monitoring of operation by relevant government bodies and conservation Groups should be undertaken to assess the impact on the physical and biological environment, and
- Operations should cease within two months if advised to do so in the event that ecosystem damage becomes evident.

Evaluation of nesting areas was an ongoing exercise wherever and whenever patrols were carried out.

The number of Turtles seen, both dead and alive for the 1983 and 1984 nesting seasons is outlined below in Table I and II respectively.

TABLE I

NUMBER OF LEATHERBACK SIGHTINGS FOR 1983 SEASON

LOCALITY	No OF PATROLS	SIGHTINGS LAID DID NOT LAY TOTAL			CARCASSES
MATURA	13	4	1	5	NIL
FISHING POND	2	-		-	8
FOTAL	15	4	1	5	. 8

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TABLE II

NUMBER OF LEATHERBACK SIGHTINGS FOR 1984 SEASON

LOCALITY	NO. OF PATROLS	SIGHTINGS			CARCASSES	REMARKS
ſ		LAID	DID NOT LAY	TOTAL		
MATURA	33	56	13	69	8	7 Hatchlings were seen. 1 Hawksbill also seen.
FISHING POND	7	21	-	21	11	Watchman reported a range of 5-6 per night during the pea season (June- July). 1 Hawksbill sighting also reported.
ANZANILLA	2	1	-	1	3	
OTAL	42	78	13	91	22	

TOBAGO In Tobago, present management is strictly via patrols, organized by "Club Crusce" formed in 1982 and headed by Mr. Stanley Beard.

This club is an arm of the Institute of Marine Affairs Extension Services and Natural Resource Programme.Patrols are done on an irregular basis utilizing the services of young interested persons such as Youth Groups and School children.

Before this period, patrols were also carried out by the Fisheries Division in the mid 1970's but this was abolished due to problems relating to costs and transportation. The Society for the Prevention of Cruelty to Animals (TSPCA) also had a programme called "Save the Turtle" which was instigated in 1968 at Turtle Beach. A bounty of \$25.00 was given to any person who did not kill the nesting turtle. This programme was abolished in 1978 because of the financial problems being experienced (money for the bounty was obtained from tourists staying at Turtle Beach Hotel).

Despite these setbacks, to date reports emanating from Tobago indicate that in 1984, there has been prolific nesting of marine turtles.Slaughters have also been significant and a count to June gave results of seven (7) carcasses on Stone Haven Beach, and five (5) carcasses on Turtle Beach. No indication of numbers can be given for the other species because the whole animal is removed.

TRADE IN SHELLS Concerning the trade in shells, there has not really been any close monitoring of this by any person/ organization/Gov't Agency. Occassional trade is still known to occur however on a regional as well as international level, with fishermen being the major suppliers. A few years ago a prolific trade was enjoyed by the"producers" in Tobago.The Handicraft Section of the Ministry of Community Development purchased shells for use in their village programmes as the raw material for making Bracelets, Earrings, Brooches, Pendants and Hairclips. This trade was discouraged about two to three years ago however.

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3. <u>MARINE TURTLE CONSULTANCY:</u> UNDP/FAO Evaluation and Development of Wildlife Resources (TRI/79/011)

The development objective of the above project is "to contribute to the promotion of the conservation and rational utilization of Trinidad and Tobago's valuable ildlife resources for the benefit of present and future generations of its people (TRI/79/011)."

Marine Turtles can certainly be counted as one of Trinidad and Tobago's valuable wildlife resources. Bearing in mind the development objective of the above stated project (TRI/79/011) coupled with the increased occurrences of slaughters of marine turtles, destruction of the habitat, especially Matura beach where sand mining is taking place and lack of public concern for the plight of the turtles, a meeting comprising of the project manager, Dr. John Bindernagel, Ornithologist, Dr. A. Diamond, Wildlife Biologist Dr. Carol James, Loris Fabres of the Fisheries Division and L. Chu Cheong of the Institute of Marine Affairs was held to discuss management of Marine Turtles. Arising out of this discussion, came the recommendation for a three - week consultancy on Marine Turtle Management. This was awarded to Dr. Peter Pritchard, vice President of the Florida Audubon Society for the period June 20 - July 13.

The specific objectives required under this consultancy are outlined below:-

3.1 Field survey of marine turtle nesting areas.

- 3.2 Evaluation of nesting areas with regard to value for turtles, land-use conflicts, and potential value for tourism.
- 3.3

Review of existing information collected over the past fifteen (15) years and initiation of analysis of these data.

3.4 Recommend management measures to control turtle harvest, and protect nesting areas.

3.5 Train personnel from Forestry Division, Institute of Marine Affairs and Field Naturalists Club in surveying nesting areas, monitoring turtle use of these areas, collecting information and

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analysing this information.

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3.6 Preparation of a report describing marine turtle nesting in Trinidad and Tobago in the context of the Caribbean region, and summarize findings.

Staff assigned to Dr. P. Pritchard, Marine Turtle Consultant comprised of Graduate Trainee, Nadra Nathai - Gyan, Forest Ranger II Leo Lendore and Foresters I, Roopnarine Singh and Chunilal Boodram of the Wildlife Section of the Forestry Division.

During the three-week period, areas evaluated were parts of the North Coast namely Blanchisseuse to Toco, parts of the North East Coast namely Toco to Manzanilla and the Moruga Bay area of the South Coast. Table III summarizes the findings of the above Research Team paying particular attention to sightings and description of the habitat.

TABLE III

EVALUATION OF MARINE TURTLE NESTING AREAS-JUNE-JULY1984.

LOCALITY	• SIGHTINGS		CARCASSES	DESCRIPTION OF AREA		
	ANIMALS	NESTS	-			
BLANCHISSEUS BAY	Ξ	-	3 Costal Bones of an adult Hawksbill seen.	Rocky Beach.		
ARIA BAY	-	25 (Old and New)	1 Leatherbac 1 Scute of a adult Hawksb	k Very wide sandy beach with incline suitable for marine turtle nesting especially Leatherbacks.		

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	LOCALITY	• SI6	SHTINGS	CARCASSES	DESCRIPTION OF AREA
		ANIMALS	NESTS		
	NURPHY BAY	2	5-6	-	Very wide sandy beach with incline suitable for marine turtle nesting especially Leatherbacks.
	PETIT TACAR	в —	seen but not counted	-	Very wide sandy beach with incline suitable for marine turtle nesting especially Leatherbacks.
	GRAND TACAR	IB 8 (Hatchlings also seen)	many but not 5 counted	-	Very wide sandy beach with incline suitable for marine turtle nesting especially Leatherbacks.
_	MADAMAS	-	seen but not counted	-	Very wide sandy beach with incline suitable for marine turtle nesting especially Leatherbacks.
_	MATELOT	_		-	Rocky Beachnot suited for Leatherback nesting.
_	PARASOL BEAC	н –	1	-	Small sandy beach.
	GRAND RIVIER BEACH	?Е —	many seen	Eggs are dug out by stray dogs and shells are predominant on beach.	Coarse sandy beach
	BIG BAY	-	5	-	Coarse sandy beach

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CARCASSES DESCRIPTION OF AREA • SIGHTINGS LOCALITY ANIMALS NESTS MATURA many seen 3 Sandy Beach generally strewed _ with rubble from the sea. Some areas are wide and have slopes allowing for .good nesting areas. Other areas were subjected to erosion as a result of sand-mining. Meeting was held with Quarries Advisory Committee concerning same on site. FISHING Sandy Beach generally strewed 2 many seen POND (one hour old) with rubble from the sea. Some areas are wide and have slopes allowing for good nesting areas. : 1-١. MANZANJLLA Does not seem suitable for 1 nesting -sand is interlaced with gravel and tar. LA LUNE Leatherback Beach sand is very firm Bone collected. and rocky. 2 Green Turtles

*Sightings refer specifically to Leatherbacks.

Actual sightings were minimal because most of the evaluation took place in daytime.

A more detailed report taking into consideration all of the objectives ^{outlined} before will be complied by Dr. Peter Pritchard, Marine Turtle Consultant (UNDP/FAO Evaluation and Development of Wildlife Resources Programme).

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Marine Turtle Management to date has been restricted to patrols. This has not been round the clock because of the lack of adequate manpower and the length of time required for each patrol. Patrols were two nights weekly during the nesting season (March -August) and manned by Officers from the Wildlife Section and North -East Conservancy of the Forestry Division. These Officers also have their normal duties assigned to them which have to be completed within a set time-frame. Therefore, it is only officers who are really concerned about Wildlife Conservation who performs effectively on these patrols - a. total of about twenty (20) officers. Patrols took place normally during the the hours of 6.00 pm to 3.00 am. Many Officers preferred to be at home sleeping, rather than walking the beaches in order to afford protection to nesting leatherbacks and their eggs.

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Another constraint which affected the patrols was the uncertainty among Forest Patrol Officers concerning the laws as outlined in the Fisheries Ordinance protecting Turtles and their eggs. Under this regulation, only Fisheries Officers are empowered to lay charges for any offence(s) committed. However, since provision has been made in the Conservation of Wildlife Act, Chapter 67:01, Section 2 for the prosecution of anyone caught committing an offence(s) with regards to Marine Turtles and their eggs while on land, this did not prove to be an overwhelming problem.

Using patrols and evaluation of nesting areas over a period time as the basis, there seems to be a clear indication that population level of the Leatherbacks in Trinidad has increased. This is also reflected worldwide in that the latest world population estimate of 115,000 mature females done by Pritchard (1982) is far greater than the previous world population estimate of 29,000 to 40,000 mature females made by Pritchard (1971). This increase is accounted for by the discovery of one large population of breeding females in Pacific Mexico. As a result, Dr. P. Pritchard has stated that he no longer believes the Leatherback turtle to be endangered, but there is still need for monitoring of population because it can easily be reverted to a. critical status. One of the reasons forwarded for this increase is the success of the patrols that were carried out over a period of time (as has been noted before patrols started a long time ago by the Trinidad and Tobago Field Naturalist's Club and TSPCA). It is believed that the protection afforded to the nesting leatherbacks and their eggs by these patrols have resulted in this increase as at 1984. Whether this is short-lived or cyclical remains to be seen in 1985 nesting season.

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Game Warden II, U. Whittier in charge of the 1983 Patrols has stated that the amount of sightings made in 1984 was greater than 1983 (see Table I) The situation was also true for carcasses, in that the sightings for 1984 was far greater than for 1983. One of the reasons for this increase in number of carcasses sighted was the increased monitoring carried out in 1984. The primary cause however was the easy accessibility to the area since there is a road going straight down to the beach.

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As a result of direct observations on the nesting 4eatherback Turtles by patrol officers the peak nesting season was determined to be during the months of June-July. During this period it was not uncommon to see as much as ten nesting leatherbacks on any one night. While on patrol on the night of June 20, 1984 ten leatherback turtles came ashore. A total of six built nests and laid eggs, while four returned to sea without laying.

During the 1984 Nesting season, evaluation of nesting areas was an ongoing process in <u>all</u> areas where patrols and field surveys were carried out, because of the importance of habitat to the success of nesting and therefore population increase. Leatherbacks are very specific when choosing their nesting areas. Hughes, Bass and Mentis (1967) note that leatherbacks come ashore on stretches of beach that are most easily approached. They cite two probable reasons for this behaviour:-

- a) The skin of the Leatherback is tender and could easily tear or be damaged if the animal accidentally rubbed against or collided with the rocks, and
- b) Leatherbacks, being so large, require plenty of room in which to manoeuvre and therefore, shun rock-strewn areas where their movements may be restricted.

Pritchard (1971) also found that the leatherbacks select beaches with sufficient slope so that the climb to dry land above the high tide mark would not involve a long overland trek. The beaches selected by the leatherbacks all exhibit these characteristics. However, concern must be voiced over the destruction of some of these beaches especially Matura/Salibia area. Here, as stated before, the process of sand-mining by the authorised company and unauthorised persons takes place during the non-nesting season for use in the oil industry. This removal of sand has resulted in the drastic erosion of the turtle nesting area. This is illustrated by the presence of huge craters on the beach and numerous fallen coconut trees on the shoreline. Although, nesting leatherbacks are one of our valuable Wildlife Resources, they do not contribute directly to the economy of our country and as such whenever there are conflicting land-uses, the nesting leatherbacks come out the losers in the battle. The problem lies in the fact that it is difficult to foresee the long-term potential importance of this wildlife resource. If the oil industry should no longer be economically viable, it is highly possibly that there

longer be economically viable, it is highly possibly and can be rational harvesting of the leatherback for its meat and generation of revenue from the development of this resource as a tourist attraction.

The beaches are also polluted with rubble from the sea and visitors to the areas, leaving only small areas suitable for marine turtle nesting. This results in serious consequences for the nesting turtles since according to Dr. P. Pritchard, each beach has its own colony of nesting turtles. If beach is lost by any factor(erosion, pollution), some turtles cannot adapt to another areaa and are known as <u>waifs</u>. Others however can act as <u>pioneers</u>, colonizing new beaches.

Exploitation of marine turtles for their meat, eggs and shells has always been a serious problem through the years. This situation is no different in Trinidad and Tobago and from interviews conducted with fishermen in turtle-nesting areas it was learnt that the Green and Hawksbill turtles are hunted more than the other species.People claim that the meat has a better taste and the turtles are easier to

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handle. Legend has it that marine turtle eggs have **e**phrodisiacal qualities and in Trinidad eggs are greatly exploited for this reason. The shells obtained from the turtles are also traded

reason. The shells obtained on a regional and international basis for use in the handicraft industry.

Table II indicates that during the 1984 nesting season, a total of twenty-two carcasses of Leatherbacks was counted. This is not believed to be a true indication however, since because of increased accessibility to the nesting areas the entire animals may be carried away. This can also account for the lack of sightings of carcasses of the smaller species of marine turtles since they can also be easily carried away.

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- 5.1 Public education in the form of lectures/slide chose, rticles chould be the main thrust at this period of time to approte greater public awareness of Marine Turtles. This should be concentrated in the critical areas such as Fishing Pers), and Matura/Solibia area.
- 5.2 Patrols should be upgraded in the critical area such a Pishing Pond and Matura/Salibia area to allow strictor unforcemont of the low. In cases where it is possible, birdly of resident witchmen should be considered.
- Since Forest officers are the main patrol officers, the laws coverning furthes and their eggs should be clearly discominated to them, perhaps in the form of lectures/discussions before the season conserves to ensure that no conflict arise while they are performing their duties.
- 5.1 In pril 1984, Trinided and Tobago becare a sign for to the Convention on International Trade in Endangered Species (C.I.T.E.C.). Careful monitoring of trade especially in Marine Turtle chelle should be a must.
- 5.5 Protection of costing eress should be a refully considered. It Metaric and Miching Fond areas protected status derive, the meeting secon should be granted. It would be ensued therefore to monitor the emount of type of people entering the area.
- 5.6 Conflicting land use problems of the Turtles! hebited chould also never be allowed to surface, especially where the algo is usually given to the one which generates greater or direct revenue for example, and mining at Matura Beach.

