

# The Cayman Turtle Farm

By Tom A. Walker

"I miss the seasons sometimes", muses Jim Wood, "But when I go home to North Texas, after it snows for about ten minutes, I've had enough." Many of us would consider a Caribbean island to be an ideal work place. There's no income tax in the Cayman Islands, and for days off, world renowned diving and saltwater fishing opportunities abound.

But aquaculture in paradise has not been without its problems. Although they were butchering 12,000 to 15,000 animals a year during the mid 1970's, the Cayman Turtle Farm was not able to turn a profit. Then, in the 1979, regulations barring trade in turtle products denied the farm access to their major market (the U.S.) and trans-shipment point (Miami). Sales were reduced by over 80%. Two years ago the farm suffered \$450,000 U.S. in damage and lost 5,000 animals from a major tropical storm. Freight costs to the island average \$100 to \$150 U.S. a ton.

These are some of the challenges that Dr. Jim Wood has successfully faced in his role as managing director of the Cayman Turtle Farm. Dr. Wood is justifiably proud of his accomplishments over the last ten years. While at times he feels more like an amusement park director than a research

biologist, there can be no mistaking the scientific contributions of his operation. The on-going research of the farm includes developing extensive green turtle husbandry techniques, a major hatch, rear, and release program, and more recently, detailed work on the critically endangered Kemp's ridley species.

The story of the Cayman Turtle Farm is not just about business, mariculture, or research success. It is also the story of an on-going battle to have a farm-raised product exempted from an international ban on endangered species, and as such asks a common question on the relationship of farm raised product to wild stocks and conservation.

The history of the farm began in 1968, when a group of English investors who were attracted by an historical market for green turtle products, and a dwindling wild fishery, chose the warm waters and stable political climate of the Cayman Islands to develop the first commercial turtle farm. It is fitting that they chose the Caymans, as the turtle has played a major role in the history of the island.

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*Jim Wood, PhD, Managing Director of the Cayman Turtle Farm, holding a young turtle from the farm's visitor display area.*

ing point for Caribbean and Pacific shipping, in the 17th and 18th centuries. An excellent protein source, turtle meat could be dried, or the animals could be kept fresh aboard boats, with frequent dousings of sea water. An active fishery grew up, and when local stocks were depleted, Caymanian fishermen travelled throughout the Caribbean in search of product. The "Sir Turtle" emblem of the island reflects the historical im-

portance of turtles to the local economy.

The first site for Mariculture Ltd. was a narrow estuary in the reef protected North Sound of Grand Cayman Island. Young turtles were originally released into an enclosed tidal creek to feed on the natural beds of turtle grass. Subse-

quently, a floating tank system was constructed in the creek for better protection and management. In addition a 3/4 mile pipe was laid across the island to overcome inadequate tidal flushing. The turtles were fed a diet of wild-harvested turtle grass, dog food, catfish food, and frozen fish. In 1971, the farm was moved to its present land base, to allow for better water quality, increased production, and improved management.

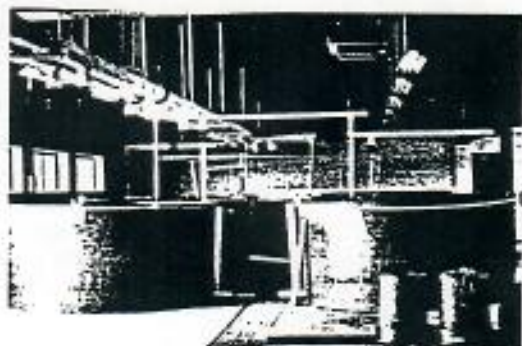
Situated on 16 acres of waterfront, the farm consists of an excavated breeding pond, and a series of 4x6, 4x8, 8ft., 30ft., and 50ft. diameter tanks. The million gallon breeding pond has a sand bottom and slopes from a depth of 9ft. up to a man made nesting beach. Sea water is conducted directly in and out of the breeding pond by a flume channel, with water turning over once every 4 hours. The fiberglass and concrete grow-out tanks receive sea water from approximately 900ft. of 8-14in. PVC pipe. A combination of centrifugal and axial flow pumps move up to 4500 gallons per minute.

A main building houses administrative offices, as well as a gift shop. The hatchery and snack bar are also on site, and research labs and more grow-out tanks are across the road.

There are approximately 280 adults in the breeding herd, with a ratio of 3 females to 1 male. They are housed in separate areas of the breeding pond until mating season. Captive reared adult green sea turtles reach maturity between 8 and 12 years of age. They may weigh between 200-600 lbs., with an average weight of 340 lbs., and are fed a fish meal based Purina Turtle Chow containing 35% crude protein, 3.5% crude fat and less than 5.0% crude fiber.

