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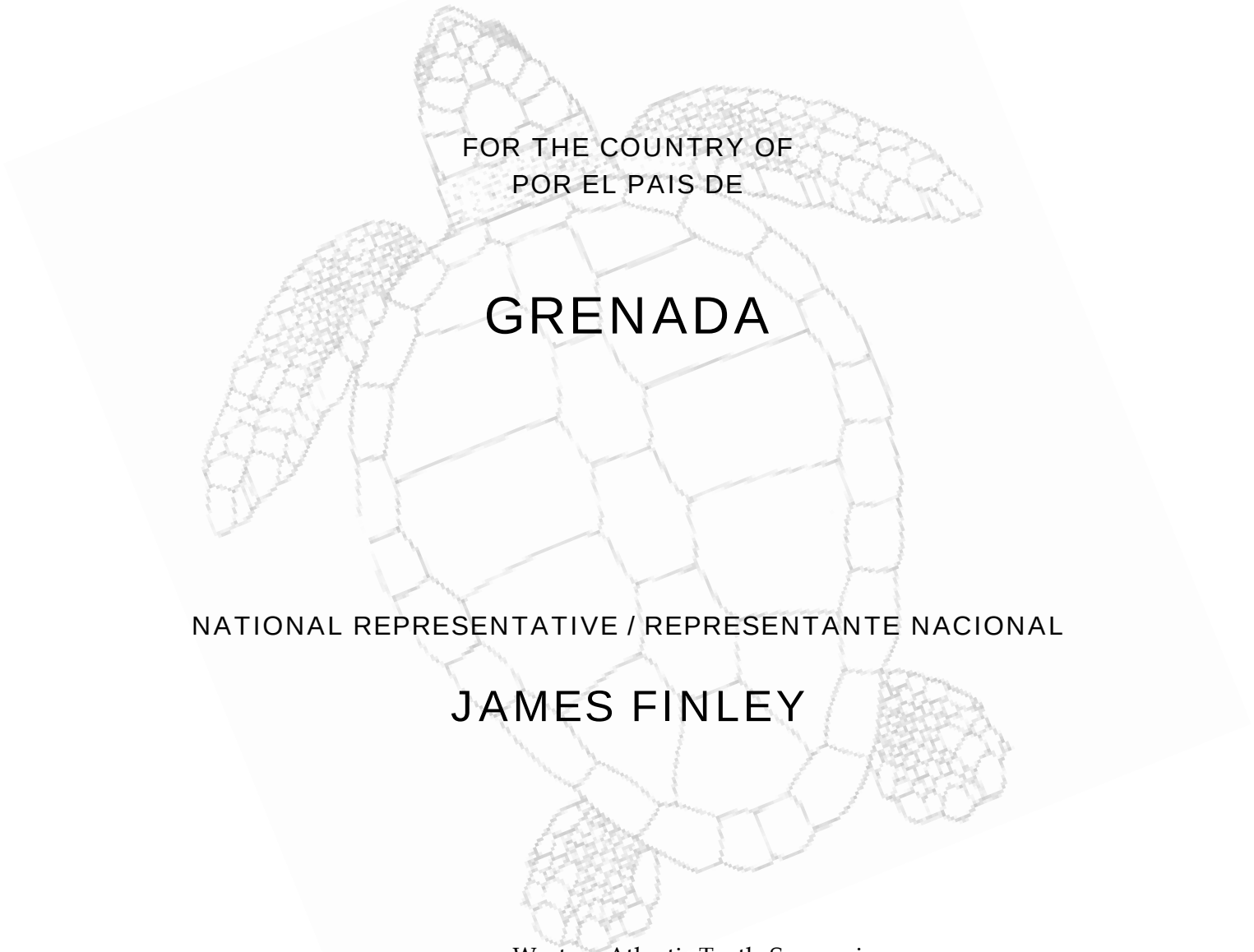

FOR THE COUNTRY OF
POR EL PAIS DE

GRENADA

NATIONAL REPRESENTATIVE / REPRESENTANTE NACIONAL

JAMES FINLEY

Western Atlantic Turtle Symposium
Simposio de Tortugas del Atlantico Occidental

17-22 July / Julio 1983
San José, Costa Rica
Grenada National Report, WATS I Vol. 3, pages 184-196

WESTERN ATLANTIC TURTLE SYMPOSIUM
San José, Costa Rica, July 1983

NATIONAL REPORT FOR THE COUNTRY OF

GRENADA

NATIONAL REPORT PRESENTED BY

James Finley
The National Representative

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DATE SUBMITTED: 15 February 1983

Please submit this NATIONAL REPORT no later than 1 December 1982 to:

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Grenada National Report, WATS I Vol. 3, pages 184-196

WIDECAST
Wider Caribbean Sea Turtle Conservation Network

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 size and trend, 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. In most cases it was the first time a national sea turtle assessment had been conducted.

Despite the potential value of this information to agencies responsible for conducting stock assessments, monitoring recovery trends, and safeguarding critical habitat in the 21st century, the hand-written National Reports, largely illegible in the published proceedings, have slipped into obscurity. To help ensure the legacy of these symposia, we have digitized the entire proceedings, including the National Reports, plenary presentations and panels, and annotated bibliographies of 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 should be cited:

Finley, J. and P. Williams. 1984. National Report for Grenada, pp.184-196. *In*: Bacon, P., F. Berry, K. Bjorndal, H. Hirth, L. Ogren and M. Weber (Editors), Proceedings of the First Western Atlantic Turtle Symposium, 17-22 July 1983, San José, Costa Rica. Volume III: The National Reports. RSMAS Printing, Miami.

Karen L. Eckert
WIDECAST Executive Director
June 2009

COUNTRY: GRENADA

INTRODUCTION

The Sea Turtle Socio-economic and Nesting Survey, Study of Grenada (including Isle de Ronde and Isle de Caille) began in March 1982 and continued until December 1982. It was an extensive rather than intensive survey. The purpose of this study was to collect information on and prepare a national report on Grenada for the Western Atlantic Turtle Symposium (W.A.T.S.) to be held in July 1983 in San José, Costa Rica. (For Grenada even after the report is submitted data collection will continue). The following objectives guided the study and indicate the scope of the investigation undertaken.

(a) Record the type of shoreline about the island of Grenada. The purpose being to indicate the actual and potential sea turtle nesting beaches. This data will be valuable baseline work for subsequent studies, and also to document the kinds and amount of shoreline throughout the islands.

(b) Record the areas that turtle sightings are frequently made by fishermen and other persons visiting the beaches; record data on concentrated and dispersed nesting locations.

(c) Compile data of any kind that may indicate the status of sea turtle populations in Grenada.

(d) Review the present conservation and management programs related to sea turtles.

(e) Determine the socio-economic importance of sea turtles.

(f) Make recommendations to help promote the survival status of sea turtle populations inhabiting the territorial waters of the Grenada group.

BACKGROUND

General Geographical description of Grenada Group:

Grenada is an independent English speaking east Caribbean State consisting of Grenada, Carriacou and Petit Martinique, Isle De Ronde and a number of small islets. It is the southern most island of the East Caribbean chain, lying between 12º and 13º north and 61º and 62º west (see map references).

The island group has a population of approximately 110,000 (1970 census). The citizens have very strong contacts with the sea and shoreline. The islands are volcanic in origin with evidence of sandstone and shale in many areas. For the main island of Grenada, there is substantial runoff, which together with other factors has generated much shoreline sand. Grenada is very much less of an oceanic island, than Barbados only about 100 miles away. The vegetation is tropical continental with certain varieties which reveal the dry season/rainy season character of the climate.

COASTLINE AND OFFSHORE AREAS

The coastline of the Grenada group is a pattern of sandy bays and rocky points. There is much more sandy shore than rock or cliff shoreline. Grenada is notably affected by the North East Trade Winds and hence the north and eastern shoreline experience high energy swells almost constantly. Hence the beaches to the Leeward side of the island have a moderately sloping beach profile and well vegetated 10 or 50 meters above the high tide mark.

The Windward beaches have gentler profiles in the high tide swash. However, in areas as characterized by Conference Bay, sand dunes spread along the profile of the beach up to 20 meters from the tide

mark. The shorter beaches occur in areas along the windward coast where the rocky points are frequent. Here the beaches are less rough.

On Grenada the colour of sand on beaches varies. Generally the leeside beaches have black sand probably due to the substantial run off from rivers. The white sand occurs in the beaches from Grand Mal to Point Saline. The windward beaches are generally white with the occasional admixture of white and black sand. Mangrove swamps occur in areas to the South East but sand, mud, beaches can be found at these locations.

Isle de Ronde, an island of about 1.5 square miles, has white sand to the south and black sand to the west. Isle de Caille, another 0.5 square mile island only 0.5 km away, has black and pervading the beaches.

The offshore areas of Grenada etc. consist of a submarine shelf of approximately 400 sq. miles of bottom varying from 0 to 20 fathoms. Most of this area consists of active and dead coral-line surfaces. Large expansion of sea grass beds and soft coral occur at various locations. References are given of known vegetation types, on map.

Since the 1940's various persons were concerned that the Sea Turtle maybe overfished in Grenada. This concern was generated from the observation made that the nest of the turtles were being over-exploited. A program was launched in the late 1950's to generate more recruitment. The principal and most visible threat to the turtle is that trammel nets which are set on the reefs, especially at times of nesting. The fishermen who engage in turtle fishing do not engage in turtle fishing exclusively. Another method of fishing is by spear-fishing.

Divers will shoot turtles while spear-fishing. Persons show strong preferences for various types of turtle. The hawksbill and green are the choice for meat but the loggerhead and leatherbacks are often rejected because of the "freshy" fat. The hawksbill and green turtles are also prized for their backs, however there is a marked preference for the hawksbill back.

By a survey conducted throughout the 1981 period, it is estimated that about 1,000 turtles are caught annually. Those turtles more than 50 pounds, the number is probably 300 with the remainder being juveniles.

There are more and more beaches that are becoming less and less secluded hence fishing pressure on eggs have been serious. The fishing pressure by divers is not serious but the threat of trammel nets is a serious one. Despite this, through personal observations and interviews of divers and net owners, juveniles are spotted at a rate of at least 4 - 6 or 7 a day on reefs.

STATUS OF KNOWLEDGE OF SEA TURTLES

No known objective or scientific observations have been made of Sea Turtle populations in Grenada. At Carriacou some work has apparently been done in the past.

The concerns of fisheries up to lately had been the responsibility of the Agriculture Ministry. Little serious action had been taken by way of conserving these species. Fisheries in Grenada is multispecies in nature and principally artisanal. Legislation was passed[1] in 1957 in an effort to protect turtles, however since turtles can be landed on any beach on the island, it has been difficult to monitor or control the exploitation of these species. Hence knowledge of the present status of sea turtle populations is drawn from observations made by local trammel fishermen, divers and boys who hunt the turtle and their eggs.

[1] *Editor's note (2009):* In the original National Report, the word "past" appeared here.