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60 Ly I well-bord, ad wildlife resource can only enhance the mich and variad heritage of wildlife of Trinidad and Tobago. It will also be one of the attractions of the tourist industry and will therefore contribute to the diversification of the aconomy of the country. The conservation of genetic resources by this means will also contribute to recearch in general.

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<u>Conserv tion</u> which simply means the wise use of our mounal resources is concept of grave importance to the wildhild cotion of the Forestry Division. Hence, the reason for placing <u>management</u> of our wildhife resources high on our priority list.

-150--17-REFERENCES :-7. 7.1 ...shby, Michael - Personal Interview (Hin. of Community Development 7.2 Dr. Becon, Poter - Flora and Fauna of the Coribbean 7.3 Beand, Stanley - Personal Interview (Institute of Marine Affairs) F: 4/9/3 7.4 - Wildlife Reports - Reptiler. 7.5 Dr. James, Carol - Highlighting Wildlife - Bubic Information on Wildlife Conservation in Trinidad and Tobago. 7.6 Dr. Pritohard, Peter - Encyclopedia of Sea Turtles. 7.7 Dr. Pritchard, Peter - Nesting of the Leatherby of Wurtle in Pacific Mexico with a new estimate of the World population status - Copeia 1982(4) pp. 741 - 747. 7.8 Telranc, Desmond - Personal Interview (The Cociety for the Prevention of Cruelty to Animals - WURCH). TRI/79/011 - Evaluation and Development of Wildlife Resources 7.9 7.10 Wildlife Section - 1983 Nesting Season Petrol Officers. 1984 Nesting Season Patrol Officers.

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APPENDIX V

Excerpt from "Sunday Punch", 1987 June 07 - King of Sex Drinks by Ian Smith.

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APPENDIX VI

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Excerpt from Milliken, T. and H. Tokunaga (1987). The Japanese Sea Turtle Trade 1970-1986. A special report prepared by Traffic (Japan) Pg. 96.

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Bekko

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Although no trade was reportedly received from Trinidad and Tobago between 1970 and 1982, imports of bekko from these islands suddenly appeared in the Japanese Customs data in 1983 1984, and 1985 for a total of 1,081kg (Appendix 1). In 1986 the trade halted altogether. This occurred after the CITES Management Authority of Trinidad and Tobago confirmed to TRAFFIC (Japan) that 63kg of bekko exported to Japan in 1985 after the Convention had come into force were not authorized with proper CITES documents (James, <u>in. litt.</u>). Subsequent enforcement efforts on the part of the authorities have apparently met with success.

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Dealers' data reported trade from Trinidad and Tobago in 1984 and 1985. These data correlated perfectly with Customs statistics in 1984 (Figure 66).



Figure 66: Comparison of Dealers' Data for Trinidad and Tobago with Customs Statistics 1984-1986

The average weight of bekko per animal ranged from 1.03kg to 1.06kg in the data (Table 1), indicating that at least 1,000 hawksbills comprised the trade between 1983 and 1985.

VENEZUELA

Bekko

During the entire period examined, 1970 to 1986, Venezuela provided bekko to Japan on only two occasions. In 1973, 171kg were received and, in 1986, another 9kg, most probably a violation of CITES, were reported in the Japanese Customs data (Appendix 1). The dealers' data also contained the 9kg import in 1986 (Appendix 8).

APPENDIX VII

Excerpts from James, C. and R. Loregnard (1987). Report of the Trinidad and Tobago Delegation to the Sixth Meeting of the Conference of Parties to the Convention on International trade in Endangered Species of Wild. Fauna and Flora (CITES), Ottawa, Canada -1987, July 12-24.

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Marine Turtle Trade - Carol James and Robert Loregnard (1987)

The French delegation introduced a proposal that <u>C</u>. <u>Mydas</u> be transferred from Appendix I to Appendix II to allow trade in ranched specimens. They attempted to justify this on the grounds that the population in the Indian Ocean islands of Tromelin and Europa is large and stable and that ranching operations were beneficial to the conservation of the species. In addition, they had developed a system of marking of ranched specimens which had been approved by a CITES Technical Committee.

There was considerable debate on the proposal and the eventual consensus was that:-

- (i) The meeting was not convinced that the Europa and Tromelin populations of <u>C</u>. <u>Mydas</u> were out of danger as there was a lack of comprehensive biological information.
- (ii) Approval of the French proposal would create enforcement problems as the marking system was not foolproof. There would therefore be the opportunity for substitution of wild caught specimens into the ranched products.
- (iii) The apparent poor enforcement of CITES in France and evidence that shipments of marine turtle products had entered France through its overseas departments in the Caribbean and South America. The delegations of Brazil, St. Lucia, Trinidad and Tobago and the U.S.A. spoke out strongly against the French proposal. This stand by the Brazil, St. Lucia and Trinidad and Tobago delegations led to strained relations at subsequent Latin American and Caribbean Regional meetings which were attended by France.

The proposal was defeated in a secret ballot and a Working Group was set up which subsequently drafted a Relation on <u>Guidelines for Evaluating Marine Turtle Ranching Proposals</u> Com 6.19. It recommends that a specialist meeting be set up to provide guidelines that take into account biological, economic and trade aspects. The deadline for reporting is 1988 April 30.

The interests of the Caribbean Region is based upon the fact that there were alleged infractions of CITES by Trinidad and Tobago which was used as a transhipment point for marine turtles and turtle products to Japan and to France.Com 1.6.5.

Past collaboration between CITES, Japan and Trinidad and Tobago saw a shift in the centre of operation in trade of marine turtle products from Trinidad and Tobago and other caribbean territories to Barbados, St. Lucia, Martinique and Guadloupe.

The Trinidad and Tobago delegation proposed that this Resolution be placed as an agenda item at the forthcoming meeting of the Western Atlantic Trade Symposium carded for 1987, October 11 - 16 in Puerto Rico. This was unnaminously accepted by the Marine Turtle Working Group and an invitation was extended to the GORTT to send a biologist to represent this country at that Symposium.

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APPENDIX VIII

Excerpts from Groombridge, B. and R. Luxmore (1987). The Green Turtle and Hawksbill (Reptilia Cheloniidae). A draft Report to the CITES Secretariat. IUCN Conservation Monitoring Centre - Country Account for Trinidad and Tobago.

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DRAFT July 1987

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POPULATION: Chelonia mydas

<u>Nesting sites</u> Information is limited. Green Turtles were reported to nest on the north and east coasts of Trinidad, with specific nesting beaches being identified at Mayaro, Matura, Matelot and Big Bay (Bacon, 1973) and Manzanilla Bay (Bacon, 1981). Nesting on Tobago was known to occur at Batteaux Bay and Grafton Estate (Bacon, 1981).

<u>Nesting numbers</u> No numerical data are available. Pritchard (1984) stated that nesting was occasional and probably less common than that of the Hawksbill. Carr <u>et al.</u>, (1982) considered Green Turtle nesting density to be minimal and Bacon (1981) reported nesting to be occasional on both Trinidad and Tobago. When compared with the nesting concentrations in the Guianas (Pritchard 1969) the Trinidad and Tobago turtle populations were considered to be very small, though they were thought to be larger than those on most Caribbean islands (Bacon, 1973).

Trends in nesting numbers No information.

<u>Nesting season</u> Nesting records are sparse; in part using data from nearby populations, Bacon (1973) estimated the nesting season of <u>C. mydas</u> to be February to August.

<u>Foraging sites</u> Pritchard (1984) considered <u>C. mydas</u> to be moderately common in the waters of Trinidad and Tobago and Bacon (1981) reported frequent foraging by both adults and juveniles in the waters around Trinidad. Foraging in Trinidad was known to occur in the Gulf of Paria and on the north coast near Toco (Bacon, 1981), and at Grande Rivière Bay, Soldado Rock and Scotland Bay (Chu Cheong, 1984) Man o' War Bay, Buccoo Reef and Bon Accord Lagoon were identified as foraging sites at Tobago (Bacon, 1981).

<u>Migration</u> There appears to be an important migratory route along the northern coast of Trinidad and Tobago (Carr <u>et al.</u>, 1982). A Green Turtle that had been tagged on the Tortuguero nesting beach (Costa Rica) was later captured in the Gulf of Paria on the west coast of Trinidad (Carr, <u>et al.</u>, 1982).

POPULATION: Eretmochelys imbricata

<u>Nesting sites</u> Information is limited, but the species is known to nest on the north and east coasts of Trinidad and also on Tobago (Bacon, 1973). Nesting on Trinidad has been reported at Mayaro, Big Bay, San Souci, Matelot, Monos Island, Huevos Island and Chacachacare Island (Bacon, 1973); Maracas, Matura, and Manzanilla (Bacon, 1981); Brigand Hill (Carr <u>et al.</u>, 1982); and Macqueripe Bay (Chu Cheong, 1984). The only nesting site so far identified on Tobago was at Bird of Paradise Bay (Bacon, 1973).

<u>Nesting Numbers</u> Bullis (1984) inferred heavy to moderate nesting activity but this seems unlikely as only two confirmed Hawksbill nests were reported by Chu Cheong (1984). Bacon (1981) considered Hawksbill nesting on Trinidad to be rare. Carr <u>et al.</u>, (1982) believed nesting density to be minimal Pritchard (1984) concluded that the species nested rarely on beaches in eastern Trinidad, somewhat more frequently on the north coast beaches, and regularly, though not in aggregations, on the islands of the Boca del Dragon, especially on Chacachacare Island. TRINIDAD & TOBAGO

Nesting season Ingle and Smith (1949, cited in Bacon, 1973) gave the Hawksbill nesting season as June to August in Trinidad. However, using

other observations, Bacon (1973) gave the nesting season as May or June to September. According to Pritchard (1984) an informant at Paria

Beach, Trinidad, reported that Hawksbills nested there in small numbers

Foraging sites Bacon (1981) reports frequent foraging by adult

Hawksbills and gives Salybia Reef and the north coast near Toco as foraging sites in Trinidad, and Buccoo Reef, Man o' War Bay and Bon

Accord Lagoon as major foraging sites in Tobago. Chu Cheong (1984) reports foraging in Trinidad at Macqueripe Bay, Grande Rivière Bay,

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Migration No information available.

Salibra, Salire Bay, Canari Poit and Soldado Rock.

Trends in nesting numbers No information.

EXPLOITATION

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from March-October.

Commodity The sale of meat and eggs of all species and of shell from the Green and Hawksbill supplement the income of many fishermen for short periods of the year (Bacon, 1973). According to Pritchard (1984), the Hawksbill was taken principally for the export of its shell. The Green Turtle was taken largely for its meat and Pritchard (1984) considered the shell and leather to be of little commercial value or importance.

Hunting intensity Lee Lum (1985) reported that six depots were involved in catching sea turtles: Matelot, Toco, Grande Rivière, Mayaro, La Lune and Carenage. Nine other depots were investigated but fishermen claimed not to be involved in turtle hunting. Both Eretmochelys imbricata and Chelonia mydas were caught. Reported weekly catches at each of the turtle catching depots ranged from 4 to 10 turtles, but on one occasion 50 turtles had been caught in one day in 1980 at Mayaro. The number of people gaining part-time earnings by fishing for turtles varied from 1 to 4 at each of the depots. Lee Lum (1985) also reported that fishermen from the south-western depots of Icacos, Fullerton and Cedros had stopped fishing for turtles owing to their scarcity.

Hunting methods Lee Lum (1985) reported the use of special turtle nets with a mesh size of 30 x 30 cm and extending 7 to 8 mesh (210 cm-240 cm) down into the water. They were approximately 30.5 m in length and could be joined to span longer areas. The nets were set in known feeding areas and checked every morning and evening. The majority of turtles were caught at night. Lee Lum (1985) also reported the use of harpoons at Grande Riviere, Toco and Carenage, and noted that at Toco, the Hawksbill was usually caught by harpoon.

Carr (1956, cited by Pritchard and Trebbau, 1984) reported fishermen dragging crude wooden decoys of female turtles behind their boats in order to attract male turtles.

Historical trends Ingle and Smith (1949, cited by Bacon, 1973) stated that 60 000 lbs (27273 kg) of turtle meat were sold in 1947 at the Port of Spain market. About 10 000 lbs of turtle meat was sold through the Carenage, Port of Spain and San Fernando markets in 1970 and most of

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this was Green Turtle and Hawksbill meat. This was only a small percentage of the meat sold as most of it did not pass through the larger markets where state records are kept (Bacon and Maliphant, 1971). Bacon (1970, cited in Bacon and Maliphant, 1971) estimated that in 1969 nearly all of the turtles nesting on the inhabited north coast beaches were killed each year. It was estimated that a catch of 15 turtles in one week in April 1972, held at St David Fishing Cooperative, would yield at least 1500 lbs (682 kg) of meat. According to Lee Lum (1985) it was apparent that turtle fishing activity had declined since the enactment of the 1975 Protection of Turtle and Turtle Eggs Regulations. Fisheries Department figures were collected for 1969, 1970 and 1971 (Table #88) but Bacon (1973) cautions that these are far from complete.

Table #87. Total quantity of sea turtle meat sold. Fishery statistics data, 1969-1980, supplied by Fisheries Division, Ministry of Agriculture, lands and food production. (Lee Lum, 1985)

	Trinidad		Tobago		
Year	Weight (kg)	Value TT \$		Weight (kg)	Value TT \$
1969	5327.9	449 <u></u>			
1970	3975.3	3,137		217.7	344
1971	6627.5	5,966		145.1	171
1972	6711.0	6,922		18.1	24
1973	3592.9	5,488		249.4	400
1974	5324.3	6,430		138.3	305
1975	6101.3	10,922		18.1	50
1976	4103.2	9,555			
1977	2569.8	8,277			
1978	3180.1	11,894			
1979	3836.0	14,476			
1980	67251.2	28,454			
verage	4883	10134		131	216

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Table #88. Fisheries Department statistics on the quantity (in kg) of turtle meat sold at six beaches in Trinidad. (Source: Bacon, 1973).