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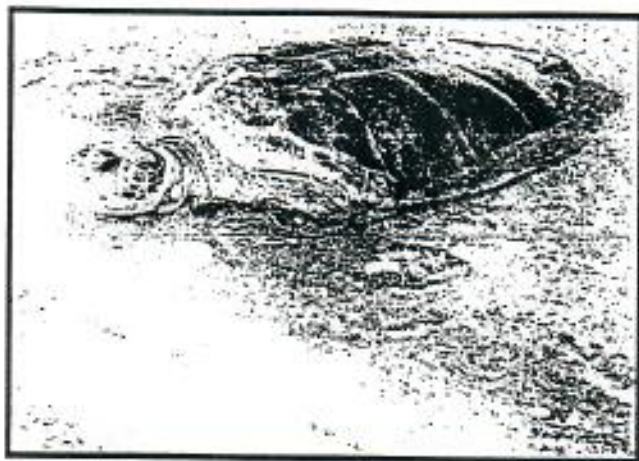
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Stocking density varies from 4 to 6 square yards surface area per turtle.

Breeding season at the Turtle Farm lasts from April to July. Males are transferred into the female sections of the pond for the entire breeding period. The female may accept mating from one or more males, generally during a specific 4 or 5 days. Nesting begins 30 days after mating. Each nesting procedure may take 1-2 hours. The female emerges from the water at night, labors her way onto the beach, and after some false starts, digs a body pit and egg chamber to her satisfaction. Eggs are laid 1-3 at a time, over a 10-20 minute period. Tennis ball-sized, soft-shelled, and mucous-coated, they weigh 2 oz. each.

During one reproductive season, the female will lay 5-7 clutches, nesting at 10 day intervals. Approximately 100 eggs are laid each time. Each female does not necessarily lay every year. Ranging from 1-6 years, the average inter seasonal nesting interval is 1.6 years. The average annual egg production per female in the breeding colony is 400 eggs.

Egg collection and transfer to incubation boxes is completed with relative ease. Though she is easily frightened in the early nesting stages, once the female begins to deposit her eggs, she will not be deterred. Farm observers (employed dusk to dawn during the nesting season), are able to collect eggs as they are laid and before the female buries them and returns to the water. Sea turtle eggs can be handled



Adult Green Turtle approaching the artificial nesting beach in the breeding pond.

without damage for 12 hours after nesting. This allows for the eggs to be transferred to a styrofoam box nest. The incubation box which has holes in the bottom, is lined with a 1 inch layer of sand. Between 60 and 100 eggs are placed in the box, (depending on the size of the clutch) and covered with a rayon cloth and another layer of sand.

The entire incubation period lasts 60 days. First, the eggs are kept at 31°C for 4 weeks in a special "hot room" within the hatchery, to produce equal numbers of male and female

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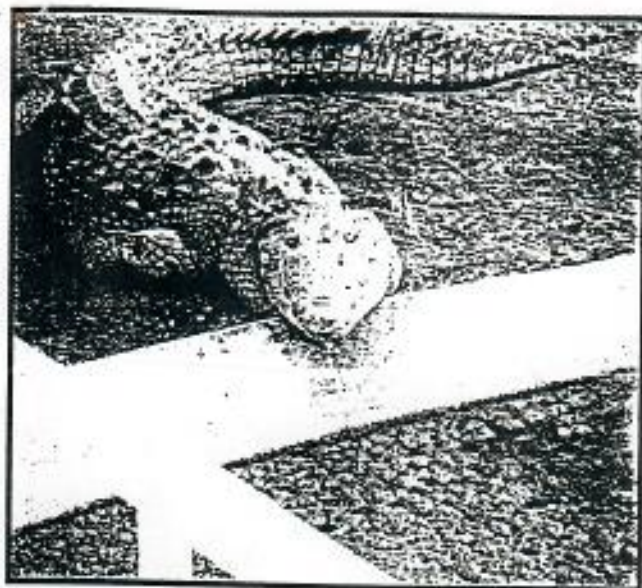
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*An American crocodile. Part of the indigenous animal display at the Turtle Farm. Crocodiles were once native to the island.*

hatchlings. Warmer temperatures produce more females, and cooler temperatures, more males. After the 31°C has set the gender, the eggs are transferred to the main part of the hatchery, and kept at 28 and 1/2°C for the remainder of the incubation time. 27 days later, the top layer of sand and cloth is removed from the incubator box. After 60 days, the

hatchlings begin to emerge and are moved to sand trays for 2 to 3 days before being transferred to water. The sand tray interval duplicates the time required for the hatchlings to dig their way to the surface of their wild beach nests. The belly yolk sack is absorbed at this time, and the hatchlings, weighing less than 2oz., are transferred to 4x6x1 ft. tanks.