The divers and fishermen reveal that although there are principal nestings at secluded beaches and on the offshore uninhabited islands, there were no concentrated nesting sites. The turtles observed making crawls and actual nestings were those of green and hawksbill turtles. Records were drawn from interviews with the three categories of turtle predators. Divers were the most helpful. A local diver in the southern part of Grenada observes green and hawksbill turtles frequently. He reports that out of nesting season juveniles of these species are observed feeding all along the grass beds which are prevalent in the area. There are many small secluded beaches in the area, he reports that whenever the turtles are found basking above the grass beds in the day time then be sure they will come in at night.

Leather-back turtles are the most infrequent and are most often seen out at sea by fishermen. The turtles fishermen report these are most frequent in the "rainy season" when the water is less salt. The loggerhead turtles have never been reported as nesting on beaches. The fishermen either catch them in dives or in the nets. Even when caught near shore they have not been found to have eggs. Only once did a fisherman report having seen eggs in a loggerhead female. Notably fishermen do not catch male loggerheads.

Through repeated interviews and probings the fishermen have indicated that only four types of turtles are observed in Grenada. These are green, hawksbill, loggerhead and leatherbacks. Reliable and keen divers have reported that turtles having the appearance of "flatback" are often caught on the offshore islands to the north of the Grenada islands. The fishermen have said they always call them a cousin to the green turtles.

To the north of the Grenada island where there are a number of offshore islands there are significant populations of turtles. Divers interviewed have indicated that hawksbill and green turtles concentrate in different areas depending on bottom type. He reports that the hawksbill feed on sponges and soft coral and occur principally along the London Bridge channel area. The green turtles which eat sea grass frequent the grass beds between the sister islands and further north of Isle De Ronde. The leatherback though not very frequent around the island makes a favourite nesting site on the Levera Beach in rainy season June -July. Only the females of leatherbacks are observed.

In the southern offshore area of Grenada, green and hawksbills are prevalent. Green turtles are especially prevalent around Hog Island where there are extensive areas of sea grass beds. Two fishermen reported that green turtles lay when larger than 80 lbs and hawksbills lay when larger 50/60. However, one reported that he had observed eggs in a 30/lb hawksbill turtle. They also reported that hawksbills are quite predictable since they lay in 15 days cycles several times in a season and according to the moon. When fresh tracks are observed, the fishermen know when to return for the subsequent crawl. They report also that hawksbills lay furthest up the beach even under bushes in the highest sand.

Fishermen report that April, May is the principal mating time when the turtles are seen chasing each other and even disregarding divers. On the southern portion of Grenada, a diver reports that October, November and December are the prevalent feeding time for the hawksbill turtles.

Another-seine net fishermen diver reports that juveniles are prevalent feeding on the seaweed (moss) in the early part of the year when the mosses are blooming. N.B. On the leeward side of the Grenada island, where seine net fishing is practiced, turtle nestings are rare and although occasionally nets draw in small juveniles, the turtles are not frequent in this area

METHODS

With limited time and resources available for such a survey in Grenada, the nature of the research was very narrow. The study involved:

a. Visits to most beaches which were actual and potential nesting sites of turtles;

b. Researching government records of turtle management and most important interviews and discussion with turtles fishermen, local men, and divers;

c. Observations of catches of turtles brought at the landing sites.

The ordinance survey map was used extensively for back up studies on the location for beaches in perspective. These maps were also used for translating data collected in the field to the smaller scale maps.

RECOMMENDATIONS

The findings of the survey were limited but yielded much valuable information on the status of the sea turtles about Grenada. The following recommendations should be considered:

1. Expend much effort in enforcing the regulations for protection of the turtles in the closed season.

2. Mount a campaign against the use of nets on reefs during the closed season.

3. Establish the presently secluded beaches of the out islands as sanctuaries for nesting turtles.

BEACH LIST*

Name of Bay or Island	Approximate Length of Coastline (km)	Approximate Length of Suitable Beaches (meters)
Black Bay	0.7	300
Marigot	0.7	0
Grand Roy	0.7	300
Dothan	1.0	700
Palmiste	2.0	1,000
Gouyave	1.0	200
Milet	1.3	300
Maran	1.1	100
Mount Edgecombe	1.2	0
St. Marks	3.2	400
Crayfish Bay	1.5	100
Duquesne	1.3	300
David	3.6	300
Sauteurs	2.0	2,000
Irvins	2.5	150
Levera Bay	1.8	800
Grenada (Bathway)	3.8	1.500
Antoine	2.5	2.250
Conference/Great River	6.9	6,150
Grenville Bay	4.5	1,500
St. Andrews	3.3	250
Great Bacolet	3.5	1,250
Menere	2.1	250
Crochu Harbour	1.6	250
La Tante	1.2	100
Galby	1.3	500
Requin	1.9	700
Le Petit Trou	4.4	300

BEACH LIST*

Name of Bay or Island	Approximate Length of Coastline (km)	Approximate Length of Suitable Beaches (meters)
La Sagesse	1.9	800
St Davids	1.5	0
Little Bacolet	1.1	500
Petit Bacaye	1.4	200
Westerhall	3.5	100
Calivigny Harbour	2.8	0
Calivigny Island	3.0	400
Woburrn Bay	6.0	0
Hog Island	3.7	500
Mt. Hartman	3.5	0
Lance aux Épines, Prickly Bay	4.5	800
True Blue Bays	2.4	600
Bagadi	1.1	200
Hardy Bay	1.0	0
Grand Bay	1.2	600
Cato Bay	0.4	400
Black Bay	0.4	230
Point Saline to Petit Bout Pt	4.0	600
Morne Rouge	1.5	600
Grand Anse	3.9	2,300
Martins	0.6	0
St. George's	1.9	100
Grand Mal	2.6	1,000
Dragon	1.3	400
Beausejour	3.2	300
Halifax	2.5	50
Three Sisters Island	6.0	2,000
Isle de Ronde	5.5	700
Isle de Caille	2.0	300
Lagoon (city) Harbour	2.0	300

* *Editor's note (2009):* No name or other identification was given to this table in the original report.

TABLE 1. GEOGRAPHIC INVENTORY

Length of Coastline*	
Km^2 of Continental Shelf Area	2780 Km
Seaward Extent of Jurisdictions	
Territorial Sea	19.3 Km (12 mi**)
Extended Economic Zone	321.8 Km (200 mi**)
Fisheries Jurisdiction	321.8 Km (200 mi**)
Other (Describe)	

* Coastline length is the measurement of the national seaward boundary of a country; i.e., the distance from border to border for a coastal country and the distance around an island country.

** *Editor's note (2009):* For consistency, we converted distance from miles to kilometers.

TABLE 2. COASTAL HABITAT INVENTORY OF MARINE SHORELINE			
	Km of Shoreline		
Marine Shoreline Characteristics*	Undeveloped	Developed**	Total
1. Sand Beach (Total)	29.5	5.1	***34.6
A. High Energy	14.9	1.0	15.9
B. Low Energy	14.6	4.1	18.7
2. Reef (exposed)	4.0	0.0	4.0
3. Rocks	70.3	10.0	80.3
4. Cliffs	24.5	3.5	28.0
5. Vegetation (Total)	108.0	15.5	123.5
A. Vines	?	?	?
B. Grasses	?	?	?
C. Mangroves	7.0	0.0	7.0
D. Coconut Trees	?	?	?
E. Other Trees or Shrubs	100.0	15.5	115.5
F. Marshes	1.0	0.0	1.0
6. Mouths of Lagoons, Rivers, Canals	15.0	1.5	16.5
7. Total Shoreline	***251.3	***35.6	***286.9

* Refer to SEA TURTLE MANUAL (Aerial Survey)
** Human development or use (See MANUAL)
*** *Editor's note (2009):* Totals were corrected from the original to reflect accuracy in summed values

TABLE 2A. MARINE HABITAT INVENTORY OF BOTTOM TYPES (supplementary page)

Habitat Bottom Types	Km^2 of Habitat	
	Inside 25m (shoreward)	Outside 25m (shoreward)
1. Sand	?	?
2. Mud	?	?
3. Rocks	?	?
4. Submerged Vegetation	?	?
5. Reefs (Total)	250 Km	?
A. Fringing Reefs	20 Km	?
B. Patch Reefs	60 Km	?
6. Other		

TABLE 3. NESTING BEACH INVENTORY			
List beaches in geographic sequence. Provide additional information on following page.			
Name of Beach	Length In Km	Species Nesting (use abbreviations)*	Months of Recorded Nesting
1. Palmiste Bay	2.0	Cc, Cm, D	May, June, July, August
2. St. Mark Bay	1.0	Cm	June, July
3. South Bay (Isle de Calle)	0.5	E	April, May, June, July, August
4. North Bay (Isle de Calle)	0.5	Cm, E	April, May, June, July, August
5. Bacolet Bay	1.0	Cc, Cm, E	April, May, June, July, August
6. St. Davids Bays	3.0	Cc, Cm, D, E	April, May, June, July, August

TABLE 3. NESTING BEACH INVENTORY			
List beaches in geographic sequence. Provide additional information on following page.			
Name of Beach	Length In Km	Species Nesting (use abbreviations)*	Months of Recorded Nesting
7. Point Salines Bays (Southeast)	2.0	Cm, Cm**, E	April, May, June, July, August
8. Point Salines Bays (West)	1.5	Cc, Cm, E	April, May, June, July, August
9. Duquesne Bay	0.5	Cm, E	May, June, July, August
10. La Seuis Bay		Cm, D, E	May, June, July, August
11. David Bay	1.0	Cm, D, E	April-September
12. Irving Bay	1.5	D, E	April-August
13. Rathan Bay	0.5	Cm, D, E	April-August
14. Levera Beach	1.5	Cm, D, E	April-September
15. Great River Conference Beach	5.2	Cc, Cm, D, E	April-September
16. Sandy Island	2.0	Cm, E	April-August
17. North Bay (Isle de Ronde)	1.0	Cm, E	April-August
18. Halfmoon Bay (Isle de Ronde)	1.0	Cm, E	April-August
19. Grenada Bay (Bathway)	2.0	Cm, D, E	April-September
20. Antoine Bay	1.5	Cm, D, E	April-September
Species*	Abbreviation		
Caretta caretta	Cc		
Chelonia mydas	Cm		
Dermochelys coriacea	D		
Eretmochelys imbricata	E		
Lepidochelys kempi	Lk		
Lepidochelys olivacea	Lo		
** *Editor's note (2009):* In the original National Report, "Cm" appears twice.			

TABLE 3A.1. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Fort Jeudy and Westerhall
Energy classification of beach	Low
Description of sand characteristics	White carbonate sand with moderate proportion of silicon.
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	Very much frequented by green and hawksbill turtles

TABLE 3A.2. Supplemental data on beaches.	
Name of island	
Name of beach	Degra, Grand, Cato, Black Bays
Energy classification of beach	High
Description of sand characteristics	Well-sorted carbonate orange and white sand. High proportion of silicon.
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	Exposed bays but much frequented by turtles: hawksbill, green, loggerheads.