	1969	1970	1971
Carenage Gran Chemin	5256 - 83	3950 -	4302 1424
Matelot	-	10	- 895
Mayaro San Fernando	-	23	20
TOTAL	5339	3983	6641

Domestic trade Most of the Green Turtle and Hawksbill meat is sold locally, being very popular in the coastal villages (Bacon and Maliphant, 1971). However, turtles caught by fishing boats at Cedros, or even as far south as Icacos, were frequently taken to markets in Port of Spain (Bacon 1973). The retail price of turtle meat was TT\$3.00-TT\$5.00/pound (TT\$6.60-TT\$11.0/kg) at the fishing depots investigated by Lee Lum (1985) and up to (TT\$17.6/kg) TT\$8.00/pound at inland markets. The wholesale price was between TT\$1.00-TT\$2.00/pound (TT\$2.20-TT\$4.4/kg), while turtle carapace sold for TT\$5.00-TT\$18.00/pound at five of the depots. Lee Lum (1985) also reported that some carapace were bought and sent to Tobago. Pritchard (1984) recorded that a considerable proportion of Hawksbill shell caught in Trinidad and Tobago waters was purchased, currently for TT\$15/pound (33/kg), by Hashim Mohamed of Toco.

The carapaces of juvenile Hawksbills were reported by Bacon (1973) to be sold to tourists for TT\$30.00 or more, the smaller ones gaining the higher prices.

<u>International trade</u> A considerable quantity of Hawksbill shell from Trinidad is said to be exported to Japan by a dealer from St Lucia, Charles Fritz, who visits Trinidad (and other islands as far away as the Bahamas) approximately every 3 months purchasing shell for export (Pritchard, 1984). Bacon and Maliphant (1971) considered there was little export of turtle shell from Trinidad. Lee Lum (1985) noted that some carapaces at the depots investigated were bought and sent to England.

Imports of <u>E. imbricata</u> shell reported in Japanese Customs statistics are given in Table #89. It should be noted that, as much of the hawksbill shell from Trinidad is said to be exported to Japan via St Lucia, it may not be reported as coming from Trinidad in Japanese Customs statistics.

Trinidad and Tobago acceded to CITES on 19.01.1984. CITES Annual Reports between 1977 and 1984 record exports to the U.S.A., U.K. and Denmark of a total of 7 <u>C. mydas</u> shells, 3 <u>E. imbricata</u> shells and 1 Cheloniidae shell. うちち ちちちちちちち ちちち しんち

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DRA	T July 1987 TRINIDAD & TOBAGO	5	
Tab Tob rep	e #89. Imports of Bekko (<u>E. imbricata</u> shell) from Trinidad a go, reported in Japanese Customs statistics (kg). No trade w rted in the other intervening years.	nd as	
Yea	1952 '53 '54 '55 '56 '57 '58 '59 '60 '61 '62 '63 '83 '84	'85	. 86
kg	102 0 32 137 131 95 423 0 0 231 755 530 329 544	208	0
1) 2) 3)	Little Tobago Wildlife Sanctuary A hilly, 101-ha island situated one mile off the north-east of Tobago near Speyside, 11°17'N, 60°29'W (IUCN, 1982). St Giles Islands Wildlife Sanctuary. A steep, 288-ha island about 1 km off the north-east coast of Tobago, 11°20'N, 60°30'W (IUCN, 1982). Saut d'Eau Wildlife Sanctuary. An area of 10 ha less than 1 km off the north coast of Trinic incorporating a rocky island, 10°46'N, 61°31'W (IUCN 1982).	iad,	: of
4)	Aronstadt Island Nature Reserve. An area of 4.8 ha in the Gulf of Paria, south-west of Carrer: Island, 10°39'N, 61°37'W (IUCN, 1982).	1	۰.
5)	Soldado Rock. A precipitous rock, situated 10 km west of Icacos Point, 10*(62°00'W (IUCN, 1982).	И'ЕС	,
6)	Bucco Reef/Bon Accord Lagoon Restricted Area. Situated 12 km south-west of Scarborough on a shallow reef ex from the south-western end of Tobago, 11°10'N, 60°50'W. The restricted area covers approximately 650 ha, of which 300 ha terrestrial. Extensive patches of <u>Thalassia</u> occur in Bon Acc	rteno are cord	ding

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7) Arnos Vale Bay Proposed Protected Area. The bay, approximately 1 km north-west of Plymouth, Tobago, 11°13'N, 60°46'W, incorporates a beach, some 150 m long (Wells, 1987).

1987).

Lagoon. D. coriacea and C. mydas have been recorded here (Wells,

- 8) Culodden Bay Proposed Protected Area. Situated approximately 4 km north-east of Plymouth, Tobago, 11°15'N, 60°45'W, the bay incorporates a beach some 100 m long (Wells, 1987).
- 9) Eastern Tobago Proposed National Park. The proposed park would cover an area of 5700 ha off the north-eastern tip of Tobago, including all the land area with the coastal islands (Goat Island and Little Tobago) and marine communities (Wells, 1987).

TRINIDAD & TOBACO

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LEGISLATION

Protection of Turtle and Turtle Eggs Regulations 1975. It is prohibited to take or possess female turtles which are in the sea within any reef or within 1000 yards from the high water mark of the foreshore when there is no reef.

It is prohibited to purchase, sell or possess any turtle eggs. It is prohibited to take, possess, purchase or sell any turtle or turtle meat from 1 March to 30 September.

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The Fisheries Act 1916.

The use of poison or explosives to kill or capture fish (including sea turtles) is prohibited.
APPENDIX IX

1

Conservation of Wildlife Act. Chapter 67.01 of the Laws of Trinidad and Tobago 1958.

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CONSERVATION OF WILD LIFE ACT

CHAPTER 67:01

Act 16 of 1958 Amended by 14 of 1963

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CHAPTER 67:01

CONSERVATION OF WILD LIFE ACT

ARRANGEMENT OF SECTIONS

SECTION

1

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£ 「日本の 1. Short title.

2. Interpretation.

Game Sanctuaries.
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 Hunting protected animals.
 Hunting etc., in state lands.

- 7. Hunting prohibited in close season.
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- Vermin.
 Powers of search and seizure.
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- 15. Punishment for assaulting or resisting Game Warden.
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21. Offences punishable summarily.

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Conservation of Wild Life

CHAPTER 67:01

CONSERVATION OF WILD LIFE ACT

15 of 1958.

An Act to make better provision for the Conservation of Wild Animal Life in Trinidad and Tonago.

Con. Sencement. 40/1963.

[15TH MARCH 1963]

Short title.

I. This Act may be cited as the Conservation of Wild Life Act.

Interpretation. [14 of 1965].

2. In this Act-

- "unimal" means any mammal, bird or reptile and includes the eggs, carcase, meat, nest or young thereof; but does not ir clude any domesticated animal or any animal which has been lawfully kept in captivity;
- "Chief Game Warden" means the Conservator of Forests and includes any officer of the Forest Department authorised by him to act on his behalf;

Fitth Schedule. "close season" means the period of the year specified in the Fifth Schedule:

"State Lands" includes-

- (a) the waste or vacant lands of the State within Trinidad and Tobago; and
- (b) all lands vested in the State whether by forfeiture, purchase or exchange and not dedicated to the public;

"Fcrest Reserve" means a Forest Reserve declared as such by the Land Regulations for the time being in force;

"Game Sanctuary" means any area declared to be a Game Sanctuary in accordance with section 3;

- "Game Warden" means any person declared to be a Game Warden in accordance with section 23(1) and includes an Honorary Game Warden;
- "guz" includes an air-gun, blow-pipe, set gun, sling-shot and any article from which any shot, bullet or other missile may be discharged;
- "hunt" means killing, wounding, pursuing, capturing or molesting by any method, any animal, and also attempting to do

Conservation of Wild Life

any of such things; and includes any act immediately directed at the killing or capture of any animal;

"protected animal" means any animal not specified or mentioned Second and in the Second or Third Schedule. Schedules.

3. (1) The areas, the boundaries of which are set forth in the Sance Sanctuaries. First Schedule, are hereby declared to be Game Sanctuaries. First Schedule.

(2) The Chief Game Warden with the approval of the Minister may by Notification amend the First Schedule by adding thereto or deleting therefrom any area specified in such notice and may alter the limits and boundaries of any Game Sanctuary.

4. (1) Except as provided by sections 9 and 10 any person Hunting etc. in Game who--

Sanctuary.

- (a) hunts or is a member of a party engaged in hunting any animal in a Game Sanctuary; or
- (b) is found within a Game Sanctuary under circumstances showing that he was hunting any animal; or
- (c) takes any dog or knowingly permits any dog to enter or be in a Game Sanctuary for the purpose of hunting; or
- (d) carries in a Game Sanctuary any gun or other weapon or device capable of being used to hunt animals.

is guilty of an offence and is liable to a fine of one thousand dollars or to imprisonment for three months.

(2) Any person found in a Game Sanctuary in possession of any animal shall be deemed to have hunted such animal in such Game Sanctuary unless the contrary be proved, the onus of which proof shall lie upon the person charged.

5. (1) Except as provided by section 10 no person shall hunt Hunting protected or shall be a member of a party engaged in hunting any protected animals. animal.

(2) Any person who----

(a) contravenes subsection (1); or

(b) has in his possession the whole or any part of a protected animal.

is guilty of an offence and liable to a fine of one thousand dollars or to imprisonment for three months.

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Hunting, etc. in State Lands. 6. (1) Except as provided by sections 9 and 10 no person shall—

Second Schedule.

- (a) hunt or be a member of a party engaged in hunting any animal specified in the Second Schedule, in State Lands; or
- (b) be found within State Lands under circumstances showing that he was hunting any such animal; or
- (c) take or knowingly permit any dog to enter or be in State Lands; or
- (d) carry in State Lands any gun or other weapon or device capable of being used to hunt such animals,

save in accordance with the terms and conditions of a licence issued by the Chief Game Warden (in this Act referred to as a State Game Licence).

(2) A State Game Licence shall be in the prescribed form, shall be valid for the period specified therein and shall not be transferable.

(3) Any person who obtains a State Game Licence issued under this section, and is found on State Lands in circumstances showing that he is hunting, shall on demand produce such licence for inspection by a Game Warden or constable, and in default thereof is guilty of an offence and liable to a fine of one hundred dollars.

(4) Any person who contravenes subsection (1) is liable to a fine of four hundred dollars or to imprisonment for three months and to be disqualified from holding or obtaining a State Game Licence for such period as the Magistrate thinks fit.

(5) Any person who, while disqualified from holding or obtaining a State Game Licence under subsection (4)—

(a) hunts or is a member of a party engaged in hunting in State Lands; or

(b) obtains or attempts to obtain a State Game Licence, is liable to a fine of two thousand dollars or to imprisonment for six months.

(6) A person convicted of an offence under subsection (5) shall, without prejudice to the power of the Court to order a longer period of disqualification, be disqualified for a period of not less than twelve months from the date of the conviction from holding or obtaining a State Game Licence, and on a second conviction for a like offence shall be permanently disqualified from holding or obtaining a State Game Licence.

(7) Any Game Warden may arrest without warrant any person found committing an offence under subsection (5).

7. (1) Except as provided under subsection (2) and section Hunting prohibited in close season [14 of 1963]. hunting any animal during the close season.

(2) The Chief Game Warden may, on such terms and conditions as he may think fit, on application made by the owner or custodian of dogs normally used for hunting, in writing, authorise such owner or custodian to exercise such dogs by pursuing agouti and deer in lands other than Forest Reserves and Game Sanctuaries during the close season.

(3) No person authorised to exercise dogs in the manner described in subsection (2) shall, while engaged in such pursuit, have in his possession any gun or other weapon or device for the capture or killing of any animal.

(4) Any person who contravenes subsection (1) or subsection (3) is liable to a fine of two thousand dollars or to imprisonment for six months.

8. (1) There shall be established a Committee to be called the Establishment and Wild Life Conservation Committee. The Committee shall consist composition of Wild Life of the Conservator of Forests as Chairman and not more than Conservation nine other members to be appointed by the Minister as follows:

- (a) one member to represent amateur hunters in Trinidad and Tobago;
- (b) one member to represent field naturalists in Trinidad and Tobago;
- (c) one member to represent the Trinidad and Tobago Police Service;
- (d) one member to represent the Agricultural Society of Trinidad and Tobago;
- (e) one member to represent the Zoological Society of Trinidad and Tobago;
- (f) one member to represent the interests of Cage Birds fanciers:
- (g) one member being a duly qualified ornithologist;
- (h) one member being a duly qualified zoologist;
- (i) one member to represent the Minister.
- (2) Every member of the Committee shall, unless his

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Committee.

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appointment is sooner determined by the Minister or he sooner resigns by notice in writing to the Minister, or he sooner dies, hold office for three years from the date of his appointment but shall be eligible for re-appointment from time to time.

(3) The Minister may appoint any person to act in the place of the Chairman or any other member of the Committee in the case of the absence or inability to act of such Chairman or other member.

(4) The Committee may act notwithstanding any vacancy in the number of members constituting the Committee.

(5) The Committee shall have power to regulate its own procedure.

(6) The Committee shall act in an advisory capacity to the Minister on all matters pertaining to the conservation of wild life in Trinidad and Tobago.

Residents' Licences.

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9. (1) The Chief Game Warden may, on application made in writing, grant to any person who is ordinarily resident within State Lands or a Game Sanctuary, a licence (to be known as a Resident's Licence) to keep dogs, guns and other weapons or devices capable of being used to hunt animals while such person is so resident.

(2) A Resident's Licence shall be in the prescribed form and shall be valid for the period specified therein and shall not be transferable.

Special Game Licence in certain cases. 10. (1) The Chief Game Warden may upon such conditions as he thinks fit, grant licences (in this Act referred to as Special Game Licences) which shall entitle the holder to hunt any animal specified therein for any of the following purposes:

- (a) scientific research;
- (b) collection of specimens for zoological gardens, museums and similar institutions;
- (c) the eradication of animals declared to be vermin by section 11.

(2) A Special Game Licence issued for any of the purposes mentioned in subsection (1) may authorise the hunting of any animal, whether in a Game Sanctuary or not.

Fourth Schedule. (3) A Special Game Licence granted under subsection (1) shall be in the form set forth in the Fourth Schedule and shall state the species, number and sex of each animal which may be

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hunted and shall be limited as regards the period and area within which the hunting is to take place.