The greatest care must be taken during the turtle's first year, when mortality is highest. The 150 gallon tanks contain sea water with 1-2 ppm chlorine for extra algae control in early growth. The tanks are shaded for the first 6 months, and cleaned daily. First year stock is fed a modified Purina Trout Chow 5 times a day, with 40% crude protein, 8.0% crude fat, and less than 5.0% crude fiber. Stocking density ranges from 300 - 30 per tank as the turtles grow, to allow for maximum surface area in the shallow tanks.

Yearling turtles weigh approximately 6lbs., and are transferred through a series of 8ft., 30ft., and 50ft., diameter fiberglass and concrete tanks for grow-out. They are fed the same Purina Turtle Chow mix as are breeding stock. The daily ration varies from 2.0% to 0.4% body weight per day depending on the size of the turtle. Food conversion ranges from 1.2 to 6.5 units of diet feed per unit of weight gain. Feed is poured by hand, along the edges of the tank.

The farm has no predator problems. (I can't help wondering if the resident crocodile has anything to do with it; he only gets a chicken a day.) Mortality is less than 3% per year in 2-4 year olds.

Turtles for market are butchered at 4 years of age, at which time they will weigh between 45-70lbs. While turtles

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have always been valued for their meat and eggs, nearly the entire animal is processed in some form, including the skin, fat, and shell. Jim Wood describes it as "southern coastal food" (it tastes a lot like veal), and prior to 1979 the majority of turtle steak and stew meat from the farm was sold in the U.S. Green turtle soup was processed in Europe. Skins and shells were shipped to Europe and Japan to be made into leather and jewelry, and Mexico and Japan purchased fat to be rendered into oil for cosmetics and folk medicine.

"The entire animal must be sold to be viable," Jim Wood explains. "The Germans who owned the farm in the 70's (the original investors went bankrupt in 1975) were really beginning to develop the shell and jewelry market, but it still wasn't up to steam."

In mid 1970 the farm was processing between 12,000 and 15,000 animals a year, representing 1 million pounds live weight a year. A series of U.S. and world political-conservation moves changed all that, and by 1979 the door to U.S.

was shut, both as a market, and as a trans-shipment point. The farm now aims at processing 4,000 animals a year (though last year it was only 1750), and all meat is consumed on the island. Only 20% of the shells are sold through the gift shop (mostly to vacation property owners on the island, as it is illegal to import any form of turtle products to the U.S.), and the remainder is thrown away. Some fat for oil is exported to Europe.

The Cayman Turtle Farm has had a protracted battle for its markets. In 1975, the United States proposed domestic regulations listing the green turtle as a threatened species, barring its importation. Originally an exemption was to be provided for products of mariculture operations. However, several environmental groups who categorically opposed utilization of any wild life prevailed on the law makers, and in 1978 when the final regulations were published, there was no exemption for farmed products. A request for consideration was denied the farm in 1979. The Cayman Turtle farm

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then filed suit against the U.S. Department of Interior and Commerce, but lost its case in 1979.

In a parallel move, the Convention on International Trade in Endangered Species, (CITES), was formed in 1973. By 1975, enough member countries had signed to create an international treaty.

The Convention provides for 2 categories of animals or plants that it feels need protection. Appendix I lists endangered species which cannot be traded for commercial purposes, and shipments of these from one country to another require both an export and import permit. Appendix II lists threatened species which require only an export permit stating that the export is not detrimental to the wild population. The convention also stated that Appendix I species bred in captivity could be down-listed to Appendix II, and allowed for international trade.

The green turtle was originally an Appendix II listing, and the turtle farm shipped products from 1975 to 1977 with an export permit. In 1977, the green turtle was listed in Appendix I, but products continued to be shipped, certified as farm bred.

However, there have been interpretation problems as to whether the Cayman Turtle Farm products fall under the accepted status allowed under Appendix I. While the Turtle Farm began with eggs and breeding stock collected from the wild, its breeding program is self sufficient, and no wild eggs have been used since March 1978. However, over half of their breeding stock are wild caught turtles. The English version of CITES reads "bred in captivity" while other languages clearly state "raised in captivity". In order to clear

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up the problem, a resolution was passed in 1979 stating not only that animals must be conceived in captivity, but added the clause that the breeding herd must be managed in such a manner shown capable of reliably producing second generation offspring.