TABLE 3A.3. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	North Grenada, Three Sisters Islands
Energy classification of beach	High-moderate
Description of sand characteristics	White carbonate and silicate sand.
Level of human development and/or impact	None
Estimated nesting activity	Major
General comments	Most regular nesting sites for all the four species of turtles which are observed about the island.

TABLE 3A.4. Supplemental data on beaches.	
Name of island	Out island of Grenada
Name of beach	Isle of Ronde
Energy classification of beach	Moderate-low
Description of sand characteristics	White carbonate/silicate sand on northeast and black volcanic on northwest
Level of human development and/or impact	Light-moderate
Estimated nesting activity	Major
General comments	A very regular nesting area for turtles of all sorts since this area has foraging areas that are significant.

TABLE 3A.5. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Hog Island; Calivigny Island
Energy classification of beach	Moderate
Description of sand characteristics	White carbonate sand, well sorted occasionally
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	A very regular turtle nesting site. Even in mangrove mud/sand areas turtles are known to nest.

TABLE 3A.6. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Prickly Bay; True Blue Bay
Energy classification of beach	Moderate
Description of sand characteristics	Variety of carbonate sand, fine to coarse grained.
Level of human development and/or impact	Moderate-heavy
Estimated nesting activity	Regular
General comments	Sites visited by hawksbill and green turtles.

TABLE 3A.7. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	La Sagesse to Petit Bacaye Bays
Energy classification of beach	Low
Description of sand characteristics	Carbonate sand well sorted
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	Good foraging offshore; much vegetation on shoreline

TABLE 3A.8. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	La Sagesse, Little Bacolet, Petit Bacaye
Energy classification of beach	Low
Description of sand characteristics	White carbonate sand, coarse to fine, well graded.
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	Low energy beaches hemmed in by rocky points. Very much frequented by hawksbill and green turtles.

TABLE 3A.9. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Antoine Bay
Energy classification of beach	High-moderate
Description of sand characteristics	Volcanic, well sorted
Level of human development and/or impact	None
Estimated nesting activity	Regular
General comments	Green and hawksbill nesting area. Much vegetation onshore; coconut trees, mangroves.

TABLE 3A.10. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Conference, Great River
Energy classification of beach	High
Description of sand characteristics	Sand dunes, gently sloping. Classic high energy beach, carbonate sand.
Level of human development and/or impact	
Estimated nesting activity	Major
General comments	Significant runoffs into bay by rivers. A significant nesting site; offshore foraging common.

TABLE 3A.11. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Great Bacolet
Energy classification of beach	Moderate
Description of sand characteristics	Admixture of volcanic/carbonate sand.
Level of human development and/or impact	None
Estimated nesting activity	Major
General comments	Secluded beach. Much vegetation. Much foraging area offshore. Stream runs into bay.

TABLE 3A.12. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Crochu to Le Petit Trou Bays
Energy classification of beach	Moderate
Description of sand characteristics	Galby (black sand), other beaches carbonate, well sorted.
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	Small bays with streams running into them. Significant foraging offshore for green and hawksbill. Loggerheads are occasional.

TABLE 3A.13. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	St. Mark's Bay
Energy classification of beach	Moderate
Description of sand characteristics	Volcanic black sand, well sorted.
Level of human development and/or impact	Moderate
Estimated nesting activity	Incidental
General comments	Hawksbill and green turtles occasionally nest on the beach; however, human impact is significant.

TABLE 3A.14. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Duquesne
Energy classification of beach	Moderate
Description of sand characteristics	Volcanic with carbonate sans, well sorted.
Level of human development and/or impact	Moderate
Estimated nesting activity	Incidental
General comments	Hawksbill and green turtle nesting. Beach profile steeply sloping frequently, occasionally gently sloping in high swells.

TABLE 3A.15. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	David Bay
Energy classification of beach	Moderate
Description of sand characteristics	Black volcanic sandy beach with vines and coconut trees, streams running into bay.
Level of human development and/or impact	Light
Estimated nesting activity	Regular
General comments	Hawksbill and green turtles nesting. Foraging areas outside beach.

TABLE 3A.16. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Sauteurs Bay
Energy classification of beach	High-moderate
Description of sand characteristics	Principally carbonate sans. However, an admixture of volcanic/carbonate exists.

Level of human development and/or impact	Moderate
Estimated nesting activity	Regular
General comments	Human impact on parts of the beach significant. However, offshore is a good foraging area.

TABLE 3A.17. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Palmiste Bay
Energy classification of beach	Moderate-low
Description of sand characteristics	Fine volcanic sand with occasionally coarse sections of sand.
Level of human development and/or impact	Heavy
Estimated nesting activity	Regular
General comments	Occasionally heavy or high energy swells affect this beach. Beach is used as a source of sand. Gently sloping profile.

TABLE 3A.18. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Gouyave Bay
Energy classification of beach	Moderate
Description of sand characteristics	Volcanic and carbonate admixture, fine to medium grains, well sorted.
Level of human development and/or impact	Heavy
Estimated nesting activity	Incidental
General comments	Human impact on this beach area is very heavy. Profile of the beach is steep. Low energy swells often with occasional high energy swells.

TABLE 3A.19. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Levera Bay
Energy classification of beach	High energy
Description of sand characteristics	Coarse to fine carbonate sand. Much high energy swells with rapid current movement.
Level of human development and/or impact	Light
Estimated nesting activity	Major
General comments	A major nesting area for all four species (types) of turtles. Foraging areas offshore are significant.

TABLE 3A.20. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Bathway (Grenada Bay)
Energy classification of beach	High
Description of sand characteristics	Well sorted carbonate sand. Sand movement is frequent
Level of human development and/or impact	Light
Estimated nesting activity	Regular
General comments	Beach has fringing reef close to shore at certain points.

TABLE 3A.21. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Beausejour
Energy classification of beach	Low
Description of sand characteristics	Black volcanic sand, well sorted and often fine
Level of human development and/or impact	Moderate
Estimated nesting activity	Incidental
General comments	Beach on quickly bay. Beach encroaching on the land. Source of sand for commercial purposes.

TABLE 3A.22. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Black Bay
Energy classification of beach	Moderate
Description of sand characteristics	Black volcanic, well sorted
Level of human development and/or impact	Light
Estimated nesting activity	Regular
General comments	Low energy/moderate energy beach. Moderate profile with much vegetation. Hawksbill and green turtle nesting site.

TABLE 3A.23. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Dragon Bay
Energy classification of beach	Moderate
Description of sand characteristics	Beach profile moderately steep. Coarse to fine well sorted sand; black with white.
Level of human development and/or impact	Moderate
Estimated nesting activity	Incidental
General comments	Impact of human activity; seine nets, etc. have limited turtle nesting.

TABLE 3A.24. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Grand Roy Bay
Energy classification of beach	Moderate-low
Description of sand characteristics	Black volcanic sand well sorted, mostly fine. Profile moderately sloping.
Level of human development and/or impact	Heavy
Estimated nesting activity	Incidental
General comments	Moderate energy beach with gently sloping profile. Only occasional nesting reported.

TABLE 3A.25. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Grand Mal Bay
Energy classification of beach	Moderate-low
Description of sand characteristics	Carbonate white sand, well sorted.
Level of human development and/or impact	Moderate
Estimated nesting activity	Incidental

General comments	Beach broken occasionally by rocks. Low energy. Sein nets frequently fish in this location. Hawksbill and green turtles nest on this beach occasionally. Feeding offshore by turtles is frequent.

TABLE 3A.26. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Dothan Bay
Energy classification of beach	Moderate-low
Description of sand characteristics	Volcanic mixed with carbonate sand. Beach broken by rocks occasionally.
Level of human development and/or impact	Light
Estimated nesting activity	Incidental
General comments	Beach frequently used by seine-net fishermen. Beach broken by rocks, occasionally.

TABLE 3A.27. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Point Saline to Petit Cabrits Point
Energy classification of beach	Moderate
Description of sand characteristics	Carbonate, medium grain, well sorted.
Level of human development and/or impact	None
Estimated nesting activity	Major
General comments	A frequent nesting site for hawksbill and green turtles.

TABLE 3A.28. Supplemental data on beaches.	
Name of island	Grenada
Name of beach	Morne Rouge Bay, Quarantine Point
Energy classification of beach	Low
Description of sand characteristics	White, carbonate, well sorted.
Level of human development and/or impact	Moderate
Estimated nesting activity	Regular
General comments	Shallow approach to the beach. Hawksbill and green turtle nesting.

TABLE 6. ESTIMATED POPULATION SIZE OF NESTING FEMALES

Summarize the estimated number of nesting females for the years indicated and describe methods of estimation on the next page.

Species	Year					
	1982	1981	1980	1979	1978	1977
Caretta caretta	100 ± 25	*	*	*	*	*
Chelonia mydas	200 ± 50					
Dermochelys coriacea	25 ± 10					
Eretmochelys imbricata	> 500					
Lepidochelys kempi						
Lepidochelys olivacea						

* Figures not significantly different.

TABLE 7. FORAGING AREAS INVENTORY

Name of Area (or give coordinates)	Approx. Area (Km^2)	Species Foraging (use abbreviations & approx. numbers)	Nature of Evidence (observation, fishery, incidental catch)
1. Bays: Point Saline to Quarantine Point	15	Cm (all sizes), E	Divers observations, interviews
2. Glover Island 11° 59' N, 60° 46' W	20	Cm (all sizes), E (juvenile, sub-adult)	Divers observations, interviews
3. Grand Mal Bay	5	Cm, D (occasionally) all sizes, sub-adult, E	Divers, seine fishermen interviews
4. La Tante Bay to Galby Bay (Woburn / Hog Island)	15	Cc, Cm, E	Divers, netsetters interviews
5. Crochu Bay (Woburn / Hog Island)	15	Cc (sub-adult), Cm, D (occasionally), E	Divers, netsetters interviews
6. Great Bacolet Bay (Woburn / Hog Island)	10	Cc, Cm (sub-adult), D (occasionally), E	Divers, netsetters interviews
7. Isla de Caille (Isle de Ronde)	25	Cm (all sizes), E	Divers, netsetters interviews
8. Three Sisters Levfra (Isle de Ronde)	15	Cc, Cm & E (all sizes except for Ca)	Divers, netsetters, fishermen interviews
9. David Bay (Isle de Ronde)	10	E & Cm (all sizes)	Divers, netsetters, fishermen interviews

Species	Abbreviation
Caretta caretta	Cc
Chelonia mydas	Cm
Dermochelys coriacea	D
Eretmochelys imbricata	E
Lepidochelys kempi	Lk
Lepidochelys olivacea	Lo

TABLE 8. TURTLE SPECIES PRESENT ON FORAGING AREAS.

Please complete one of these tables for each of the areas identified in Table 7. Number each table as enumerated in Table 7 (7-1, 7-2, etc.).