(4) The Chief Game Warden may suspend or cancel any Special Game Licence granted under subsection (1).

11. (1) The animals mentioned in the Third Schedule are Vermin. hereby declared to be vermin.

(2) Subject to sections 4 and 6, the owner or occupier of any lands, his agent or servant may, without licence of any kind, on such lands hunt and destroy any animal mentioned in the Third Schedule whether during the close season or not. · · · · · · · · · · ·

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12. (1) If any Game Warden or constable has reasonable Power of grounds for suspecting that any person has contravened any of seizure. the provisions of this Act he may-

- (a) require any such person to produce for inspection any animal in his possession or any licence or other 44.1
- is: a document issued to him under this Act;
- (b) stop and search any person and any vehicle, boat or other conveyance in the possession of such person or in which such person happens to be, and open and search any baggage or other thing in his possession;
- (c) enter and search any tent, building or land in the occupation of any such person; but no dwelling house shall be entered without a warrant except in the presence and with the consent of the owner or occupier thereof;

(d) seize any animal in the possession of any such person;

(e) seize all guns, dogs, boats, vehicles or other equipment which he has cause to suspect was used in connection with any such contravention.

(2) When any person is convicted of an offence under this Act, any animal in respect of which the offence has been committed and all guns, dogs, boats, vehicles and other equipment used in the commission of such offence are liable to be forfeited to the State by order of the Magistrate or to be otherwise dealt with as to the Magistrate may seem just. Such forfeiture may be in addition to any other penalty or compensation prescribed for such offences.

· • • • (3) Where the carcase or meat of an animal is seized under this section, the Magistrate before whom such animal is brought,

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shall, if in his opinion it cannot be adequately preserved, forthwith order the same to be tendered as an exhibit, and shall thereafter make such order with respect to its disposal as may seem to him just and reasonable.

Persons found offending.

13. Where any person is found committing an offence against this Act it shall be lawful for any other person to require such offender to give his name and place of abode, and in case the offender does not give his name or place of abode, or gives a name or place of abode that is false, such offender shall, in addition to any other penalty to which he may be liable under this Act, be guilty of an offence and liable to a fine of one hundred dollars or to imprisonment for thirty days.

Arrest without warrant.

14. Any Game Warden may arrest without warrant any person found committing an offence against this Act whose name or place of abode is unknown to him, and may detain such person at a Police Station until the name and place of abode of such person can be ascertained.

Punishment for assaulting or resisting Game Warden.

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15. Any person who assaults, obstructs or resists any Game Warden in the execution of his duty is guilty of an offence and liable to a fine of one thousand dollars or to imprisonment for three months.

Right of Game Warden to conduct case.

16. Where any Game Warden makes a complaint against any person for an offence against this Act, any other Game Warden may appear on his behalf before a Magistrate who is hearing the said complaint and shall have the same privileges as to addressing the said Magistrate and as to examining any witnesses as if he were the complainant.

Acceptance by Game Warden of compensation for offence. 17. (1) The Minister may, by writing under his hand, empower a Game Warden—

- (a) to accept from any person admitting the commission of any offence against this Act, the fine for which does not exceed two hundred dollars, a sum of money not exceeding two hundred dollars by way of compensation for such offence; and
- (b) when any property has been seized as liable to forfeiture, to release the same on payment of the value thereof as estimated by the Game Warden.
- (2) A Game Warden acting under subsection (1) shall issue

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to the person admitting an offence a receipt for all monies paid by way of compensation or value.

(3) On payment of such sum of money, or such value or both, as the case may be, to the Game Warden, such person, if in custody shall be discharged, the property if seized shall be released, and no other proceedings shall be taken against such person or property in respect of the offence.

(4) All money received under this section shall be paid to the Comptroller of Accounts who shall place the same to the credit of the general revenue.

18. (1) No animal shall be exported or carried coastwise with- Exportation of out the written permission of the Chief Game Warden.

(2) Any person who exports or brings any animal to any quay or other place to be shipped for exportation or to be carried coastwise without the written permission of the Chief Game Warden is liable to a fine of two thousand dollars or to imprisonment for six months in addition to any other penalty to which he may be liable under this Act.

19. All provisions of the Customs Ordinance relating to uncus-tomed and prohibited goods and proceedings for breaches of the law relating thereto, shall apply as fully and effectually to animals (1950 Ed.). prohibited to be exported or carried coastwise under and by virtue of that Ordinance.

20. Subject to section 21 all penalties, compensation and other Penalties, for etc., to be n monies recovered under this Act and all fees received in respect to Compto of licences granted or issued under this Act shall be paid to the Comptroller of Accounts who shall place the same to the credit of the general revenue.

21. All offences against this Act shall be punishable on sum- Offence mary conviction before a Magistrate who may direct that any summarily. portion not exceeding one-half of the penalty imposed shall be paid and awarded to any person other than a Game Warden or constable who had given information which led to the conviction of the offender, provided that such person be not an accessory.

22. Any person guilty of an offence against this Act for which Penakies where no penalty is expressly provided is liable to a fine of two hundred penalty. dollars.

of Accounts.

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Appointment of Game Wardens and Honorary Game Wardens. Sixth Schedule.

23. (1) The holders of the offices mentioned in the Sixth Schedule are hereby declared to be Game Wardens for all the purposes of this Act.

(2) The Minister may from time to time by notice published in the *Gazette* appoint fit and proper persons to be Honorary Game Wardens for the purpose of assisting in the carrying out of this Act.

(3) An Honorary Game Warden shall have all the powers conferred by this Act upon a Game Warden.

Regulations. Second and Third Schedule.

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24. (1) The Minister may make regulations-

(a) altering and amending the Second or Third Schedule by adding thereto, or removing therefrom, the name of any animal and may apply any such alteration to the whole of Trinidad and Tobago or confine it to any district or other area thereof; • : • .

- (b) prescribing conditions as to the numbers or sex of any animal which may be hunted in lands other than Game Sanctuaries generally or in any such lands in particular;
- (c) prohibiting or limiting at any time for the whole of Trinidad and Tobago or any part thereof any method employed for hunting any animal which appears to him unduly destructive or improper;
- (d) prescribing forms and making provisions for the issue of, and fees for, licences under this Act;
- (e) restricting or imposing conditions for the keeping of any animals in captivity;
- (f) prohibiting the sale or purchase of the meat of any animal;
- (g) providing generally for the better carrying out of the objects of this Act;
- (h) prescribing penalties not exceeding two hundred dollars on summary conviction for the contravention of any regulation.

(2) The Conservation of Wild Life Regulations (formerly contained in a Schedule to this Act) shall be deemed to be made under subsection (1) and may be amended or revoked under this section.

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LAWS OF TRINIDAD AND TOBAGO

Conservation of Wild Life

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13

FIRST SCHEDULE

Section 3. [141/1968].

GAME SANCTUARIES

1. Northern Range Game Sanctuary

Fortion B—The Boundaries are those of Portion B of the Northern Range Reserve as proclaimed in *Gazette*, Prociamation No. 8 of 1922 dated 2nd February 1922.

2. Valencia Game Sanctuary

Boundaries-

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STATES OF STATES

N.-Valencia Road.

E.—Oropouche River, exclusive of alienated land to the west thereof.

S.—Quare River, exclusive of alienated lands to the north thereof.

W.—Oropouche Vega Road, exclusive of alienated lands to the east thereof.

3. Central Range Game Sanctuary

Boundaries-

N.—Boundary of Central Range Reserve from pillar 4A to Cumuto Road.

E.-Cumuto Road and Brasso-Tamana Road.

S.—Brasso-Tamana Road.

W.—Boundary of Central Range Reserve from pillar 4A to Brasso-Tamana Road.

4. Trinity Hills Game Sanctuary

Boundaries-

N.—Northern boundary of the Moruga Reserve eastwards to the private road of the Trinidad Leaseholds Limited.

E.—Trinidad Leaseholds Limited private road from where it enters Moruga Reserve until it reaches the eastern boundary of the Trinity Hills Reserve, thence the Reserve boundary to the sea.

S.—The sea.

W.—The eastern boundary of Cat's Hill Reserve, from the northern boundary of the Moruga Reserve, a line joining the south-eastern corner of the Reserve to the north-western corner of the Trinity Hills Reserve thence the western boundary of the Trinity Hills Reserve and its prolongation to the sea.

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 - 5. Southern Watershed Game Sanctuary

Boundaries-

- N.—The northern boundary of the Southern Watershed Reserve.
- E.—The Morne Diable Road and its continuation to the soa.

S.—The sea.

W.—The Quinam Road and its continuation to the sea.

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- 6. Little Tobago Gume Sanctuary The whole island.
- 7. Saut d'Eau Game Sanctuary

The whole island of Saut d'Eau also called Maravaca, situate near the North Coast of Trinidad.

- 8. Soldado Rock Game Sanctuary in the Serpent's Mouth, off Icacos Point.
- 9. Caroni Swamp Game Sanctuary

Boundaries—

N.—By the southern bank of the Blue River from the western bank of No. 2 (North and South) drain to the western bank of No. 4 (North and South) drain.

E.—By the western bank of No. 2 (North and South) drain.

S.—By a line demarcated by stakes running from the western bank of No. 4 (North and South) drain to the western bank of No. 2 (North and South) drain.

W.—By the western bank of No. 4 (North and South) drain.

10. Kronstadt Island Game Sanctuary

The whole island.

11. Morne L'Enfer Game Sanctuary

Boundaries-

N.-By the Forest Reserve Main Road.

E.—By Bungelow and No. 20 Road.

S.—By Blue Basin and No. 31 Road.

W.—By New Camp Road.

12. Bush Bush Wild Life Sanctuary

Comprising 3,840 acres of the Nariva Swamp and bounded as follows:

All that area of the Nariva Swamp comprising 3,840 acres and bounded as follows:

On the East from a point located 4,000 lks. from the

Conservation of Wild Life Chap. 67:01

45 m.m. on the Manzanilla Road, on a bearing of approximately 255 degrees (having co-ordinates based on the Cassini Soldner Projection of 305,500 lks. N. and 592,770 E.) thence by a cut and staked line running in a direction of bearing 165 degrees for a distance of $1\frac{1}{2}$ miles.

Thence on the South, by a cut and staked line running in a direction of 255 degrees for a distance of 4 miles;

Thence on the West, by a cut and staked line running in a direction of 345 degrees for a distance of $1\frac{1}{2}$ miles;

Thence on the North, by a cut and staked line running in a direction of 75 degrees for a distance of 4 miles to the point of starting.

Section 6.

*SECOND SCHEDULE

PART I

Animals— Alligator or Cayman Lizards Agouti Armadillo (Tattoo) Deer (in Trinidad only) Lappe Quenk (Peccary or Wild Hog)

PART II

Birds—

Amazona Amazonica Amazonica, Lim or Common Amazon Parrot

Charadriidae—All birds belonging to the Family Charadriidae or Plovers (including Petit Collier, Gros Collier, Pluviers) Corbeau, Common Town (Coragyps)

Cormorants (Phalacrocorax olivaceus olivaceus and Phalacrocorax auritus)

Cranes, (Ardea heredias and Ardea cocoi) Ducks, Ouikiki (Dendrocygna autumnalis)

*This Schedule has been amended by the following G.Ns.: 178/1971, 143/1972, 126/1973, 170/1973, 195/1973, 42/1974, 158/1974, 159/1974, 125/1975, 126/1975, 140/1975, 150/1977.

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Conservation of Wild Life

- Ducks, Wild (except Bahama Pintails) (Poecilonetta bahamensis, Anas Bahamensis, Dafila acuta, Dafila bahamensis), Muscovy (Cairina moschata)
- Heron, Blackcrowned Night or Crabier Batali (Nycticorax nycticorax)

Heron, Boatbilled or Crabier Bec Plat (Cochlearius)

Heron, Yellowcrowned Night or Crabier a Croissant (Nyctanassa violacea)

Ibis, Scarlet-(Flamant or Flamingo) (Guara rubra)

Rallidae—All birds belonging to the Family Rallidae (Coots, Rails, Waterfowl and their allies)

Ramier or pigeon (all kinds)

Scolopacidae—All birds belonging to the Family Scolopacidae or Snipes and Sand Pipers (Snipes, Curlews, Sand Pipers, White-wings, Yellow-legs, Godwits, Sanderlings)

Part III

Regulation 5.

CAGE BIRDS

Cage birds which may be captured or kept captive by cage Chicki-Chong or Bullfinch (Oryzoborous angloensis) Cravat (Tanagra trinitatis) Finch, Yellow-bellied Parakeet (Ferpus passerinus) Picoplat (Spermophila intermedia) Semp (Tanagra violacea) Ring Neck Chat or Nun (Spermophila bouvronides)

Section 11. [126/1973].

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THIRD SCHEDULE

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List of animals declared as vermin

1. Bats

- 2. Mapipire Balsin or Fer de Lance (Bothrops atrox)
- 3. Mapipire Zanana or Bushmaster (Lanchesis muta)

4. Mice

- 5. Mongoose
- 6. Rats
- 7. Snakes, Coral (Micrurus spp.)
- 8. Squirrels
- 9. Yellow-tails (Ostinops decumanus)
- 10. Manicou (Opossum)
- 11. Green Parrot
- 12. Cocrico (Ortalis ruficanda ruficanda)

Conservation of Wild Life

Section 10.

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FOURTH SCHEDULE

FORM OF SPECIAL GAME LICENCE

THE CONSERVATION OF WILD LIFE ACT

Licence is hereby granted to.	ol
	to hunt the following animals:
(occupation or profession)	(species, number and sex)*
in theGame	Sanctuary or
from the day of	
*delete where inapplic	19 able.

Chief Game Warden

FIFTH SCHEDULE

CLOSE SEASON

Places Period From 1st April to 30th September Throughout Trinidad and Tobago.

SIXTH SCHEDULE

Section 23.

Section 2.