"They kept moving the rules on us," accuses Jim Wood. In fact, each subsequent meeting of CITES has re-defined or modified guide-lines to specifically prohibit trade in sea turtles. Further developments in CITES now require that before any new species is listed as acceptable as a farmed species, a paper must be presented at a full plenary conference and receive a 2/3 majority approval of all members of CITES.

Jim Wood is not overly optimistic. "My view is that approval would be a very difficult thing to achieve,.... until we have a whole lot of second generation stock." The farm has had one set of second generation offspring hatch, in 1989. "The sea turtle is a very emotional and political football," comments Dr. Wood. "People have soft spots in their hearts for turtles."

Certainly no such soft spot exists for crocodiles. Although also listed as endangered, crocodile farming proposals have been approved by CITES, and farm raised products are traded.

Dr. Wood presents a number of arguments in favor of farming a threatened species.

- 1) A farm provides a sustained, reliable source of product which does not depend on the wild population.
- 2) Supplying a market from a captive source can allow for

clear documentation and tagging of the products as farmed raised. In fact, the Turtle farm offered to pay the salary of a US Fish and Wildlife staff member to be stationed on the island to monitor the farm's export activities.

3) The gene pool that is preserved within a captive environment can be used to replenish wild stock.

4) The body of technical knowledge that is developed at a farm can be directly applied to wild populations.

The Cayman Turtle Farm's record in providing knowledge on the green turtle is admirable. Current budget for research is set at approximately 5% of revenue. Staff members contribute articles to major research publications. As well as maintaining research staff on site, the farm has worked with the Universities of Florida and Miami. In addition, farm materials are available to the international scientific community. PHD candidates have been hosted and in some cases turtles have been sent to other research locations.

Research focus in the past has been primarily on husbandry techniques, with the next most significant area of study being reproduction. Eggs were originally gathered in the wild, using nests which were below high tide or from beaches which would be eroded by tidal action and were unlikely to survive in the wild. The farm returned some 2,300 yearling turtles to replace the 460,000 eggs collected. Survival estimates for eggs in the wild range from 1 in 1,000 to 1 in 10,000, due to extensive predation problems. (The survival rate improves significantly after the first year.) In addition to self-sufficiency in egg production gained in

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1979, the farm has now successfully reared second generation offspring.

Jim Wood is most proud of the two current areas of research. He has been extensively involved with both since his arrival at the farm as research director in 1975. They are obvious examples of farm research supporting wild populations.

Clearly, a significant contribution to conservation comes from the farm's enhancement programs. The hatch, tag, and release program has included over 22,000 animals to date. The turtles are returned to the waters around Cayman mostly as yearlings (this practice to improve survival chances is known as head starting), and they sport a living tag of autografted white belly shell transferred to the darker colored back. This white dot grows with the animal, and the location of the tag on the animal's back tells its age and location of release. The program is beginning to show success. Turtle sightings are becoming common in waters once teeming with the animal. Titanium tags are also attached to front flippers, and an active tag return program is under underway to monitor the turtles migratory habits and survival.

Also important is the current Kemp's ridley research program. The Kemp's ridley is listed as a critically endangered species in the U.S. The only known nesting sight is along the eastern Mexican coastline at Rancho Nuevo. Although the U.S. and Mexican governments have been monitoring the colony for years, the population continues to drop. In 1980, the farm established a breeding colony of

yearling and hatchling Kemp's ridley animals. They are hoping to obtain additional data on the species and are working towards an enhancement program similar to the green turtle releases.

The Cayman Turtle Farm is working with Mexico's Instituto Nacional de la Pesca on a "Super Head Start" program for the Rancho Nuevo preserve. They currently have 200 yearlings and 100 two year olds that they intend to release at Rancho Nuevo in 4 or 5 years. "I'm personally excited about the Kemp's ridley program," says Dr. Wood. "I'm anxious to see what happens when we get some adult animals and let them go."