Species	Month												Months of Greatest Activity
	J	F	M	A	M	J	J	A	S	O	N	D	
Caretta caretta						X	X	X	X	X	X	X	August (adult)
Chelonia mydas	X	X	X	X	X	X	X	X	X	X	X	X	April-June (adults & juveniles)
Dermochelys coriacea						X	X						June & July (adults only)
Eretmochelys imbricata	X	X	X	X	X	X	X	X	X	X	X	X	All year (juveniles) May-August (adults)
Lepidochelys kempi													
Lepidochelys olivacea													

TABLE 11. LANDING SITES FOR TURTLES AND TURTLE PRODUCTS

Name of Port or Site	Species Landed (use abbrev)	Fishing Gear Used	Months of Landings	Numbers & Weights (estimate)
1. Sauteurs	Cm, E	Nets and spears	All year	Estimates
2. Grenville	Cm, E	Nets and spears	All year	
3. Calliste	Cc, Cm, E	Nets and spears	All year	
4. Bacolet	Cc, Cm, E	Nets and spears	All year	
5. Woburn	Cm, E	Nets and spears	All year	
6. Calivigny	Cm, E	Nets and spears	All year	

Species	Abbreviation
Caretta caretta	Cc
Chelonia mydas	Cm
Dermochelys coriacea	D
Eretmochelys imbricata	E
Lepidochelys kempi	Lk
Lepidochelys olivacea	Lo

TABLE 12. TOTAL ANNUAL TURTLE LANDINGS IN NUMBERS

Do not include turtles caught incidental to other fishing operations (e.g., shrimp trawling)

Species	1982 (Kg)	1981 (Kg)	1980 (Kg)	Method of Determination
Caretta caretta	30-50 1,500	30-50 1,500	30-50 1,500	Market figures, observations, interviews
Chelonia mydas	100-150 2,500	100-150 2,500	100-150 2,500	Market figures, observations, interviews
Dermochelys coriacea	10-15 1,000	10-15 1,000	10-15 1,000	Market figures, observations, interviews
Eretmochelys imbricata	100-200 5,000	100-200 5,000	100-200 5,000	Market figures, observations, interviews
Lepidochelys kempi				
Lepidochelys olivacea				

TABLE 16. EMPLOYMENT DEPENDENT ON TURTLES

Activity	Total Annual Numbers of Persons	Est. Annual Income From Turtles	Comments
Fishing	50 ± 10	$10,000 - $15,000	Income based on $0.90 per lb (live wt) * obtained for turtles at local market
Processing			Fishermen process their catch
Selling			Fishermen sell their catch on most occasions

* Market prices for turtle products in Grenada are as follows: live weight ($0.90 per lb.)

TABLE 16A. EMPLOYMENT DEPENDENT ON TURTLES (supplementary page)

In addition to marketed products, it is estimated that the following are taken annually from beaches or at sea for subsistence use:

A: Subsistence exploitation
1. Estimated number of eggs: 6,000-10,000
2. Estimated number of nesting females: 100
3. Number of turtles caught at sea: 50-75

B: Social aspects

In addition to the described fishery activities, exploitation of turtles may be permitted in some countries according to special rights or privileges extended to certain groups of people. If such specialized turtle exploitation exists, please give details (i.e., beach rights, ethnic traditions, specific seasons of the year, special permits, etc.).

TABLE 20A. REGULATORY AUTHORITY (supplementary page)

Please list National, regional, and local legislation concerning turtle management and conservation. List title, date, and stated purpose.

GRENADA

Provided that the Governor may from time to time by notice in the *Gazette* appoint some other period or periods in lieu of the periods fixed as aforesaid, and after any such appointment the periods so appointed shall be the close season for the purpose of this Ordinance.

5. The Governor may from time to time by notice in the Gazette declare that, as to any of the wild birds enumerated in the Second Schedule the provisions of section 4 shall cease to apply, and may from time to time vary or cancel any such alteration; and thereupon the provisions of the said section shall cease to apply, or shall again apply (as the case may be), with such variation as by the declaration may be provided, and the Governor may also, by notice as aforesaid, declare as to any bird not enumerated in the said schedule that it shall from the date of the notice be deemed to be included in the said Schedule for such close season as may be named in the notice as applicable to it, and may from time to time alter or amend the notice in the same way as if the bird had been enumerated in the Schedule; and thereupon the bird shall to all intents and purposes be deemed to be included in the Schedule for the close season assigned to it in the said notice.

6. Except as herein mentioned any person who shall:

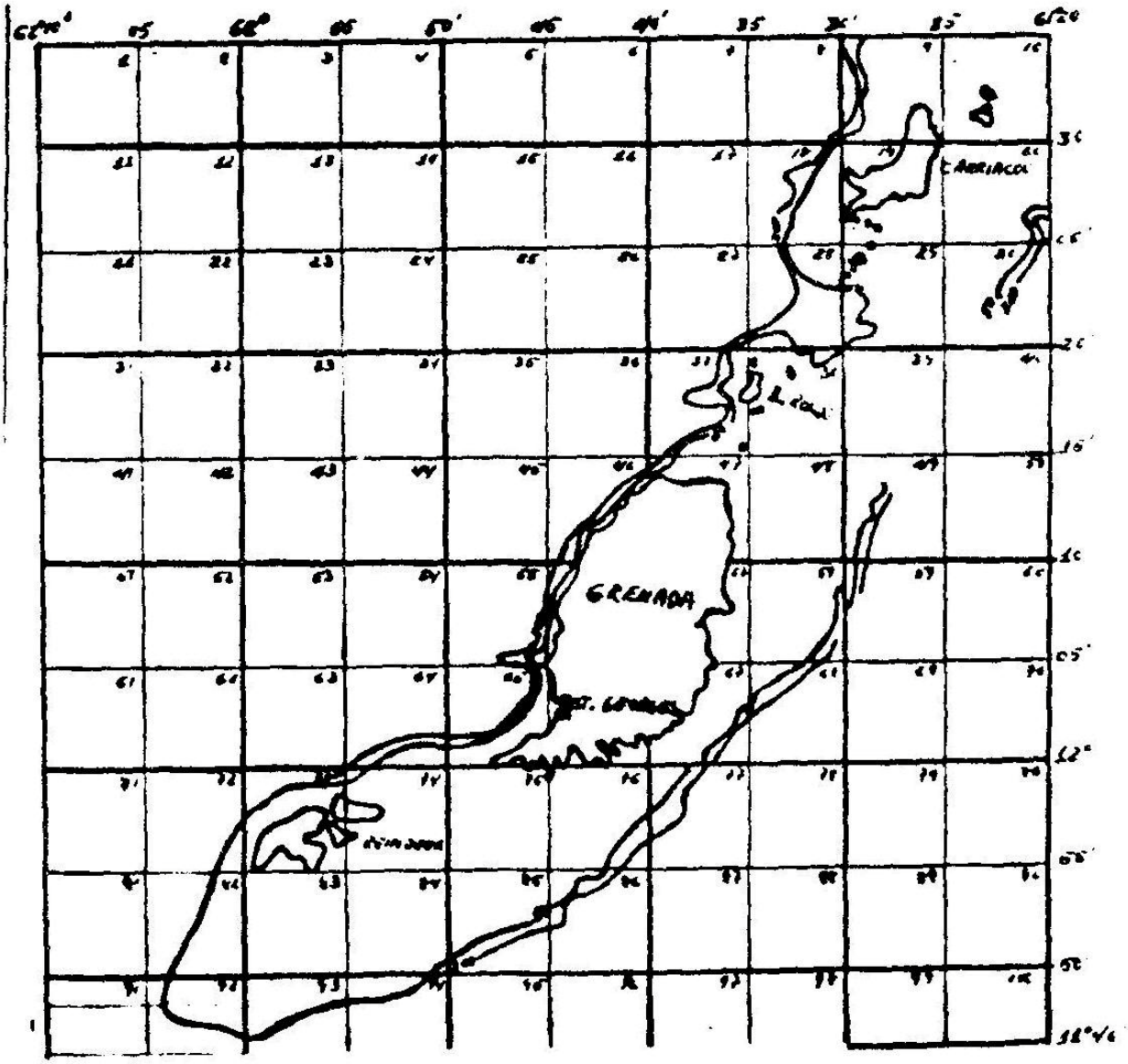
(a) kill, wound or take, or attempt to kill, wound or take, any of the wild birds enumerated in the Second Schedule to this Ordinance or any turtle or oysters, during the close season for the same; or

(b) take the eggs or nest of any such bird during the close season for the same, or have in his possession any such bird killed or wounded or taken or any eggs or nest taken during the said season; or

(c) have in his possession any turtle, the eggs of any turtle or any oysters, during the close season for the same, shall be guilty of an offence against this Ordinance.

Annex I. Grenada – W.A.T.S. National Report Study Area.[2]

[2] *Editor's note (2009):* Maps and figures are reprinted exactly as they appear in the original WATS I Proceedings (Bacon et al., 1984); we regret the poor quality exhibited in some cases.



THE GRENADA SHELF - 100 BATH ' FATHOMS

THE NATIONAL REPORT
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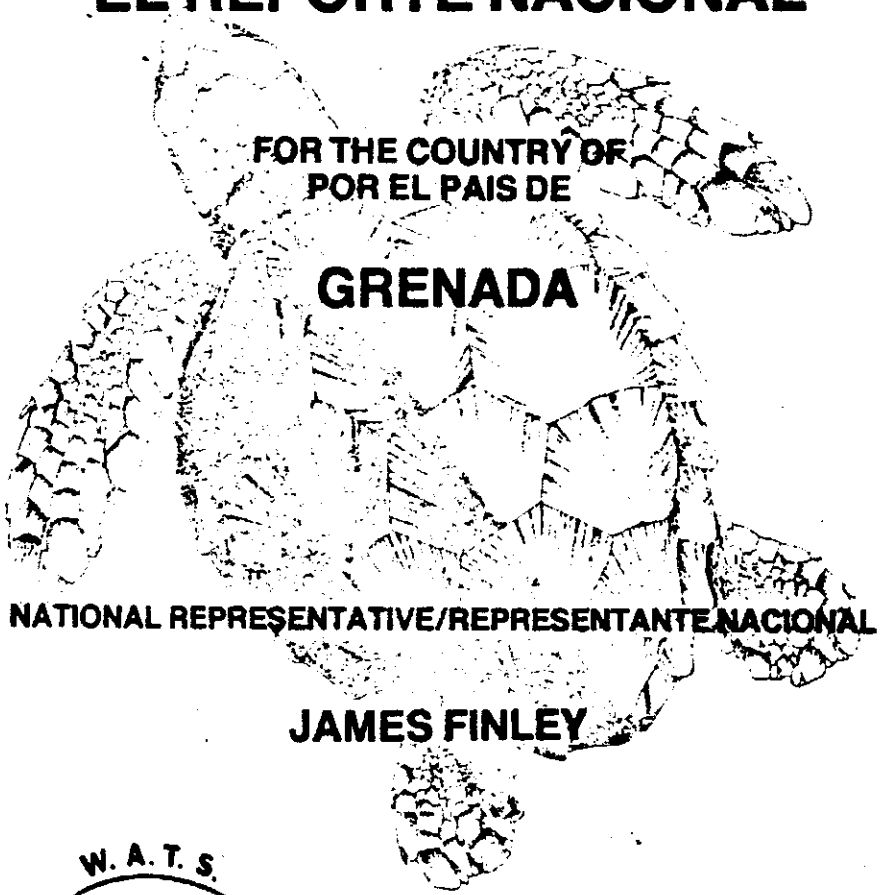