Assistant Conservators of Forests Forest Supervisors Forest Officers Wardens Assistant Wardens

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:01 Conservation of Wild Life

Ward Officers, as follows:

County of St. George The Principal Ward Officer, Arima The Ward Officer, San Rafael The Ward Officer, St. Joseph and Tunapuna The Ward Officer, Arouca-Caura The Principal Ward Officer, Blanchisseuse The Ward Officer, Brasso Seco The Ward Officer, San Juan-Santa Cruz The Ward Officer, St. Ann's-Maraval The Ward Officer, Diego Martin-Mucurapo The Ward Officer, Carenage-Chaguaramas

Eastern Counties The Ward Officer, Valencia The Principal Ward Officer, Biche The Ward Officer, Grande Riviere

Counties of Victoria and St. Patrick The Principal Ward Officer, Moruga The Ward Officer, Siparia

Ward of Tobago The Ward Officer, Roxborough

Conservation of Wild Life

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SUBSIDIARY LEGISLATION

CONSERVATION OF WILD LIFE REGULATIONS

deemed to be made under section 24

ARRANGEMENT OF REGULATIONS

REGULATION

1. Citation.

2. Form of Licence.

3. Licence Fee.

4. Restrictions on capturing birds.

5. Hunting lights.

6. Close season.

7. Hunting in Forest Reserve.

8. Special authority necessary.

Special authority necessary.
 Protected animals.
 Selling protected animal.
 Powers of Game Warden or constable.
 Magistrate's power under regulation 11.
 Form of acknowledgment.
 Clipping wings of protected birds.

15. Permits for protected birds.

1. These Regulations may be cited as the Conservation of Citation. Wild Life Regulations.

2. Licences issued under section 6 of the Act shall be in the Licence. form set out in the First Schedule to these Regulations and shall be issued by Game Wardens authorised by the Minister for the purpose.

3. Subject to section 6 of the Act there shall be paid for each Lionson Fre. licence issued the sum of five dollars.

4. (1) No person shall capture any bird specified in Part III of Restrictions on Capturing birds. the Second Schedule to the Act by any means or method other than by a trap cage, the dimensions of which shall be not less than one cubic foot for each such captured bird.

(2) No person shall keep captive any birds specified in Part

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[Subsidiary]		Conservation of Wild Life Regulations

III of the Second Schedule to the Act except in a cage the minimum size of which shall be not less than one cubic foot for each such captive bird.

(3) No person shall use bird-lime or any similar substance or means for the purpose of capturing any bird specified in Part III of the Second Schedule to the Act.

(4) Any person who contravenes subregulation (1), (2) or (3) is liable on summary conviction to a fine of two hundred dollars.

Hunting lights.

5. (1) No person shall use any artificial lights for purposes of hunting.

(2) Any person who contravenes subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

Close season.

6. (1) No person shall during the close season serve, purchase, sell or expose or offer for sale any animal referred to in the Second Schedule to the Act.

(2) Any person who contravenes the provisions of subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

Hunting in Forest Reserve.

7. (1) No person shall hunt or be a member of a party engaged in hunting any animal specified in the Second Schedule to the Act in any Forest Reserve between the hours of 7.30 o'clock in the evening and 5 o'clock in the morning of the next succeeding day.

(2) Any person who contravenes the provisions of subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

Special authority necessary.

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8. (1) Except in pursuance of an authority specially granted by the Chief Game Warden under this Regulation, no person shall hunt more than thirty Wild Ducks, five Scarlet Ibis and five Crabier in any one day.

(2) Any person who hunts any animal contrary to subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

(3) If any party engaged or who has been engaged in hunting Wild Ducks, Scarlet Ibis or Crabier is found in possession of a quantity of Wild Ducks, Scarlet Ibis or Crabier which have been i)

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Conservation of Wild Life	Chap. 67:01	21
Conservation of Wild Life Regulations		[Subsidiary]

hunted and which having regard to the number of guns carried by that party, is in excess of the quantity which may be hunted under subregulation (1), every member of such party is liable on summary conviction to a fine of two hundred dollars.

9. (1) No person shall keep a protected animal in captivity Protected animals. unless he is authorised so to do by permit issued under these Regulations. However, the legal personal representative of a deceased holder of a valid permit issued under these Regulations shall be deemed not to have committed an offence under these Regulations by reason only of the fact that a protected animal which has been kept in captivity by such deceased person under the authority of such permit remains in captivity after the death of such person.

(2) Any person who contravenes subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

10. (1) No person shall sell or otherwise dispose of any pro- Selling tected animal kept in captivity under the authority of these animal. Regulations without the written permission of the Chief Game Warden.

(2) Any person who contravenes subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

11. (1) A Game Warden or constable who finds a protected Game Warden animal in captivity may, if the person in whose possession it is so or constable. found is not authorised under these Regulations to keep that animal in captivity-

> (a) require that person to release the animal immediately or to dispose of it to a person who holds a permit under these Regulations to keep such animal in captivity within two weeks of the date on which such Game Warden or constable has so found the animal in captivity; and if he is unable so to dispose of it within the period of two weeks, to release it at the end of such period. However, if such person demonstrates to the satisfaction of such Game Warden or constable that the animal does not wish to go free the Game Warden or constable may leave it in the possession of the person and such person shall be deemed not to have committed an offence against these Regulations and may be granted a permit under these Regulations to keep the animal in captivity;

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[Subsidiary]

Conservation of Wild Life Conservation of Wild Life Regulations

(b) make application to a Magistrate to determine whether the animal is wild or domesticated.

(2) Upon the hearing of an application under subregulation (1)(b), the proof that the animal is domesticated shall lie on the person in whose possession the animal was found.

Magistrate's power under regulation 11.

12. If the Magistrate on application of a Game Warden or constable under regulation 11 decides that a particular animal is wild, he may order that it be set free, or handed over to a person who holds a permit under these Regulations to keep in captivity such an animal on such terms as the Magistrate may think fit.

Form of acknowledgment.

13. Whenever a protected animal is released from captivity on the requisition of a Game Warden or constable acting under regulation 11 an acknowledgment in the form set out in the Second Schedule to these Regulations shall be given by such Game Warden or constable to the person from whose possession such animal has been removed.

Clipping wings of protected birds.

14. (1) No person shall clip or cause to be clipped the wings of a protected bird or in any way mutilate or cause to be mutilated any protected animal or bird in order to prevent it from escaping from its cage when opened.

(2) Any person who contravenes subregulation (1) is liable on summary conviction to a fine of two hundred dollars.

Permits for protected birds.

15. Permits to keep in captivity protected animals or birds shall be issued by the Chief Game Warden and shall be in such form as the Chief Game Warden may determine.

Regulation 2.

FIRST SCHEDULE

FORM OF STATE GAME LICENCE

THE CONSERVATION OF WILD LIFE ACT

Licence is hereby granted toofto hunt animals on State Lands subject to the provisions of the Conservation of Wild Life Act and Regulations made thereunder.

This Licence is not transferable and expires on 31st December following the date of issue.

for Chief Game Warden

Fee payable \$

C	onservation of Wi	ld Life	Chap. 67:01	23
Cor	servation of Wild Life H	Regulations	***************************************	[Subsidiary
5	SECOND SCHEI	DULE		Regulation 13.
Тне	CONSERVATION OF WIL	d Lipe Act		
Serial No.				
ACKNOWLED	GMENT OF RELEASE OF I	ROTECTED AND	MAL	
I,	•••••••••••••••••••	have today re	leased the following	
protected animals and birds				
-	(he	re insert number)	
······ (and species of animal an	d bird)	••••••	
from the custody of		of		
	(name)	(address)	
I certify that the animals and	birds herein above speci	fied were not m	utilated in any way.	
			•••••	

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Game Warden/Constable

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APPENDIX X

ţ.

Fisheries Act, Chapter 67:51 of the Laws of Trinidad and Tobago. 1916.

Fisheries

Chap. 67:51

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CHAPTER 67:51

FISHERIES ACT

ARRANGEMENT OF SECTIONS

SECTION

1. Short title.

2. Interpretation.

3. Application of Act.

4. Regulations.

5. Duty of Fisheries Officer.

6. Penalty for breach of regulations.

7. Use of poison or explosives.

Taking fish in prohibited areas.
 Inspection, seizure and forfeiture of nets.

10. Offences committed at sea.

An Act to regulate fishing in the waters of Trinidad and Tobago. 1950 Ed. Ch. 25 No. 9.

[11TH DECEMBER 1916]

1. This Act may be cited as the Fisheries Act.

2. In this Act-

"fish" includes oysters, crabs, shrimps, turtle, turtle eggs, corals and any species of other marine fauna;

"Fisheries Officer" means the person for the time being holding the office of Fisheries Officer and includes any officer of the Fisheries Division of the Ministry of Agriculture;

"prohibited area" means an area declared by the regulations made under section 4 to be a prohibited area.

3. This Act shall extend to all rivers, whether tidal or other- Application of wise, and to the Territorial Sea of Trinidad and Tobago as defined (39 of 1966 23 of 1975]. Ch. 1:51. by the Territorial Sea Act.

4. The Minister may make regulations-

(a) for prescribing the size of mesh, form, and dimen-^{23 of 1966} sions of nets or appliances for fishing, and for the manner of using the same;

L.R.O. 1/1980

Interpretation, [39 of 1966].

Short title,

39 of 1916.

Commencement

Regulations.

morning and five o'clock in the afternoon in or upon which there shall be any fishing net visible for the purpose of inspecting and measuring the same.

(2) If the Fisheries Officer or any person authorised in writing by him is satisfied that the construction of such fishing net contravenes the provisions of the law for the time being set forth in any regulation made under this Act, he may cause such net to be conveyed to the nearest convenient place where the same may be measured.

(3) If on inspection or measurement it is found that the construction of such net contravenes the law as aforesaid, it shall be seized and taken before a Magistrate, who, upon being satisfied of such contravention, shall declare the same to be forfeited; and the Magistrate may declare and order such forfeiture notwithstanding that no person has been charged in relation to or in connection with such net with having committed an offence against any regulation made under this Act.

(4) Where a net has been seized under this section, and no person at the time of the seizure is found in possession of the same, the order for its forfeiture shall not be declared by the Magistrate until the expiration of one month after its seizure, or until, before the expiration of such month, the owner or other person entitled to the possession of the net comes forward to claim the same and has been given an opportunity of showing cause why it should not be forfeited.

(5) The Magistrate shall cause every fishing net forfeited as aforesaid to be delivered to the Police for the purpose of being destroyed, and the police officer in charge of the Police Station where any such fishing net is delivered shall forthwith destroy the same.

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10. Any offence against this Act committed at sea is deemed to Offences have been committed on the coast adjoining the sea, or to have sea. been committed in any place where the offender is found, and may be tried and punished accordingly.

committed at

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L.R.O. 1/1980

4	Chap. 67:51	Fisheries
	(b) for res turtles exposi may be	stricting the size of fish, crabs, shrimps and that may be taken, and prohibiting the sale or ng for sale of such as are under such size as e prescribed by the regulations;
	(c) declari	ng any area to be a prohibited area;
۰ ۱ ۱	(d) prohib ing, ca of fish such ti scribec	iting the killing, harpooning, taking, remov- tching or any other means of taking possession or any variety thereof either absolutely or at imes and within such areas as may be pre- l;
1	(e) prohib the_pu absolu may be	iting the sale, offering or exposing for sale or irchase of fish or any variety thereof either tely or at such times and within such areas as e prescribed.

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5. It is the duty of the Fisheries Officer and any person authorised in writing by him so to do, subject to any general or special directions given by the Minister, to carry out the provisions of this Act.

6. (1) A person who contravenes any regulation made under this Act is liable on summary conviction to a fine of two thousand dollars and to imprisonment for six months.

(2) The Magistrate, in his discretion, may also order any net or other appliance used in the commission of any offence to be forfeited to the State.

Use of poison or explosives.

Taking tish in

prohibited areas. [39 of 1966 23 of 1975].

Duty of Fisheries

Officer. [39 of 1966 23 of 1975].

Penalty for

breach of regulations. [39 of 1966 23 of 1975].

> 7. Any person who uses poison of any description or any explosive with intent to stupefy, poison, take or kill fish is liable on summary conviction to a fine of one thousand dollars or to imprisonment for three months.

> 8. (1) Except with the written permission of the Minister, no person shall take any fish in a prohibited area.

(2) Any person who contravenes subsection (1) is liable on summary conviction to a fine of two thousand dollars and to imprisonment for six months.

Inspection, seizure and forfeiture of nets. [39 of 1966 23 of 1975]. 9. (1) The Fisheries Officer and any person authorised in writing by him may inspect and measure any fishing net which he may see in any part of Trinidad and Tobago, whether or not the same has been seen in actual use, and may, without warrant, enter into or upon any premises between the hours of seven o'clock in the

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LAWS OF TRINIDAD AND TOBAGO

Chap. 67:51

Fisheries

SUBSIDIARY LEGISLATION

G. 25/2/1926. [13.3.1930].

Citation

Nets. j

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FISHERIES REGULATIONS

made under section 4

1. These Regulations may be cited as the Fisheries Regulations.

2. (1) The nets to be employed in the territorial waters of Trinidad and Tobago shall be the following and no others:

(a) Drift or Fillet Nets for catching Mackerel, King Fish and other large fishes.—Length of net not to exceed nine hundred feet. Width at centre not to exceed fifteen feet. Mesh not to be less than one and threequarter inches square. ÷-

- (b) Fillet Nets for catching Mullets.—Length not to exceed nine hundred feet. Width at centre not to exceed twelve feet. Mesh not to be less than one and one-quarter inches square.
- (c) Pocket Seines for catching mixed white fish.—Length not to exceed nine hundred feet. Width of pocket not to exceed fifteen feet, tapering to two feet. Mesh in the pocket not less than three-quarter inch square at end of pocket.
- (d) Pocket Seines for catching Prawns.—Length not to exceed one hundred and twenty feet. Width not to exceed twelve feet. Mesh not to be less than half an inch square.
- (e) Seines for catching Bait.—Length not to exceed one hundred and twenty feet. Width not to exceed nine feet. Mesh not to be less than half an inch square.
- (f) Cast Nets for catching Bait.—Length not to exceed six feet. Mesh not to be less than half an inch square.
- (g) Gar Seines for catching fish other than Cavalli or Jack fish.—Length not to exceed five hundred and forty feet. Width not to exceed twelve feet at centre. Mesh not to be less than half an inch square.

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Ensheries Regulations

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[Subsidiary]

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- (h) Scines for catching Cavalli .-- Length not to exceed seven hundred and fifty feet. Width not to exceed thirty-six feet in centre. Mesh not to be less than one and seven-eighth inches square.
- (i) Seines for catching Jack fish .--- Length not to exceed six hundred feet. Width not to exceed twenty-four feet at centre. Mesh to be not less than half an inch square.
- (j) Seines known as Italian Seines .-- Length not to exceed nine hundred feet. Mesh to be not less than half an inch square.