FOR THE COUNTRY OF
POR EL PAIS DE

GRENADA

NATIONAL REPRESENTATIVE/REPRESENTANTE NACIONAL

JAMES FINLEY

W. A. T. S.
S. T. A. O.

Western Atlantic Turtle Symposium
Simposio de Tortugas del Atlantico Occidental

17-22 July/Julio 1983
San Jose, Costa Rica

W. A. T. S.
S. T. A. O.

WESTERN ATLANTIC TURTLE SYMPOSIUM

San Jose, Costa Rica

July 1983

NATIONAL REPORT FOR THE COUNTRY OF

Grenada

NATIONAL REPORT PRESENTED BY

James Finlay
The National Representative

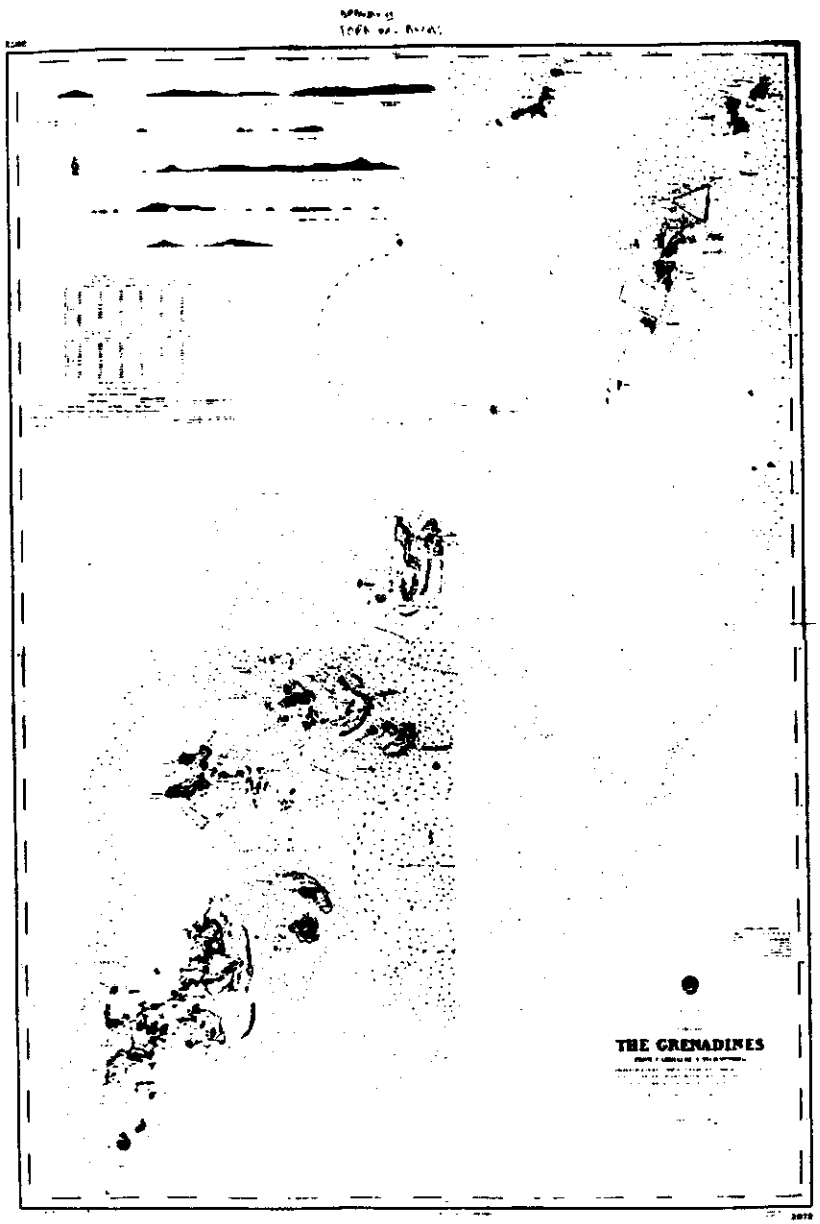
Address: Fisheries Division, Ministry of
Industrial Development & Fisheries
Belmont, St. George's Grenada.

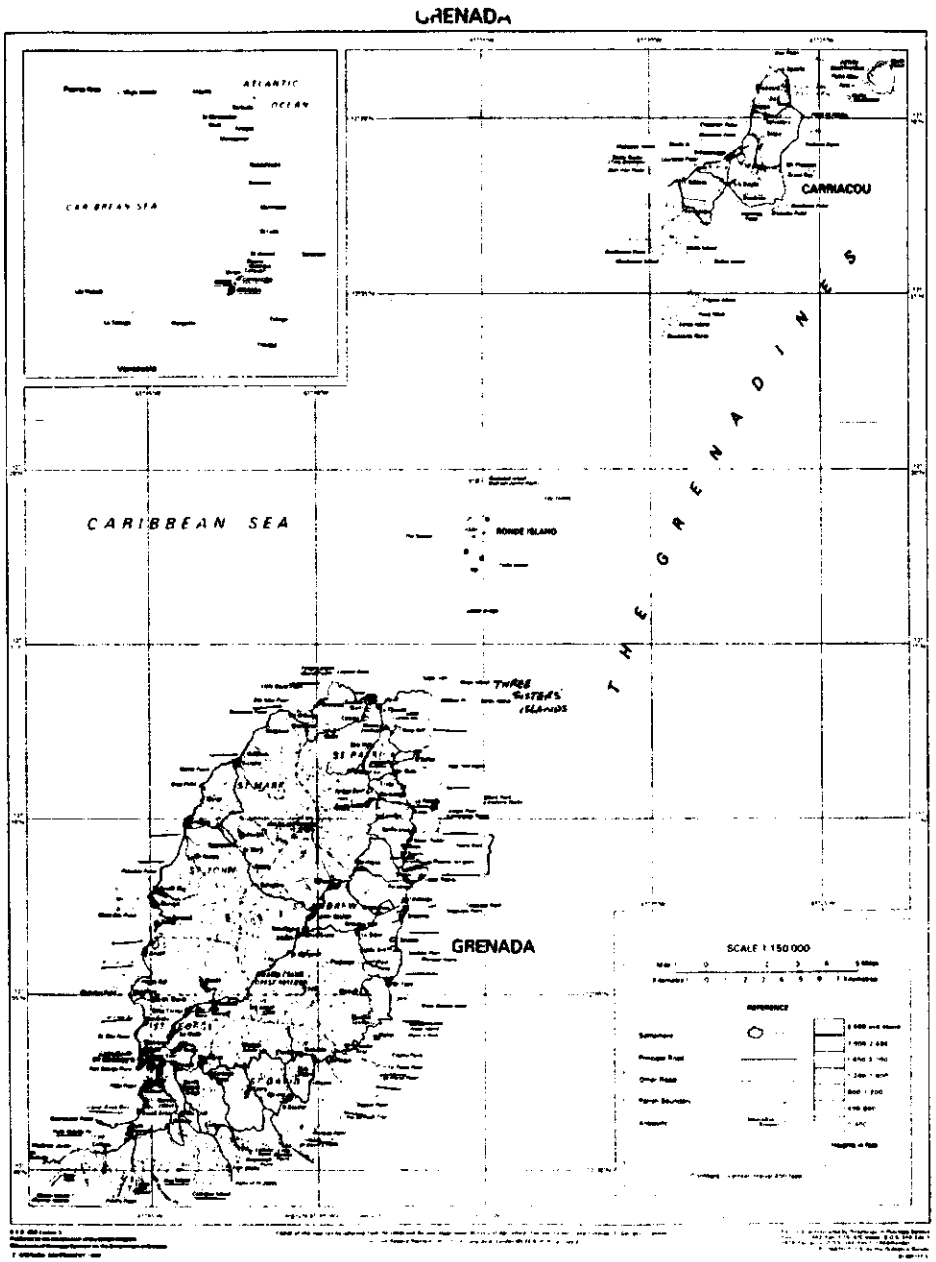
NATIONAL REPORT PREPARED BY

James Finlay (Assisted by Paul Williams)
Fisheries Division, Ministry of Industrial
Development and Fisheries

DATE SUBMITTED: 15th. February 1983

1 Please submit this NATIONAL REPORT no later than 1 December 1982 to: IOC Assistant Secretary for IOCARIBE, % UNDP, Apartado 4540, San Jose, Costa Rica.


THE GRENADINES


GRENADA
ATLANTIC OCEAN
CARIBBEAN SEA
CARRIACOU
THE GRENADINES
CARIBBEAN SEA
BONNE ISLAND
THREE SISTERS ISLANDS
GRENADA
SCALE 1:150 000

INTRODUCTION:

The Sea Turtle Socio-economic and Nesting Survey, Study of Grenada (including Isle De Ronde & Isle De Caille) began about March 1982 and continued until December 1982. It was an extensive rather than intensive study. The purpose of this study was to collect information and prepare a national report on Grenada for the Western Atlantic Turtle Symposium (W.A.T.S.) to be held in July 1983 in San Jose, Costa Rica. (For Grenada even after the report is submitted data collection will continue). The following objectives guided the study and indicate the scope of investigation undertaken.

(a) Record the type of shoreline about the island of Grenada. The purpose being to indicate the actual and potential sea turtle nesting beaches. This data will be valuable baseline work for subsequent studies, and also to document the kinds and amounts of shoreline throughout the Islands.

(b) Record the areas in which turtle sightings are frequently made by fishermen and other persons visiting the beaches; record data on concentrated and dispersed nesting locations.

(c) Compile data of any kind that may indicate the status of sea turtle populations in Grenada.

(d) Review the present conservation and management programs related to sea turtles.

(e) Determine the socio-economic importance of sea turtles.

(f) Make recommendations to help promote the survival status of sea turtle populations inhabiting the territorial waters of the Grenada group.

BACKGROUND:

General Geographical Description of Grenada Group:

Grenada is an independent, English speaking East Caribbean State consisting of Grenada, Carriacou and Petit Martinique, Isle De Ronde and a number of small islet. It is the southernmost island of the East Caribbean Chain, lying between 12° and 12° North and 61° and 62° West (See map references).

The island group have a population of approximately 110,000 (1970 census) The citizens have very strong contacts with the sea and shoreline . The islands are volcanic in origion with evidences of sandstone and shales in many areas. For the main island, Grenada, there is

substantial run-off, which together with other factors, has generated much shoreline sand. Grenada is very much less than an oceanic island, than Barbados only about 100 miles away. The vegetation is tropical continental with certain varieties which reveal the dry season/rainy season character of the climate.