(2) The use of any such net for a purpose other than that specified in subregulation (1) shall be unlawful.

(3) The onus of proving that a net in which are found fish which it is unlawful to take in any such net has not been unlawfully used shall be on the person using the same.

3. No fish less than twelve inches in length of the following Fish less than twelve inches. kinds:

King fish, Spanish mackerel, Grouper, Codfish, Sorb, Pargue and Zeblan,

shall be taken or sold or exposed for sale.

4. No fish less than eight inches in length of the following Fish less than eight inches. kinds:

Cola, Red fish (Vivanot, Walliacke, Tete-ronde and Pomfano), and Salmon,

shall be taken or sold or exposed for sale.

5. No Sardine shall be sold except to a *bona fide* fisherman for ^{Sardine} the purpose of bait,

6. (1) No fish, Shell-fish, Crabs or Shrimps shall be taken Prohibition. within the area lying between a line drawn from the mouth of the Caroni River to a buoy fixed one thousand feet seaward from the sewerage outfall and thence to the mouth of the Diego Martin River, and the shore.

(2) No fish or Shell-fish (including Oysters, Crabs and Shrimps) shall be taken anywhere between Claxton's Bay and the mouth of the Cipero River or from the sea between the said places for a distance of one half of a mile seawards from low water-mark.

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absidiery] Fisheries Regulations regging a net seine. 7. Every person dragging a net or seine other than the specified in regulation 2(1)(d) and (e) shall remove all fish fr such net or seine in water not less than three feet in depth. 5,12.1929. OYSTERS FROM ORTOIRE RIVER REGULATIONS made under section 4 ation. 1. These Regulations may be cited as the Oysters fr Ortoire River Regulations. ation. 2. No person shall take oysters from the Ortoire River b ween the Mafeking Road public ferry and the sea from 1st July 31st December in each year.
 7. Every person dragging a net or seine other than th specified in regulation 2(1)(d) and (e) shall remove all fish fr such net or seine in water not less than three feet in depth. 5(12.1929. OYSTERS FROM ORTOIRE RIVER REGULATIONS made under section 4 anon. 1. These Regulations may be cited as the Oysters fr Ortoire River Regulations. 2. No person shall take oysters from the Ortoire River b ween the Mafeking Road public ferry and the sea from 1st July 31st December in each year.
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2. No person shall take oysters from the Ortoire River b ween the Mafeking Road public ferry and the sea from 1st July 31st December in each year.
1975. PROTECTION OF TURTLE AND TURTLE EGGS REGULATIONS
made under section 4
on. 1. These Regulations may be cited as the Protection of Tur and Turtle Eggs Regulations.
 a) kill, harpoon, catch or otherwise take possession of any female turtle which is in the sea within any response or within one thousand yards from the high wate mark of the foreshore where there is no reef; (b) take or remove or cause to be taken or removed at turtle eggs after they have been laid and buried by female turtle eggs after they have been laid and buried by
 (c) purchase, sell, offer or expose for sale or cause to be sold or offered or exposed for sale or be in possed sion of any turtle eggs.

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Protection of Turtle and Turtle Eggs Regulations 3. No person shall, between 1st March and 30th September, Restriction on killing, harpoon, catch or otherwise take possession of or purchase, harpooning and sell, offer or expose for sale or cause to be sold or offered or sell, offer or expose for sale or cause to be sold or offered or exposed for sale any turtle or turtle meat.

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APPENDIX XI

Wildlife Section, Forestry Division (1985). Draft Proposal for the declaration of Fishing Pond and Matura Beach as Prohibited Areas.

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Declaration of Matura and Fishing Pond Beaches

as Prohibited Areas under the Forest Act:

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BACKGROUND:

A decision was taken at the Wildlife Conservation Committee Meeting held on 1985 May 24 to make recommendations to the Ministry of Agriculture Lands and Food Production to have Matura and Fishing Pond Beaches declared as prohibited areas during the Nesting Season of the Leather Back Turtles. The Minister has the power to declare specified areas (Forest Reserves and/or State Lands) as prohibited areas under Section 2 of the Forests Act, Chapter 66:01.

Marine turtles nest along several beaches of Trinidad (map 1). Matura and Fishing Pond Beaches (12 and 13; on map 1) are two areas where leatherback turtles nest in significant numbers but where they also encounter numerous difficulties. Beaches along the Blanchisseuse to Matelot cosst (1 - 7 on map 1) also contain large numbers of cr nesting leatherbacks, but due to the relative inaccessibility of these areas, some degree of natural protection is afforded. Beach characteristics at these aforementioned areas are highly conducive to leatherback

The leatherback turtle, <u>Dermochelys corieces</u> is the most important species of marine turtle found in Trinidad. It is listed as "endangered" by the United States Fish and Wildlife Service and by the International Union for the Conservation of Nature and Natural Resources and as an "Appendix I" (protected) species under the Convention on International Trade in Endangered Species of Flora and Fauna.

JUSTIFICATION:-

Despite its endangered status, people slaughter the leatherback turtles and are continuing to do so at an alarming rate. This is specially prevalent at Matura and Fishing Pond Beaches. It is felt, that almost twenty to thirty percent (20-30%) of the nesting leatherback. population in Trinidad is being killed each year. Data collected in 1984 showed that 29% of the nesting population was slaughtered. To date, a total of forty-five (45) carcasses have been counted for the 1985 nesting season. In reality this number might be three times higher since carcasses are dumped far out to sea; buried deep or carried away.

In addition to this, eggs that have been laid are dug up and taken, thus further decreasing the potential for future population increase.

The people who slaughter turtles and/or dig up their eggs go to the beaches under the pretext of going to fish. However, they set up their Fishing lines as a sham, but in reality wait for the unsuspecting turtles to come ashore. It is not unusual to come across these so-called fishermen loaded with large plastic bags and cutlasses. As soon as they notice any authorized persons, they either pack up and leave or pretend that they are fishing. Game Wardens have confiscated knives and plastic bass when they suspected hunting was the main motive. However, they have been challenged and told that they cannot prevent people from fishing. If Matura and Fishing Pond Beaches were to be declared as prohibited areas for which special entry permits would be required this practice of hunting inderline prevent of fishing would be eliminated completely as any unauthorized persons found in these areas would be liable to prosecution.

Other unfavourable practices which affect the nesting habitat such as sand mining and destruction of the shoreline will also be prevented as a result of this action.

Leatherback turtles are part of the natural heritage of our country and have a great touristic appeal. During the nesting season it is not unusual to see as many as two hundred (200) people viewing nesting leatherbacks on a particularly good moonlit night. Although this interest is turtles is encouraging, uncontrolled visits to these beachesidering resting could also have serious negative effects on the nesting process. It is imperative therefore, that these turtles should be allowed to nest with the minimum of disturbances.

Map.II of Matura and Pithing Prind meas, (12 and 13 respectively) show that these two areas are fairly inaccessible, a factor which should make monitoring by the Forestry Division relatively easy. At Matura there are two points of vehicular entry and at "Fishing Pond there is a natural barrier in the form of a wetland swamp (North Orupuche). The area bordering these two beaches is also part of the Manzanilla Windbelt Reserve.

CONCLUSION

If Matura and Fishing Pond Beaches are designated prohibited areas, there are numerous potential benefits which can be derived. First and foremost wewilline safeguarding a unique species, namely the leatherback turtle. As a result of this action **rev**enue could be generated from the development of this resource as a tourist attraction; and rational harvesting for its meat. At present, Leatherback meat is illegally sold between \$6.00 to \$14.00 per 1b and vendors at El Socorro are enjoying a thriving trade in turtle meat roti which they pass as beef roti.

There is no doubt whatspever, that urgent action is needed to have Matura and Fishing Pond Beaches declared as prohibited areas. Nesting leatherbacks present a unique spectacle, and people who are fortunate to witness this phenomenom never forget the experience.

References :-

1.	Nathai-Gyan, Nadra -	Marine Turtle Management in Trinidad and Tobago with specific reference to the Leatherback Turtle, <u>Dermochelys</u> <u>Coriaces</u> . September 1984.
2.	Pritchard, Peter C.H	Marine Turtle in Trinidad and Tobago - Report on a Consultancy to the Food and Agriculture Organization (FAO) for prepar- ation of plans for the management of marine turtles, 1984.




APPENDIX XII

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Various Newspaper Articles

EXPRESS Monday June 11, 1984 Page 431 .

Bid to sto slaughter of turtles CONSERVATION-ISTS have renewed a itat.

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call for the Matura beach to be declared a wildlife sanctuary af-ter it was disclosed that about 15 leatherback turtles had been slaughtered by poachers since the nesting season started last March.

Carol James, a zoolog-ist and head of the wildlife section of the Ministry of Agriculture, Lands and Food Producconfirmed the tion. count while on a turtle patrol at Matura beach

late Friday night.

Also on the turtle patrol were zoologist Nadra Nathai-Cyan, forester Roopnarine Singh and 11 other officers of the ministry's wildlife section.

The wildlife section patrols the Matura beach in two groups twice weekly on a voluntary basis. The officials walk the beach with the aim of discouraging poaching on the leatherbacks' hab-

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The carcasses of eight turtles were found in one week at the Fishing Pond section of the were beach. Others Manzanilla found on beach.

Since the nesting season started, no carcasses have been found on the northern section of the beach mainly because of the stepped up patrol by the wildlife section. The EXPRESS San

Fernando desk learned that because the fishing pond section of the beach was secluded, it was ideal for the illegal slaughtering of the animals.

However, the wildlife section had reportedly secured the services of a full-time watchman to patrol the area.

The leatherback turtles (dermochelys copiacea) has been offically declared and endangered species worldwide. The ministry had accepted the findings of international conservation orga-nisations and declared the turtles a protected animal.

The wildlife section has been monitoring the turtles on the beach since March but due to limited manpower it cannot mount a full-time patrol.

However, some con-servationist groups are currently assisting in the patrols. Last Friday, a group of biology students from lower Form 6 at St Mary's College in Port of Spain were on the beach measurements taking and observing the turtles.

While the widlife section welcomes the voluntary patrol by young conservationists, it advises these eager turtlewatchers not to use too much light when the turtie comes ashore.

It was pointed out that the bright lights focussed on the animals often disriented them and they eventually lose direction.

It was pointed out that sometimes the turtles go back to sea without depositing their eggs.

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Leatherback turtles need your help to survive

By HARRY PARTAP EXPRESS San Fernando Desk

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THE TURTLE patrol mounted by volunteers from the few conservafrom the lew conserva-tionist groups in Trin-idad and Tobago is indeed a labour of love spawned by a love for the natural wonders of the country and a strong desire for preserve the desire to preserve the fast declining numbers of the leatherback turtles who nest every year on our east and north coasts.

The Wildlife Section of the Ministry of Agri-culture. Lands and Food Production this year be-gan a twice-weekly pa-trol of the leatherbacks nesting grounds at the Matura and Fishing Pond beaches. Their regular participation is greatly welcomed by other naturalists and conservationist groups, such as the Trinidad Field Naturalist Club and the Wider Caribbean Sea Naturalist Club and the Wider Caribbean Sea Turtle Network (WCSTN), whose local representative is Molly Gaskin. Patrol leaders collect data on the turcollect data on the tur-tles and submit it to the -University of Georgia, headquarters for WCSTN, where it is cul-lated with information from other leatherback turtle patrols around the world.

The leatherbacks use the dark of the night to crawl ashore to lay their eggs. It is during this time that the leatherbacks are vulnerable to poachers who batter the about whether the specie survive another generation or not. It is precisely to prevent this wanton slaughter of this endangered specie that the patrols were instituted.

It is estimated that if the indiscriminate the indiscriminate slaughter of the animals continued mankind would have lost this spe-cie of turtles in a few years. Last week I ac-companied a group of officers from the Wildlife Sortion comprision zoon Section comprising zoologists, foresters, games wardens and interested persons on a patrol of the Matura Beach off the Toco Road. In the party were head of the wild life section Dr Carol James, zoologist Nadira James, zoologist Nadira Nathai-Gyan, foresters Roopnarine Singh and Courtney Parks, forest rangers Leo Lendore, David Boodoo and A. Oliver, game warden G Thompson and conserva-

Thompson and conserva-tionists: Cliftord: Gyan and 16-year-old Jerome Partap, a student of Na-parima College. • • • • While staking out the Matura beach during a seven-hour period that extended into the wee bours of Saturday morn-ing, it became painfully

clear that some of the voluntary help from the conservationist groups were unwittingly defeating the purpose of the patrols. Some of the en-thusiastic helpers were focussing bright lights on the helpless animals as they came ashore forget-ting that in its natural habitat the turtle's are in over 150 feet of water and bright lights could

harm them. In fact two of the eight leatherbacks that surfaced that night were disoriented by the lights much to the discomfort of the animals. The two turtles, after aimlessly crawling around went back into the water and disappeared in the surf without laying any eggs. The human interference, explained Dr James, had denied be turtles the chance to deposit their eggs and possibly pre-vented a generation of turtles from being hatched. tched. 5 Dr James noted that

if the turtles returned the eggs may not hatch because the fertility period would have expired. She explained that young would be conser-vationists should be aware of this and refrain from focussing bright lights on the animals when they were coming up to nest. This takes a great deal of discipline. since it may take as long as an h ar for the female as an h. a for the remain to cross ashore, select a suitait a spot of sand and dig its nest. Watchers need i wait silently, in the dark, and not to crowd in a small circle around the digging ani-mal, or she is disoriented and frustrated from the task she waited three-years and swam thou-sands of miles to accomplish.

Lights or human ac-tivity around the turtles once they in the process of laying do not disturb them. This is the time when viewers can draw near, watch and count the eggs being laid, measure and tag the turtle for possible identifica-tion when she arrives at some other part of the world.

world. Once the laying proc-ess starts the female leatherback may be prodded, poked or even killed and she will not move. Dr James pointed out in an information booklet issued by the Wildlife Section last year that "this makes the while Section as year that "this makes the creature extremely vul-nerable to 'killers' and necesitates action by necesitates action by concerned individuals to prevent this annual tragedy". But some people go to these nesting grounds at

Mathura, Salibia, Mada-mas, Paria and Blanchisseuse under the pretext of turtle patrols and find themselves betraying this trust. There was a clear example last Friday night when Forest Rang er Lendore intercepted a young woman in a patrol group attempting to take away a young turtle which had just hatched and was finding its way

and was finding its way to the ocean. Under the pretext that she was taking the helpless creature to the Institute of Marine Affairs for medical attention she almost got away with it. But Lendore was alert and demanded some form of official identification. The woman surrendered the crea-ture and it was placed in the ocean.

During the patrol Lendore, Nathai-Gyan and Boodoo spoke with people on the beach expeople on the beach ex-plaining facts about the leatherbacks. The trio buttonholed any group of two or more turtle-watchers giving them do's and don'ts about the leatherbacks. Some peo-the family the aversia ple found the exercise useful while others argued and refused to take notice of the advice, like the couple who kept clicking the cameras sending out blinding

Inshes that disoriented the creatures. When one considers that out of the 100-odd eggs laid by one female leatherback only about five or 10 hatchlings ever survive to adulthood, the pressure for survival of the specie becomes acute. Apart from the natural predators of natural predators of sharks and birds, man has become a savage to these helpless creatures.

Dr James wrote, "dis-regard for the life of these creatures has been so great that some fishermen do not consider it an immoral act to hack off a flipper for use as bait to catch sharks and leave the remainder of the carcess to rot " the carcass to rot."

Dr James pointed out in her article that "it had been found that blood alone from turtles will also attract sharks, so that a partially dam aged turtle or even bloodsoaked sand maybe used as lures for sharks".

Dr James' account dramatised the suvagery of pouchers who roam the east coast beaches in search of leatherbacks. One cannot yet under-stand how a human be-ing could look at these magnificent creatures in a state of helplessness and batter them to death. It is a heartless exercise which must be condemand exercise which must be condemnend not only because of its cruelty but because of the danger of losing the specie alto-gether."

Travelling with the Wildlife Section patrol team, one senses a great deal of zeal from the eight officials who were using the time and losing

their sleep to protect the turtles. The patrol vol-unteers walk the beach from 7 μ m. Friday night to 2 am. Saturday zeal-ously protecting the tur-tles. Gaskin also has taken a pair of student volunteers who have spent a week at a time on the beach, patrolling every night and collect-ing vuluable data so that scientists can have some idea of the life itinerary of the leatherback and their total population.

Said one of the offi-cers while plodding through the soft sand at Mathura, "working at Mathura, "working at the Wildlife section had made me so conscious of conservation that I cannot bear to see any ani-mal being simplifiered. This love for animals and the idea that some of them face extinction of them face extinction pushes me to join the patrol team every oppor-tunity 1 get. The fact that some of us did not reach home until 5 o'clock Saturday morn-ing should lead poachers

to swear an **ath** never to slaught the leather-backs gain." While the turtle pa-

While the turtle pa-trols had significantly re-duced the slaughter – ouly 15 so far this year as compared with 25 during the same period last year – it is not the answer to the problem. The solution lies in edu-cating the population to the fact that these leath-erbacks face estinction and need protection if we in future years, and our children, are to know a Trinidad and Tobago with wonderful creatures like the leatherback tur-tles. The Wildlife section should embark on a com-prehensive public educaprehensive public educa-tion programme designed to tell people the facts about conservation.

The Wildlife Section needs to use the radio, television, press and public lectures to spread the message, and the ed-ucation programme should be taken to the schools. Gaskin, assisted by Carlin Shepherd, is the only regular volumteer for conservation ed-ucation. They spend several hours each week driving to schools all driving to schools all over Trinidad and Toba-go to which they have been invited, speaking on conservation of the native animals and plants and the impor-tance of not polluting and not hittering. Gas-kin, who also is Girl Guides Commissioner and founder-manager of the Pointe-a-Pierre Wildlife Trust, conducts active conservationist and beautification proconservationist grammes, such as an is-land-wide tree-planting land-wide tree-planting still under way, with the Girl Guides and Boy Scouts.

The naturalist and conservationist clubs as well as the Trinidad Hunters group and the South Trinidad Hunters Group must get involved in educating people on endangered species and conservation in general. But the final responsibili-But the final responsibility lies with each citizen. It is we who must pre-serve our heritage; peo-ple of other nations will not do it for us. The leatherbacks are part of, the Trinidad and Tobago national beritage as we national heritage -- we must each one of us protect them.

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B & Express Tuesday June 4, 1985 Commentary Who will protect the leatherback?

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By KATHLYN RUSSELL

T'S THE time of year when a miracle of nature happens on some Trinidad beaches, particularly Matura, Salybia, Madamas, Paria and Blanchisseuse, every night — the gigantic female leatherback turtle comes ashore to lay her eggs in the sand. It is an amazing ritual to wit-

It is an amazing ritual to witness, as increasing numbers of persons are discovering. The giant creature emerges from the surf, visible only as a slowly moving dark hump at first, because any sight or sound of human beings or other moving creatures will cause her to turn around immediately and return to the waves.

She lumbers up to the beach, using her huge flippers to propel her body which may be 150 centimetres long or more and weigh 400 kilograms. She makes slow progress, indeed, especially compared to the agility with which she can suddenly disappear into the waves, but finally selects a friendly stfetch of sand above the tide mark and begins painstakingly, using her rear flippers as efficient tools which can spray the unwary onlooker with sand from several feet away, to scoop an enormous hourglass-shaped nest.

Until she is satisfied with her children's domicile, the female leatherback is cautious and wary; she will retreat to safety if disturbed. But as soon as she has settled herself over the nest and begun the process of filling the lower section of the hourglass with up to 100 golf ball-sized eggs of sticky white jelly, she goes into a sort of trance and will allow herself to be measured, tagged, photographed with flash bulbs, stared at with the light of bright electric flashlights, shouted at, robbed of eggs and even maimed or butchered.

Presuming that the latter two crimes are not committed, she will use her flippers again to refill the nest with sand and pack it down tight. Then comes an elaborate sand dance in which the turtle drags her body in circles around and away from the top of the nest, finally leaving marks which camouflage the actual location. Satisfied with the safety of her eggs, she finally makes her way back to the water, leaving "tire tracks" in the sand.

Turtle watchers spend up to half a night walking the beach, watching for the figures emerging from the surf, sitting still for up to an hour during the nest-building process, then drawing near to watch the actual laying. These days there are increasing numbers of people on the beaches who are interested in helping to preserve the turtles: those who are accompanied by turtle patrols from the Division of Forestry, Pointe-a-Pierre Wildlife Trust, Institute of 'Marine Affairs, Trinidad and Tobago Field Naturalists Club and other game wardens.

Even such groups may do harm by their very enthusiasm; making too much of a racket; forming a circle around the nesting site which can so disturb the turtle that she may make tracks wildly for hours without digging; shining so many bright lights on the beach or on the waves that she may be deterred from coming ashore; and — worst of all —being unable to resist taking an egg or two as a souvenir.

But this is little or nothing compared to the havoc wreaked by the poachers; people who, for decades now, have developed a taste for turtle meat, believe that the flippers are an aphrodisiac, dig up the eggs, or even hack off a flipper to use as bait for sharks (the blood of any creature in the water will attract sharks, and divers or swimmers carrying bloody bait or freshly killed fish invite shark attack, then hunt the sharks as harmful to man).

Wholesale slaughter of turtles in many parts of the Caribbean and the world over for many years has so lessened the total population as to make the species highly endangered. The animals are protected by law in Trinidad and Tobago, and any game warden, full-time or civilian, is authorised to stop poaching or harassment of the creatures or the eggs (only five to 10 which survive natural predators to attain adulthood). Since most of the huge carcass is inedible, it is truly wanton destruction to kill the creatures, but wardens have already come upon many carcasses on the beaches this year.

This year in Trinidad there is a new development which threatens the turtles by threatening to drive away their human protectors. One recent weekend at Matura Beach, the most popular for turtle watchers, there was an unusually large number of cars parked because several large groups had accompanied the patrols.

At about midnight, people emerged from the beach to go home, only to find that vandals had been at their cars. One car had been bereft of all four wheels; two others had their rear windshields smashed (there was nothing inside to steal); one glove compartment had been raided and documents stolen as well as money; stereos were gone, and in many cases the door locks had been tampered with and broken.

It was a case of strangers helping each other — especially the car with the missing wheels, which finally limped home on four different borrowed spares after a great search in the ditches where bolts had been tossed aside —but the inconvenience, the frustration, the anger, the weariness and the expense caused by the vandals who, after all, gained very little, was enough to discourage a great many people from giving up most of a night's sleep and driving many miles to observe a natural miracle.

The area police seemed unable to tackle the problem of finding the culprits; in fact, their casualsounding question was whether anyone had been murdered!

This, from the men sworn "to protect and serve", is a degree of cynicism which in itself is contributory to a totally lawless society. Laws are useless if nobody is willing to enforce them or even to assume the moral rights of the victims.

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Workshop gives environmental education a boost

By ELENA ARAUJO

PUBLIC awareness of environmental concerns is greater in Trinidad and Tobago than the rest of the Caribbean, and the national parks programme more sophisticat-ed here than in many parts of the world. So said Dr. Michael Freed, one of three environmental interpretation experts who con-ducted two six-week teacher workshops at the Forestry Division of the Ministry of Agriculture. Freed, along with Drs. Gerald Kinsman and William Posseil, came to

pate in a workshop abroad, as was done preabroau, viously. "Now," who is Trinidad through the Organisation of Ameri-can States (OAS), which says Freed. can States (UAS), which provides the expertise for the national parks programme in Trinidad and Tobago. "Here in Trinidad you"

have three things going for you," said Freed, who is head of Parks and

is head of Parks and Conservation at George Mason University, Washington D.C., where he conducts aimilar workshops. "You have a supportive ministry, es-pecially in the Forestry Division. You have the Environmental Express orgenamme which is like

programme which is like a mobile museum, and

a mobile museum, and now you have an imagi-native group of trained environmental educators with audio-visual tools at their disposal." The Environmental Express is an air condi-tioned PTSC bus whose crew's mission is to tao

crew's mission is to teach enviromental preser-vation in schools. The

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"Now," anys Freed, who is enthusiastic about the idea, "we can reach 20 to 30 people at one time." And accord-ing to Cross, "we will have a pool of resource people who will be able to spread the work done by the bus." For the most part the

For the most part, the workshops aimed at training participants to interpret the environ-ment to their students.

interpret the environ-ment to their students. A release issued at the start of the workshop-stated, "An interpretive naturalist has a great challenge to translate vividly the language of the earth and of the earth's inhabitants." In one of the exercises, the participants had to search the grounds around the Forestry Di-vision for five items, and to deliver a 30-second talk on any single item, dealing with its relation to the neuriconment, and revealing any interesting revealing any interesting facts about it.

guaramas Natural Park and Maracas National and Park.

saw only carcasses or tracks where turtles had

already returned to the sea. This was the first time I actually saw the

sea turtle lay her eggs." The ultimate aim of the three experts is to make ecological and en-Freed was delighted to have witnessed two leatherback turtles laying their eggs on Matura Beach. "I have been doing the same type of work in ocean and beach areas in the region, but I

direction.

vironmental concepts a part of the school curriculum in the hope that when the young people are leaders, they can lead the country in conserva-tion and demonstrate a balanced and wise use of

their resources. The Environmental Express is a step in this

EXPRESS Tuesday July 30, 1985 Page 17



Who me! No sir! I going some way else.

'n 9. 2 Hurry Mary, run for your life.

bus,

which went on the road in 1983, is a brightly painted forest scene. Inside, the bus features nature displays, seating accommodation for 20 people, and audio and visual teaching appara-

tus. Officials from the Forestry Division take students on nature field trips, and use innovative devices, such as puppet shows and stuffed animals, in their lessons on the environment. So far, over 100 schools have been visited, and their are plans to take it to shopping malls and fac-

"I have found their ideas for interpretation wonderfully creative," said Freed, who demon-strated his own methods of presenting nature in the classroom. "I think their commitment to the environment is marvel-lous."

In fact, the workshops were an extension of the Environmental Express programme. Robyn programme. Robyr Cross, Forestry Depart Cross, Forestry Depart-ment ecologist, ex-plained: "The Express is a feature of the national parks project. From its inception in 1983, we placed training of staff on our list of priorities." The idea of sending out a few specialists to train large groups in their own country is a new one. The OAS thought i better to train

thought it better to train a fairly wide group of teachers, principals and officials involved in the environment, rather than inviting one or two officers from the Forest-ry Division to partici-

of Sport, Culture and Youth Affairs, and the Naturalist Magazine, came away from the workshop with an up-to-date list of sources of information on environmental interpretation (both local and foreign), a diploma testifying to their ability to communicate their natural and cultural heritage, and new ideas on graphic techniques, including slide shows and nature samples.

packets' (containing classroom material, pre-lesson preparations, and field activities) for Cha-

CANTOONS on leatherback turtles

The participants, who The participants, who represented the Forestry Division, primary and secondary school teach-ers, Pointe-a-Pierre Wildfowl Trust, Min-istries of Education and

amples. During the course of the workshops the pur-ticipants made field trips to Caroni Natural Park, Cleaver Woods Recre-ation Park and Aaa Wright Nature Conser-vation Reserve. The groups prepared 'teacher groups prepared 'teacher groups prepared 'teacher

Possession of turtle meat: FISHERMAN JAILE ГН EM **F**. 27

SENIOR Magistrate Mahabir Sar-wan last week jailed a Bacolet fisherman for three months for illegal possession of some 15 pounds of turtle meat.

And he warned that he will send to prison anyone found guilty of violating the wildlife laws of the country, particularly the slaughter and destruction of turtles.

Jailed was 20-year-old Wayne Smith who admitted three previous convictions, but none for a similar offence.

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"The plunder and destruction of the country's wildlife must be stopped," declared Sarwan.

The Magistrate said at this particular time when turtles were coming ashore on beaches of the country to lay their eggs, everything must be done to.

their eggs, everything must be done to protect and preserve the species. Smith was held by Cpl Forbes on Sangster Hill, Scarborough, with a beg containing the turtle meat. He said then he was taking it for a friend. Sentencing him, Sarwan disclosed that the maximum penalty was six months imprisonment or \$2,000 fine.

Page 10 EXPRESS Friday, May 22, 1987

Leatherback at the mercy of murderers

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THE EDITOR: Let us not ooh and ah at the horrific sight of the murdered leatherback turtle on Matura Beach, for every year we see the same type of pictures on television and in the newspaper.

We have read about their impending extinction and the great effort which they undergo in order to bear new life. Still, each year no Still, each year no change takes place to-ward avoiding the death year these of magnificent creatures.