COASTLINE AND OFFSHORE AREAS:

The coastline of the Grenada group is a pattern of sandy bays and rocky points. There is much more sandy shore than rock and cliff shoreline. Grenada is notably affected by the North East Trade Winds and hence the North and Eastern shoreline experience high energy swells almost constantly. Hence the beaches to the Leeward sides of the islands have a moderately sloping beach profile and well vegetated 10 or 30 meters above the high tide mark.

The Windward beaches have gentler profile in high tide swash. However, in areas as characterized by Conference Bay, sand dunes spread along the profile of the beach up to 20 meters from the tide mark. The shorter beaches occur in areas along the windward coast where the rocky points are frequent. Here the beaches are less rough.

On Grenada the colour of sand on beaches varies. [illegible]

Generally the leeside beaches have blacksand probably due to the substantial run off from rivers. The white sand occurs in the beaches from Grand Mal to Point Saline. The Windward beaches are generally white with the occasional admixture of white and black sand. Mangrove swamps occur in areas to the South East but sand and beaches can be found at these locations.

Isle De Ronde and island of about 1.5 square miles has white sand to the south and black sand to the west. Isle De Caille another 0.5 square miles island only .5 km away has black sand pervading the beaches.

The offshore areas of Grenada etc. consist of a submarine shelf of approximately 400 sq. miles of bottom varying from 0-20 fathoms. Most of this area consists of active and dead coralline surfaces. Large expansion of sea grass beds and soft coral occur at various locations. References are given of known vegetation types, on map.

Since the 1940's various persons concerned that Sea Turtle may be overfished in Grenada. This concern was generated from the observation made that the nests of the turtles were being over-exploited. A programme was launched in the late 1950's to generate more recruitment. The principal and most visible threat to the turtle is that of trammel nets which are set on the reefs especially at times of nesting. The fishermen who engage in turtle fishing do not engage in turtle fishing exclusively. Another method of fishing is by spear-fishing.

Divers will shoot turtles while spear-fishing. Persons show strong preferences for various types of turtle. The hawks bill and green turtles are the choice for meat but the loggerhead and leatherbacks are often rejected because of the "fishy" fat. The hawks bill and green turtles are also prized for their backs, however, there is a marked preference for the hawksbills back.

By a survey conducted through the 1961 period, it is estimated that about 1000 turtles are caught annually. Those turtles more than 50 pounds, the number is probably 300 with the remainder being juveniles.

There are so many beaches that are becoming less and less secluded hence fishing pressure on eggs have been serious. The fishing pressure by divers is not serious but the threat by trammel (turtle) nets is a serious one. Despite this, through personal observations and interviews of divers and net owners juveniles are spotted at a rate of at least 4 - 6 or 7 a day on reefs.

STATUS OF KNOWLEDGE OF SEA TURTLES:

No known objective and scientific observations have been made of Sea Turtle populations in Grenada. At Carriacou some work has apparently been done in the past.

The concerns of fisheries up to lately had been the responsibility of the Agriculture Ministry. Little serious action had been

taken by way of conserving these species. Fisheries in Grenada is multispecies in nature and principally artisanal. Legislation was past in 1957 in an effort to protect turtles. However, since turtles can be landed on any beach on the island, it has been difficult to monitor or control the exploitation of these species. Hence, knowledge of the present state of sea turtles populations is drawn from observations made by local trammel fishermen, divers and boys who hunt the turtles and their eggs.

The divers and fishermen reveal that although there are principal meetings at secluded beaches and on the offshore uninhabited islands, there were no concentrated meeting sites. The turtles observed making crawls and actual meetings were those of the green and hawksbill turtles. Records were drawn from interviews with the three categories of turtles predators. Divers were the most helpful. A local diver in the southern part of Grenada observes green and hawksbill turtles frequently. He reports that out of meeting season juveniles of these species are observed feeding all along the grass beds which are prevalent in this area. There are many small secluded beaches in the area, he reports that whenever the turtles are found basking above the grass beds in the day time then be sure they will come in at night.

Leather-back turtles are the most infrequent and are more often

seen out at sea by fishermen. The turtles fishermen report that these are most frequent in the "rainy season" when the water is less salt. The logger head turtles have never been reported as meeting on beaches. The fishermen either catch them in dive: or in the se t. Even when caught near to shore they have not been found to have eggs. Only once did a fisherman report having seen eggs in a loggerhead female. Notably the fishermen do not catch male loggerheads.

Through repeated interviews and probings the fishermen have indicated that only four types of turtles are observed in Grenada. These are Green Hawksbill loggerhead and leather-back. Reliable and keen divers have reported that turtles having the appearance of "flatback" are often caught on the offshore islands to the north of the Grenada island. The fishermen have said that they always call them a cousion to the green turtles.

To the north of the Grenada island where there are a number of offshore islands, there are significant populations of turtles. Divers interviewed have indicated that Hawksbill and Green Turtles concentrate in different areas depending on the bottom types. He reports that the Hawksbills feed on sponges and soft coral and occur principally along the London Bridge channel area. The Green-Turtles which eat sea-grass frequent the grass beds

between the three sisters islands and further north of Isle De Ronde. The Leatherback though not very frequent around the island make a favourite meeting site on the Levera Beach in rainy season June - July. Only the females of leatherbacks are observed.

In the southern offshore area of Grenada, Green and Hawksbills are prevalent. Green turtles are especially prevalent around Hog Island where there are extensive areas of sea grass beds. The fishermen reported that Green Turtles lay when larger than 80lbs and Hawksbill lay when larger 50/60 lbs. However, one reported that he had observed eggs in a 30/lb hawksbill turtle. They also reported that hawksbill are quite predictable since they lay in 15 days cycles several times a season and according to the moon, when fresh tracks are observed the fishermen know when to return for the subsequent crawl. They report also that hawksbills lay furthest up the beach even under bushes in the highest sand.

Fishermen report that April, May is the principal mating time, when the turtles are seen chasing each other and even disregarding divers. On the southern portion of Grenada, a diver reports that October, November and December are the prevalent feeding times for the the Hawksbill Turtles.

Another seine-net fisherman diver reports that the juveniles are prevalent feeding on the "must" seaweed (moss) in the early parts of the year when the mosses are blooming.

N.B. On the Leeward side of the Grenada island where seine net fishing is practised turtle nestings are rare and although occasionally nets draw in small juveniles the turtles are not frequent in this area.

METHODS

With limited time and resources available for such a survey in Grenada, the nature of the research was very narrow. The study involved:-

a. Visits to most beaches which were actual and potential nesting sites of turtles;

b. Researching Government records of turtle management and most importantly interviews and discussion with turtles fishermen, local men and divers;

c. Observations of catches of turtles brought at the landing sites;

The ordinance survey mapwas used extensively for back up studies on the locations for beaches in perspective. These maps were used also for translating data, collected in the field, to the smaller scale maps.

NAME OF BAY OF ISLAND	APPROXIMATE LENGTH OF COASTLINE (km)	APPROXIMATE LENGTH OF SUITABLE BEACH (METRES)
BLACK BAY	0.7	300
MARIGOT	0.7	0
GRAND ROY	0.7	300
[illegible]	1.0	700
[illegible]	2.0	1,000
OCTAVE	1.0	200
MILET	1.3	300
MARAN	1.1	100
PT. [illegible]	1.2	0
ST. MARKS	3.2	400
CRAYFISH BAY	1.5	[illegible]
DUQUESNE	1.7	[illegible]
DAVID	[illegible]	[illegible]
SAUTEURS	2.0	2,[illegible]
[illegible]	2.5	[illegible]
L[illegible] BAY	1.8	[illegible]
GRENADE (Bathway)	3.8	1,50[illegible]
ANTOINE	2.5	2,250
CONFERENCE/GREAT RIVER	6.9	6,150
GRENVILLE BAY	4.5	1,500
ST. ANDREWS	3.3	250
GREAT BACOLET	3.5	1,250
[illegible]	2.1	250
CROCHU HARBOUR	1.6	250
LA TANTE	1.2	100
[illegible]	1.3	500
REQUIN	1.9	700
LA PETIT TROU	4.4	300
LA SAGESSE	1.9	800
ST. DAVIDS	1.5	0
LITTLE BACOLET	1.1	500
PETIT BACAYE	1.4	200
WESTERHALL	3.5	100
CALIVIGNY HARBOUR	2.8	0
CALIVIGNY ISLAND	3.0	400
WOBURN BAY	6.0	0
HOG ISLAND	3.7	500
PT. [illegible]	3.5	0

RECOMMENDATIONS:

The findings of the survey were limited but yielded much valuable information on the status of the sea turtles about Grenada. The following recommendations should be considered:-

1. Expend much effort in enforcing the regulations for the protection of turtles especially in the close season.

2. Mount a campaign against the use of turtle nets on reefs during close season.

3. Establish the presently excluded beaches of the out islands as sanctuaries for nesting turtles.

NAME OF BAY OF ISLAND	APPROXIMATE LENGTH OF COASTLINE (km)	APPROXIMATE LENGTH OF SUITABLE BEACH (METRES)
LANCE AUX EPINES / PRICKLY BAY	4.5	800
TRUE BLUE BAYS	2.4	600
MAGADI	1.1	200
[illegible] BAY	1.0	0
GRAND BAY	1.2	600
CATO BAY	0.4	400
BLACK BAY	0.4	250
PT. SALINE TO [illegible] PTS	4.0	600
MORNE ROUGE	1.5	600
GRAND ANSE	3.9	2300
MARTINS	0.6	0
ST. GEORGE'S	1.9	100
GRAND MAL	2.6	1000
DRAGON	1.3	400
BEAUSEJOUR	3.2	500
HALIFAX	2.5	50
THREE SISTERS ISLANDS	6.0	2000
ISLE DE RONDE	5.5	700
ISLE DE CAILLE	2.0	300
LAGOON (CITY) HARBOUR	2.0	300

Total

FIG.

TABLE 1

Summary of total coastline of islands and cays location in Grenada Group (not including Carriacou, Petit Martinique, and Sandy Island) and estimation of total length of beaches suitable for sea turtle nesting. Estimates made from actual visits to majority of beaches and by using ordinance survey maps.

For estimating lengths of bays an allotment of half distance between two adjoining bays is used as limitation. For estimating small inlet whole coast is estimated.

Country GRENADA 14.

Length of Coastline* ..... Km

Km² of Continental Shelf Area ..... 2440 Km²

Seaward Extent of Jurisdiction:

Territorial Sea ..... 12 miles

Extended Economic Zone ..... 200 miles

Fisheries Jurisdiction ..... 200 miles

Other (Describe) _____ ..... Km

TABLE 2. GEOGRAPHIC INVENTORY

* Coastline length is the measurement of the national seaward boundary of a country; i.e., the distance from border to border for a coastal country and the distance around an island country.

TABLE OF CONTENTS

HABITAT BOTTOM TYPES	Km² OF HABITAT	
	INSIDE 25m (SHOREWARD)	OUTSIDE 25m (SEAWARD)
1. Sand	?	?
2. Mud	?	?
3. Rocks	?	?
4. Submerged Vegetation	?	?
5. Reefs (Total)	250 km²	?
A. Fringing Reefs	20 km²	?
B. Patch Reefs	60 km²	?
6. Other		

TABLE 2A. MARINE HABITAT INVENTORY OF BOTTOM TYPES

MARINE SHORELINE CHARACTERISTICS*	Km OF SHORELINE		
	UNDEVELOPED	DEVELOPED**	TOTAL
1. Sand Beach (Total)	29.5	5.1	36.6
A. High Energy	14.9	1.0	15.9
B. Low Energy	14.6	4.1	18.7
2. Reef (exposed)	4.0	0.0	4.0
3. Rocks	70.3	10.0	80.3
4. Cliffs	24.5	3.5	28.0
5. Vegetation (Total)	108.0	15.5	123.5
A. Vines	?	?	?
B. Grasses	?	?	?
C. Mangroves	7.0	0.0	7.0
D. Coconut Trees	130.0	[illegible]	[illegible]
E. Other Trees or Shrubs	100.0	15.5	115.5
F. Marshes	1.0	0.0	1.0
6. Mouths of lagoons, rivers, canals	15.0	1.5	16.5
7. Total Shoreline	143.3	22.1	165.4

TABLE 2. COASTAL HABITAT INVENTORY OF MARINE SHORELINE

* Refer to SEA TURTLE MANUAL (Aerial Survey)
** Human development or Use (See MANUAL)

NAME OF BEACH	LENGTH IN KM	SPECIES NESTING (Use abbreviations)*	MONTHS OF RECORDED NESTING
1. Palmiste Bay	2.0	Cm Cc D	May, Jun, July Aug.
2. St. Mark Bay	1.0	Cm	Jun. July
3. (Isle of Caille) South Bay	0.5	E	April, May, Jun, July, Aug.
4. (Isle de Caille) North Bay	0.5	E Cm	" " " "
5. Bacolet Bay	1.0	E Cm Cc	April, May, Jun, July, Aug.
6. St. Davids Bays	8.0	E Cm Cc D	" " " " "
7. Point Salines Bays (South East)	2.0	E, Cm Cm	" " " " "
8. Point Salines Bays (N...)	1.5	E, Cm Cc	" " " " "
9. Duquesne Bay	0.5	E, Cm	May, Jun, July Aug
10. La Sevis Bay	.	E, Cm, D	" " " "

TABLE 3. NESTING BEACH INVENTORY
List beaches in geographic sequence.
Provide additional information on following page.

Species Abbreviations:
Caretta caretta Cc
Chelonia mydas Cm
Dermochelys coriacea D
Eretmochelys imbricata E
Lepidochelys kempi Lk
Lepidochelys olivacea Lo

NAME OF BEACH	LENGTH IN KM	SPECIES NESTING (Use abbreviations)*	MONTHS OF RECORDED NESTING
1. David Bay	1.0	Cm, E, D	April — Sept
2. Irving Bay	1.5	E, D	April — Aug
3. Rathan Bay	0.5	Cm, E D	April — Aug.
4. Levera Beach	1.5	Cm, E, D	April — Sept.
5. Great River Conference Beach	5.2	Cm, E, D, Cc	April — Sept
6. Sandy Island	2.0	Cm, E	April — Aug.
7. (Isle de Ronde) North Bay	1.0	Cm E	April — Aug.
8. (Isle de Ronde) Half Moon Bay	1.0	Cm E	April — Aug
9. (Bathway) Grenada Bay	2.0	Cm E D	April — Sept.
10. Antoine Bay	1.5	Cm E D	April — Sept

TABLE 3. NESTING BEACH INVENTORY
List beaches in geographic sequence.
Provide additional information on following page.

Species Abbreviations:
Caretta caretta
Chelonia mydas Cm
Dermochelys coriacea D
Eretmochelys imbricata E
Lepidochelys kempi Lk
Lepidochelys olivacea Lo

NAME OF AREA (or give coordinates)	APPROX. AREA (Km²)	SPECIES FORAGING (Use abbreviations & approx. numbers)	NATURE OF EVIDENCE (Observation, fishery, incidental catch)
1. Bays: Point Saline To Quarantine Point	15	E Cm (all sizes)	divers observations interviews.
2. Glover Island 11°59' N 60°46' W	20	E Cm (all sizes) Juv and Sub A	divers observations interviews
3. Grand Mal Bay	5	E, Cm, D (occasionally) all sizes, Sub A	divers, seine fishermen interviews
4. Woburn/Hog Island	15	E Cm Cc	divers netsetters interviews.
5. Latante Bay Galby Bay Crochu Bay	15	E, Cm, Sub A Cc D (occasionally)	divers, netsetters interviews.
6. Great Bacolet Bay	10	E, Cm Sub A Cc D (occasionally)	divers, netsetters interviews.

TABLE 7. FORAGING AREAS INVENTORY

Species Abbreviations:
Caretta caretta Cc
Chelonia mydas Cm
Dermochelys coriacea D
Eretmochelys imbricata E
Lepidochelys kempi Lk
Lepidochelys olivacea Lo

NAME OF AREA (or give coordinates)	APPROX. AREA (Km²)	SPECIES FORAGING (Use abbreviations & approx. numbers)	NATURE OF EVIDENCE (Observation, fishery, incidental catch)
1. Isle de Ronde, Isle de Caille	25	E Cm; all sizes	divers, netsetters interviews.
2. Three Sisters, Levera	15	all sizes, except for E, Cm; Cc	divers, netsetters fisherman interviews.
3. David Bay	10	all sizes E, Cm	divers, seine net fisherman (interviews).
4.			
5.			
6.			

TABLE 7. FORAGING AREAS INVENTORY

Species Abbreviations:
Caretta caretta Cc
Chelonia mydas Cm
Dermochelys coriacea Dc
Eretmochelys imbricata E
Lepidochelys kempi Lk
Lepidochelys olivacea Lo

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: North Grenada, 3 Sisters Islands ISLAND: Grenada

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: White carbonate and silicate sands

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR ....

INCIDENTAL..........

GENERAL COMMENTS: Most regular nesting sites for all four species of turtles which are observed about the island.

NAME OF BEACH: Isle de Ronde ISLAND: Out island of Grenada

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: White carbonate/silicate sand on north east and black volcanic on north west

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR ....

INCIDENTAL..........

GENERAL COMMENTS: A very regular nesting area for turtles of all size because this area has foraging areas that are significant.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: Fort Jeudy and Westerhall Bays ISLAND: Grenada

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: White carbonate sand with moderate proportion of silicon.

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR ....

INCIDENTAL..........

GENERAL COMMENTS: Very much frequented by Green and Hawksbill turtle.

NAME OF BEACH: Degra, Grand, Cato, Black Bays ISLAND..........

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: Well sorted carbonate orange and white sand. High proportion of silicon.

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR ....

INCIDENTAL..........

GENERAL COMMENTS: Exposed bays but much frequented turtles; hawksbill, green, loggerheads.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: Hog Island, Calivigny Island ISLAND: Grenada

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: White carbonate sand well sorted occasionally

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR ....

INCIDENTAL..........

GENERAL COMMENTS: A very regular turtle nesting site even in mangrove mud/sand areas turtles are known to nest.

NAME OF BEACH: Prickley Bay, True Blue Bay ISLAND: Grenada

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: Variety of carbonate sand. Fine to coarse grained

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR .... REGULAR ✓

INCIDENTAL..........

GENERAL COMMENTS: Sites frequented by Hawksbill and green turtles.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: LA SAGESSE TO PETIT BACAYE BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: CARBONATE SAND WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..✓.. REGULAR .....

INCIDENTAL.....

GENERAL COMMENTS: GOOD FORAGING OFFSHORE MUCH VEGETATION ON SHORELINE

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: LA SAGESSE, LITTLE BACAYE / PETIT BACAYE ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: WHITE CARBONATE SAND COARSE TO FINE WELL GRADED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..✓.. REGULAR .....

INCIDENTAL.....

GENERAL COMMENTS: Low energy beaches hemmed in by Rocky points, very much frequented by hawksbill and green turtles.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: GREAT BACOLET ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: ADMIXTURE OF VOLCANIC / CARBONATE SAND

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..✓.. REGULAR .....

INCIDENTAL.....

GENERAL COMMENTS: A SECLUDED BEACH MUCH VEGETATION MUCH FORAGING AREA OFFSHORE, STREAM RUNS INTO BAY.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: CROCHU TO PETIT ANSE BAYE ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: GALBY (BLACK SAND) OTHER BEACHES CARBONATE WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..✓.. REGULAR .....

INCIDENTAL.....

GENERAL COMMENTS: SMALL BAYS WITH STREAMS RUNNING INTO THEM. SIGNIFICANT FORAGING OFFSHORE FOR GREEN and HAWKSBILLS, LOGGERHEADS ARE OCCASIONAL.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: ANTOINE BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW * *

DESCRIPTION OF SAND CHARACTERISTICS: VOLCANIC WELL SORTED SAND.

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ..✓..

INCIDENTAL.....

GENERAL COMMENTS: Green and Hawksbill nesting area. much vegetation onshore; coconut trees mangroves

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: ST. MARKS BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: Volcanic black sand well sorted

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL..✓..

GENERAL COMMENTS: Hawksbill and green turtles occasionally nest on the beach however human impact is significant.

NAME OF BEACH: CONFERENCE / GREAT RIVER ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: SAND DUNES, GENTLY SLOPING CLASSIC HIGH ENERGY BEACH: CARBONATE SAND

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..✓.. REGULAR .....

INCIDENTAL.....

GENERAL COMMENTS: SIGNIFICANT RUNOFFS INTO BAY BY RIVERS 1 SIGNIFICANT NESTING SITE, OFFSHORE FORAGING COMMON

NAME OF BEACH: DUQUESNE BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW *

DESCRIPTION OF SAND CHARACTERISTICS: VOLCANIC WITH CARBONATE SAND, WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY *

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL..✓..

GENERAL COMMENTS: Hawksbill and green turtle nesting beach profile: steeply sloping frequently occasionally gently sloping w/ high swells

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: DAVID BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: Black volcanic sandy beach with vines and coconut trees, Stream runs into bay

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: HAWKSBILLS AND GREEN TURTLES NESTING FORAGING AREAS OUTSIDE REACH

NAME OF BEACH: SAUTEURS BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: PRINCIPALLY CARBONATE SAND HOWEVER AN ADMIXTURE OF VOLCANIC/CARBONATE EXIST

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: HUMAN IMPACT ON PARTS OF THE BEACH SIGNIFICANT HOWEVER OFFSHORE IS A GOOD FORAGE AREA.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: PALMISTE BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: fine volcanic sand with occasionally coarse sections of sand

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: occasionally heavy or high energy swells effect this beach; beach is used as source of sand. gently sloping profile

NAME OF BEACH: GRUYAVE BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE LOW

DESCRIPTION OF SAND CHARACTERISTICS: Volcanic and carbonate admix fine to medium grained well sorted.