The leatherback is not massacred by everyone. As a matter of fact, it is the most minor of minorities that carries out the deed of death. Unfortunately, it is a minority with a weapon in hand. Let us not fool ourselves into thinking that we can appeal to the kinder-hearted to try and get



sympathy for the lea-therback from these killers, for I tell you these are murderous men.

I myself have seen one of these huge leatherbacks lug herself with tremendous effort-totally helpless-simply to perpetuate her race, and to see that could melt the coldest heart. But the butchers of these creatures would happily kill you if you tried to

stop them. I have known of volunteer patrols who have appealed to these men on the scene not to kill the creatures. They were

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warned that if they came closer or tried to stop the killing they too would be hacked to death, for these men have no care or regard for any life, let alone a turtle's.

But ah! Is there not a law in this land preventing the slaughter of the leatherback? The answer is yes. But not one lawenforcing officer . has been there, so to date the law is of no use.

Until the law is enforced, until the importance of this issue is realised and it receives the serious attention it deserves from the powers

that be, who are supposed to enforce this law and do their jobs, the leatherback will be murdered in this country.

We, the population, must also do our bit. Until we stop eating the meat of the leatherback. it will be slaughtered. If we stop eating the Leatherback, there will be no one to buy the meat, so no need to kill-but still, catch us here and there digging up in turtle soup, and other dishes made from the meat, with the attitude: "It done dead already."

The death of the leatherback is a reflection on us, as Trinidadians, with our "don't care" attitude toward living things around us. Who cares anyway?

Cheups.

LINDA POLLARD-LAKE, Maraval

Leatherbacks need privacy

THE EDITOR: I have written this letter on behalf of some friends and myself concerning the viewing of the Leatherback turtle during its present egg-laying season. I will give an example of the reaction of some people, which I witnessed together with others at a "private" beach in Matura on Saturday May 16 into Sunday morning.

To my knowledge

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there was no forest ranger or any wildlife personnel accompanying the outing, which comprised over 100 "interested" persons. Around 6.30 p.m. my friends and I witnessed the first turtle attempting to reach dry sand to lay its eggs. In all fairness, we called the others (100-plus) to witness this rare treat.

However, to our dismay, the others, armed with cameras as well as flashlights and flood lamps switched on full beam, clustered around the pitiful creature.

In its claustrophic state the turtle resorted to digging its nest in the wet sand, which was periodically filled up with water by the nearby waves. Realising its failure it returned to the safety of the water, while some of the group hastened to get a touch of it before it got there.

Although I am no expert on animal life, a little common sense alone is needed for one to realise that any animal in this state needs utmost privacy to fulfil its task.

I hope the government agency responsible for wildlife conservation will take more interest, either by issuing guards to accompany interested parties or restricting viewing altogether of this almost extinct event.

ALAN D'ANDRADE JR, Tacarigua

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Appendix XIII

WILDLIFE SECTION, FORESTRY DIVISION

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APPENDIX XIV

Wildlife Section, Forestry Division (1987). Marine Turtle Management at Fishing Pond with specific reference to the Leatherback turtle.

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I.

MARINE TURTLE MANAGEMENT AT FISHING POND

WITH SPECIFIC REFERENCE TO

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THE LEATHERBACK TURTLE, Dermochelys corisces

1.0. INTRODUCTION:

The leatherback turtle, <u>Detmochelys coriaces</u> is a migratory species of marine turtle which nests on the North Coast and North East Coast beaches of Trinidad during the months of March to September. Fishing Pond and Matura beaches are two of the major nesting grounds which are accessible to the general public and during the peak months of May-June at least (10) ten lestherback turtles can be observed nesting in one night per beach.

The ready accessibility of these two beaches results in numerous alaughters, moreso at Fishing Pond. Forestry Division patrols at Matura is confined to weekdays since on weekends the area is visited by people who go to view the nesting leatherback, and this affords some measure of protection from poschers. At Fishing Pond the situation is different since the area is very isolated and relatively inaccessible and would-be poschers bide their time, waiting as long as necessary for the departure of Forestry stafftto slaughter turtles. The poschers are determined to obtain turtle-meat, a venture which is highly profitable for them. This meat is sold to roti-shops which is then cooked and sold to the unsuepecting public as beef-roti. Eggs are also taken since the Trinidadian mele believes that they have aphrodisiacal cualities.

Protection is afforded to the nesting Lettherback Turtles under the Conservation of Wildlife Act, Chapter 67:01 of the Laws of Trinidad and Tobago. In this Act, the leatherback turtle is a protected animal and therefore cannot be hunted at any time.

2.0. PATROLS:

The Wildlife Section, Forestry Division in an effort to afford protection to the nesting leatherback turtles, their eggs and the hatchlings have been conducting bi-weekly patrols at Fishing Pond and Matura since 1983. One patrol is staffed by Game Wardens and Forest Rangers (4) stationed in the North and the other by Foresters, Forest Rangers and Graduate Trainees (6) from the Research Staff. Sporadic assistance is received from other Forestry Officers and members of the public.

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These patrols (especially by the Research Staff) are indequately armed and it is generally hoped that the mare presence of Forest Officers would deter would-be poachers. In return for their dedication, officers have been subjected to ridicule, obscene language and even threatened with cutlasses. On 1987, April 28 while on a turtle patrol at Fishing Pond an encounter with some poachers who were determined to kill a **turtle** (s) that night nearly became "out-ofhand." Since then, Officers have been extremely cautious about returning to Fishing Pond at night unless accompanied by armed personnell. It is important to note that the poachers' taunt of "there is only one way in and one way out" is all too true!

For this year, 1987, despite conducting at least two patrols per week since March, a total of (16) sixteen leatherback carcasses have been discovered at Fishing Pond. This number is not a true indication of the actual killings which took place since some are dumped far out at sea, some are buried deep and others are carted away. It is certain that this wanton slaughter would continue unless adequate patrols can be deployed at Fishing Pond beach every night from around 8:00 pm to 5:00 am. It is indeed frightening for unarmed Forestry Division staff to meet determined poachers armed with their "tools of trade;" shining cullasses, sharp knows, plastic bags and buckets (for the eggs) who have absolute disregard for the future of this

3.0. EDUCATION AND PUBLICITY:

Education is the key to understanding and promotion of a greater public awareness of the plight of the Leatherback Turtles is essential for the survival of this species.

3.1. MEDIA

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Since 1983, various articles, posters and simple aartoons all carrying an appeal to stop the slaughtering of Leatherback turtles have been prepared for media publicity. The Forestry Division however, has only managed to get limited publication of these in the printed media.

For this year, the Forestry Division's Artist prepared a number of certoons which cerry highly effective messages for publication in the printed media and to date not a single one has been published in the newspapers.

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3.2. PUBLIC EDUCATION

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Numerous requests are received from members of the public, students. (ECIAF, UWI), organisations (IMA, CADP), etc. to accompany Forestry Division on their regular patrols. The opportunity is **token during** such trips to educate people "on-thespot" about the need for the conservation of Marine Turtles, especially the Lestherbacks. Since 1983, hundreds of nationals have been sensitised about the need to protect nesting turtles.

4.0. RECOMMENDATIONS:

Patrols need to be upgraded using adequate number of armed personnel in critical areas, especially at Fishing Pond. Assistance is needed from the Trinidad end Tobago Regiment, the Police Service and the Coast Guard, to supplement the efforts of Wildlife Section staff.

4.2. Declaration of Fishing Pond and Matura beaches as Prohibited areas during the mesting season should be given priority consideration. Entry by people into the area would be strictly by permits only, making enforcement easier.

4.3. Faveorable consideration is needed from the media to promote a greater public awareness. The Wildlife Section, Forestry Division has numerous articles, posters, sartoons, etc. which are already prepared for publicity.

Submitted by:

Nadra-Nathai-Gyan,

14-05-87.

APPENDIX XV

James, C. (1983). Highlighting Wildlife, Basic information on Wildlife Conservation in Trinidad and Tobago. The Leatherback Turtle. Pg. 41-44

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1. THE LEATHERBACK TURTLE

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The Leatherback Turtle or Caldon, <u>Dermochelys coriacea</u> is a migratory species of sea turtle which visits the beaches of Trinidad during the months of March to September to build nests and to lay eggs. Although the majority of turtles nest in Trinidad between April and late June, some may be found on beaches as late as September.

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Only female turtles come up on the beaches in Trinidad to lay eggs and after depositing up to one hundred (100) eggs on repeated visits during season, the female leatherback returns to the ocean until the cycle is repeated in March of the following year. Eggs hatch in sixty to eighty (60-80) days and young hatchlings make their way to sea where their life cycle begins. Many of the young turtles do not survive the rigours of this early life as they are easy prey to shore birds and sharks. Only about five to ten (5-10) of the annual brood of one hundred (100) eggs may survive to adulthood.

Beaches most commonly used in Trinidad for nesting Leatherback turtles are Mathura, Salibia, Madamas, Paria, Blanchisseuse and as recently as ten (10) years ago nesting turtles were also frequently seen at Las Cuevas and even at Maracas Beach.

Adult Leatherback turtles may weigh as much as 400 kilograms consisting mainly of muscular flesh which many people find tasty. This factor, along with the fact that their "shells" or "backs" are made up of soft leathery carapaces, and are not composed of the hard shell, characteristic of other turtles, make them easy targets for killing and many are slaughtered annually.

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To protect these animals from being slaughtered for their meat while nesting and to protect eggs until they hatch, the Government of Trinidad and Tobago legislated under the Fisheries Ordinance, the Protection of Turtles and Turtle Eggs Regulations 1975. This Act makes provision for the prosecution of anyone who captures, kills or mutilates any marine turtle or removes their eggs from beaches.

Early historical accounts of sea turtles indicated that population levels were once very high and several beaches in the Caribbean area were used as nesting grounds. Today, populations have declined to such low levels that former nesting grounds in the Cayman Islands and the Tortugas are no longer utilised by these reptiles. Population levels of Leatherback Turtles in particular are low enough to warrant international concernaby conservationists and the species has been listed as "Endangered Worldwide" under the U.S. Endangered Species Act.

Many reasons have been proposed for population declines of Leatherback Turtles worldwide. However, the principal reason may be uncontrolled harvesting of the animal for meat. Every year scores of rotting carcasses could be observed along beaches of Trinidad as a result of illicit slaughter by poachers who are unable to cart away all of the meat, and the major portion is left to rot. Nests of eggs are also dug up. This distasteful practice not only kills the turtles of the present generation but destroys the potential for population increases due to egg harvests. Disregard for the life of these creatures has been so great that some fishermen do not consider it <u>an immoral act</u> to hack off a flipper for use as bait to catch sharks and leave the remainder of the carcass to rot. It has been found that blood alone from turtles will also attract sharks, so that a partially damaged turtle or even bloodsoaked sand may be used as lures for sharks.

The ease with which Leatherback Turtles can be killed is facilitated by the inability of the female to react to disturbance while she is in the act of laying eggs. Due to some primitive instinct, once the process of laying has been initiated, the female can be **prod**ded, poked or even hacked and she will not move. This makes the creature extremely vulnerable to "killers" and necessitates action by concerned individuals to prevent this annual tragedy.

Conservation groups in Trinidad have been working to stem the tide of this illegal slaughter and to undertake basic scientific studies on these magnificent creatures. These groups who patrol beaches and tag turtles, include the Field Naturalists, Point-a-Pierre Wildfowl Trust, the Forestry Division and the Institute of Marine Affairs.

Recently, because of round the clock patrols, a decline in slaughter has been observed although it is possible that the whole animal may now be carted away leaving no tell-tale signs of slaughter on the beaches.

Leatherback Turtles migrate long distances during the non-nesting season. Turtles tagged in Trinidad have been observed on beaches as far away as Nova Scotia, Canada; and North America and Europe. This remarkable creature which has apparently not

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changed much from its ancient ancestors is a unique part of our natural heritage and inspires wonder, reverence and a feeling for beauty in all who witness the sight of nesting turtles. This magnificent phenomenon cannot be duplicated, and Trinidadians who care, are very fortunate to witness this beautiful episode of one of natures' bounteous surprises almost nightly for at least five (5) months of every year.

PLEASE HELP TO PRESERVE WILDLIFE

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APPENDIX XVI

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Ramquar, J. (1983). Save the Leatherbacks. In James, C. (1983). Highlighting Wildlife, Basic Information on Wildlife Conservation in Trinidad and Tobago. Pg.50.

SAVE THE LEATHER BACKS

<u>BY</u>

JOEL RAMQUAR.

FORESTRY DIVISION

A Beastly looking Monster in man's sight, Still her flesh consumed satisfies his appitite, With the will to survive, she treads our shores, Only to be slaughtered by us more and more; When would we hopefully realise, It's our taste we should sacrifice, I hereby beg with emotional plea, For God in Heaven Sake! Let the gentle turtle be, Is it too much I am asking of thee? Or can't you allow the Leather Back to nest free? Whales, Leather Backs, and even the Manatee; We'll kill them all without mercy. If all these creatures were to one day vanish, For the lack of their beauty and interest, Our world would perish, We would be to blame if we don't adhere, By our children, a horrid scar they will bear,

Let us all now change the trend,

And vow, never to bring these Creatures to an end.

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APPENDIX XVII

Arneaud, W.(1987). The Leatherback Turtle of Trinidad.

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	Reply
THE LEATHER BACK TURTLE OF	TRINIDAD Feference

by:

WH931

Wayne Arneaud, FR.I, WILDLIFE.

She comes from lands around so far, even as far as Canada and Africa. She challenges the Ocean's rough seas and currents to destined places, one of such is Trinidad, for her blessed laying season time from April to September. Alas!, she is no more, beheaded for such little gains by a vile head hunter. Some says she is hideous, I say gracious, as she digs with such gentle power. With tears in her eyes she cries. Why she comes to La Trinity for such exploit? Grainy shore sand, the will of god, surely our country emits a certain power, and surely she brings some along. Please save our leather back turtle, for she is helpless!

Appendix XVIII

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Publicity material prepared by Garry De Freitas, Forestry Division's Artist (Cartoons; Posters).



Steups! C'yar get chance to lay at all



Hurry Mary, run for your life!





Who me! No sir! I going some way else.



phew! That was close!





MAMA! MAMA! Oh Gosh she dead



Oh Gosh !! They coming.





Here lie some brave murtles.












-216(a)-14 6 THANK LOOK WE BOTS REACH! WE COULD NOW LAY SAFE.









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APPENDIX XIX

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and a

Photograph of a Leatherback carcass.



APPENDIX XIX

Photograph of a Leatherback Carcass