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: Human impact on this beach area is very heavy profile of the beach is steep low energy swells often with occasional high energy swells.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: LEVERA BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: COARSE TO FINE CARBONATE SAND. MUCH HIGH ENERGY SWELLS WITH RAPID CURRENT MOVEMENT

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR .....

INCIDENTAL .....

GENERAL COMMENTS: A MAJOR NESTING AREA FOR ALL FOUR (4) TYPES OF TUTLES. FORAGING AREAS OFFSHORE ARE SIGNIFICANT.

NAME OF BEACH: (BATHWAY) GRENADA BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: WELL SORTED CARBONATE SAND. SAND MOVEMENT IS FREQUENT

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: REACH HAS FRINGING REEF CLOSE TO SHORE AT CERTAIN POINTS

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: BEAUSEJOUR ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: BLACK, VOLCANIC SAND WELL SORTED AND OFTEN FINE

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: BEACH ON QUICKLY GROWING BAY. SEA ENCROACHING ON THE LAND, SOURCE OF SAND FOR COMMERCIAL PURPOSES.

NAME OF BEACH: BLACK BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle): HIGH, MODERATE LOW

DESCRIPTION OF SAND CHARACTERISTICS: BLACK, VOLCANIC WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: Low energy/moderate energy beach. Moderate profile with much vegetation. Hawksbill and green turtle nesting site.

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: DRAPEAU BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: BEACH PROFILE MODERATELY STEEP COARSE TO FINE WELL SORTED SAND, BLACK WITH WHITE

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: IMPACT OF HUMAN ACTIVITY, SEINE NETS ETC HAVE LIMITED TURTLE NESTING

NAME OF BEACH: GRAND ROY BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: BLACK VOLCANIC SAND WELL SORTED, MOSTLY FINE, PROFILE MODERATELY SLOPING

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: Moderate energy beach with gently sloping profile only occasional nesting reported

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: GRAND MAL BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: CARBONATE WHITE SAND WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: Beach broken occasionally by rocks. Low energy, seine nets frequently fish in this location. Hawksbill and green turtles nest on this beach. occasionally, feeding offshore by turtles is frequent

NAME OF BEACH: DOTHAN BAY ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: VOLCANIC MIXED WITH CARBONATE SAND BEACH GENTLY SLOPING FINE SAND

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR .....

INCIDENTAL ✓

GENERAL COMMENTS: BEACH FREQUENTLY USED BY SEINE-NET FISHERMEN, BEACH BROKEN BY ROCKS OCCASIONALLY

SUPPLEMENTARY DATA ON BEACHES

NAME OF BEACH: Point Salines To Petit Carrita Point ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: CARBONATE MEDIUM GRAIN WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ✓ REGULAR .....

INCIDENTAL .....

GENERAL COMMENTS: A FREQUENT NESTING SITE FOR HAWKSBILL AND GREEN TURTLES

NAME OF BEACH: Morne Rouge Quantine ISLAND: GRENADA

ENERGY CLASSIFICATION OF BEACH (Circle) HIGH, MODERATE, LOW

DESCRIPTION OF SAND CHARACTERISTICS: WHITE CARBONATE WELL SORTED

LEVEL OF HUMAN DEVELOPMENT AND/OR IMPACT: NONE, LIGHT, MODERATE, HEAVY

ESTIMATED NESTING ACTIVITY: MAJOR ..... REGULAR ✓

INCIDENTAL .....

GENERAL COMMENTS: SHALLOW APPROACH TO THE BEACH. Hawksbill and green turtle nesting

SPECIES \ YEAR	1982	1981	1980	1979	1978	1977
Caretta caretta	100 ± 25	Figures	not	significantly	different	
Chelonia mydas	200 ± 50					
Dermochelys coriacea	25 ± 10					
Eretmochelys imbricata	> 500					
Lepidochelys kempi						
Lepidochelys olivacea						

TABLE 6. ESTIMATED POPULATIONS OF NESTING FEMALES.
Summarize the estimated number of nesting females for the years indicated and describe methods of estimation on the next page.

SPECIES \ MONTH	J	F	M	A	M	J	J	A	S	O	N	D	MONTHS OF GREATEST ACTIVITY
Caretta caretta						X	X	X	X	X	X	X	Aug (ad)
Chelonia mydas	X	X	X	X	X	X	X	X	X	X	X	X	(all ~July) April — June (adults only)
Dermochelys coriacea						X	X						June / July
Eretmochelys imbricata	X	X	X	X	X	X	X	X	X	X	X	X	Juv, all year May — Aug (ad)
Lepidochelys kempi													
Lepidochelys olivacea													

TABLE 8 - ___ TURTLE SPECIES PRESENT ON FORAGING AREAS.
Please complete one of these tables for each of the areas identified in Table 7. Number each table as enumerated in Table 7 (7-1, 7-2, etc.).

NAME OF PORT OR SITE	SPECIES LANDED (Use abbrev)	FISHING GEAR USED	MONTHS OF LANDINGS	NUMBERS & WEIGHTS (Estimate)
1. SAUTEURS	E, Cm	Nets and spears	all year	Estimate
2. GRENVILLE	E, Cm	" " "	" "	
3. CALLISTE	E, Cm, Cc	" " "	" "	
4. BACOLET	E, Cm, Cc	" " "	" "	
5. WOBURN	E Cm	" " "	" "	
6. CALIVIGNY	E Cm	NETS AND SPEARS	" "	
7.			"	
8.				

TABLE 11. LANDING SITES FOR TURTLES & TURTLE PRODUCTS

Species Abbreviations:

Caretta caretta	Cc
Chelonia mydas	Cm
Dermochelys coriacea	Dc
Eretmochelys imbricata	Ei
Lepidochelys kempi	Lk
Lepidochelys olivacea	Lo

SPECIES \ YEAR	Kg 1982	Kg 1981	Kg 1980	METHOD OF DETERMINATION
Caretta caretta	30-50	30-50	30-50	MARKET figures, obs., interviews.
	1500	1500	1500	
Chelonia mydas	100-150	100-150	100-150	" " " "
	2500	2500	2500	
Dermochelys coriacea	5-10	5-10	5-10	" " " "
	1000	1000	1000	
Eretmochelys imbricata	100-200	100-200	100-200	" " " "
	5000	5000	5000	
Lepidochelys kempi				
Lepidochelys olivacea				

TABLE 12. TOTAL ANNUAL TURTLE LANDINGS IN NUMBERS AND WEIGHTS (N/Kg)
Do not include turtles caught incidental to other fishing operations (e.g., shrimp trawling).

ACTIVITY	TOTAL ANNUAL NUMBERS OF PERSONS	EST. ANNUAL INCOME FROM TURTLES	COMMENTS
Fishing	50 ± 10	$3,000 – $5000	income based on $0.90 lb (live wt) obtained for turtles at local market.
Processing	—	—	fishermen process their catch
Selling	—	—	fishermen sell their catch on most occasions.

TABLE 16. EMPLOYMENT DEPENDENT ON TURTLES

MARKET PRICES FOR TURTLE PRODUCTS IN GRENADA ARE AS FOLLOWS: LIVE WEIGHT ($0.90, lb^{-1})

GRENADA

348 *Birds and other Wild Life (Protection of).* [Cap. 36

Provided that the Governor may from time to time by notice in the *Gazette* appoint some other period or periods in lieu of the periods fixed as aforesaid, and after any such appointment the periods so appointed shall be the close season for the purposes of this Ordinance.

Governor may alter the declared schedules

5. The Governor may from time to time by notice in the *Gazette* declare that, as to any of the wild birds enumerated in the Second Schedule the provisions of section 4 shall cease to apply, and may from time to time vary or cancel any such alterations; and thereupon the provisions of the said section shall cease to apply, or shall again apply (as the case may be), with such variation as by the declaration may be provided, and the Governor may also, by notice as aforesaid, declare as to any bird not enumerated in the said schedule that it shall from the date of the notice be deemed to be included in the said Schedule for such close season as may be named in the notice as applicable to it, and may from time to time alter or amend the notice in the same way as if the bird had been enumerated in the Schedule; and thereupon the bird shall to all intents and purposes be deemed to be included in the Schedule for the close season assigned to it in the said notice.

Killing &c. of birds, &c., during the close season

6. Except as hereinafter mentioned, any person who shall—

(a) kill, wound or take, or attempt to kill, wound or take, any of the wild birds enumerated in the Second Schedule to this Ordinance or any turtle or oysters, during the close season for the same; or

(b) take the eggs or nest of any such bird during the close season for the same, or have in his possession any such bird killed or wounded or taken or any eggs or nest taken during the said season; or

(c) have in his possession any turtle, the eggs of any turtle or any oysters, during the close season for the same,

shall be guilty of an offence against this Ordinance.

TABLE [illegible] PENDENT ON TURTLES

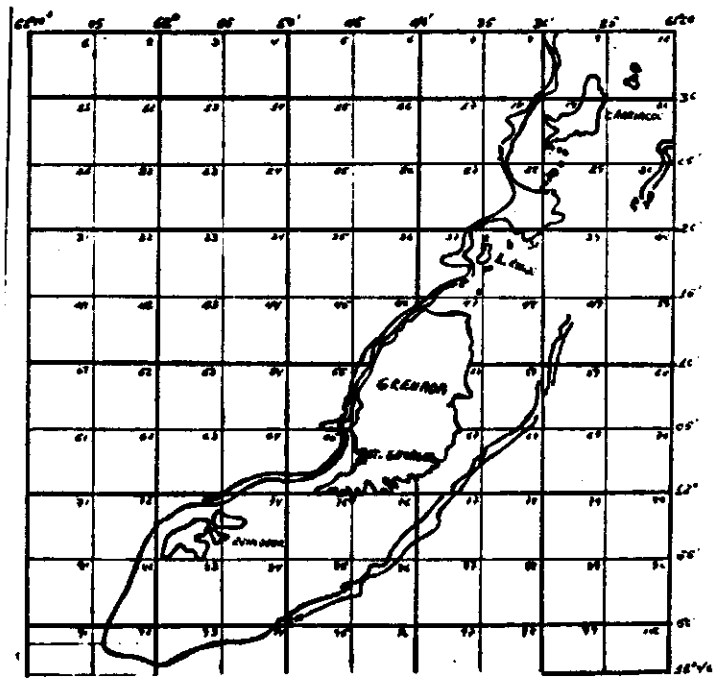
[illegible] tion to [illegible] products, it is estimated that the [illegible]ing are taken annually from beaches or at sea for [illegible] use:

[illegible]

1. Estimated number of eggs: 6,000 – 10 000
2. Estimated number of nesting [illegible]: 100
3. Number of turtles caught at sea: 50 – 75
4. Other: [illegible]

B: Social aspects

In addition to the described fishery activities, exploitation of turtles may be permitted in some countries according to special rights or privileges extended to certain groups of people. If such specials turtle exploitation exists, please give details (i.e., beach rights, ethnic traditions, specific seasons of the year, special permits, etc.).



THE GRENADA SHELF – 100 FATHOM BATH