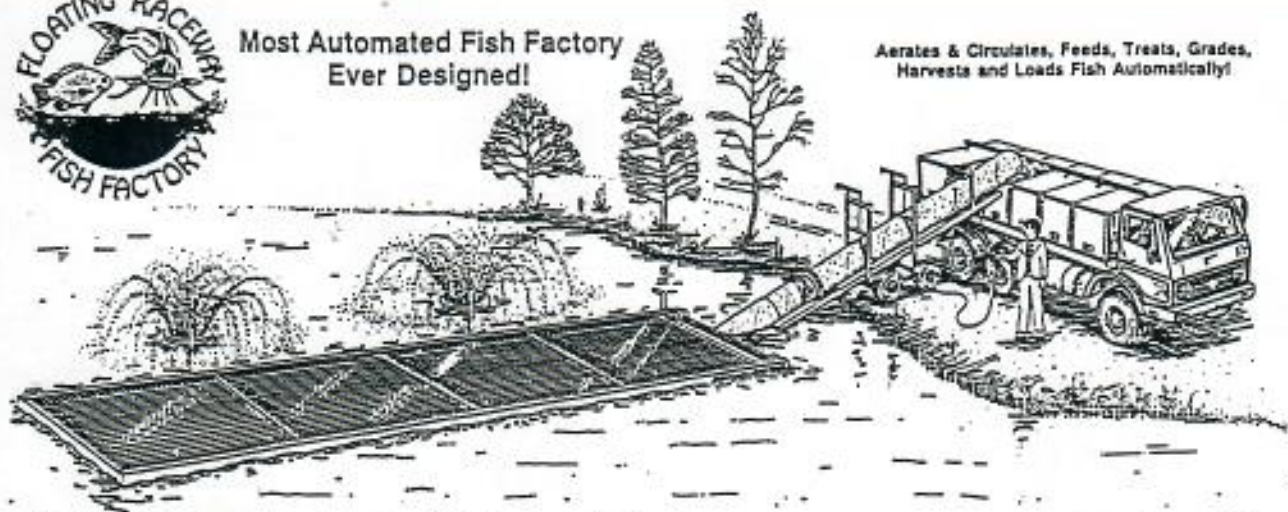
Hopefully the Kemp's ridley program will help earn the farm the recognition it deserves, and international law makers will change their views on farming. According to Jim Wood, the market for turtle products is not going away. Fresh water species are being used as a substitute in U.S. cuisine. Cuba (who recently joined CITES but asked for a special exemption for turtle fishery), and several African countries still have an active fishery. A farmed product would be an economic alternative to a dwindling fishery. Isn't that what aquaculture is all about?

For the present time, it is the cultivation of tourists, not turtles, which provides the financial success of the farm. In 1983 the Cayman government purchased the operation which was struggling after the loss of US markets. As the major land based tourist attraction, the farm now hosts some 100,000 of the 450,000 annual visitors to the island. For \$5.00 C.I., visitors get to see the farm, handle a yearling



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turtle (great pictures), view the crocodile and other indigenous animals, sample turtle stew in the snack bar, and "cruise" the gift shop.

"Realistically, we're more of a tourism operation than we are an aquaculture sort of operation," says Jim Wood. "We lose money on every turtle we raise now because we can't sell all of the turtle into a market." However, the tourist market has been responsible for an operating profit over the last 4 years, which is a first in the history of the farm.

"For the future, we're going to continue along the tourism trail, quite truthfully," says Jim Wood. "We're talking about putting in a large aquaria and mangrove area to show people who are unable or unwilling to dive, the diversity of reef life." Innovation is the key to success for the Cayman Turtle Farm!

#### About The Author

Tom A. Walker is a Canadian-based free-lance journalist who specializes in writing about aquaculture. He is based in Winnipeg, Manitoba.



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the turtles slept along the shallow coral heads, the fishermen would drop huge hand-madenets over the coral shoals. When the animals rose to the surface to breathe, they were effectively trapped in the nets.

By 1900, fishing for turtles became a dying trade, mostly due to the reduced turtle populations in the western Caribbean and to disagreements regarding fishing rights off Central America. By 1980, the Cayman government introduced laws restricting the taking of sea turtles. A five-month turtling season is strictly enforced and a handful of permits are granted only to older residents who consider turtling a traditional pastime. Even so, each turtle caught must be inspected by a fisheries officer before it is slaughtered and all meat must be consumed locally.

It is understandable that the islands are now home to the world's only functioning turtle farm. In addition, the Cayman Islands' coat of arms features a sea turtle, a symbol of the industry on which the economy was based.

The Cayman Islands Turtle Farm was established in 1968 as a private commercial venture to market turtle products. It first consisted of numerous floating tanks located in a tidal creek on the northern side of

Grand Cayman. Currently, the farm is located on land, where concrete tanks and breeding ponds offer more control of the turtle management program.

One of the first steps was to acquire adult animals from various countries to be the nucleus of the breeding herd. Feeding programs were formulated to implement efficient and rapid growth. Husbandry techniques were adopted for optimum reproduction, feeding, tank density, hygiene, and disease control.

When the United States banned the import of all turtle products in 1978, the farm lost 80 percent of its market. The ban was prompted by concern for the species, as defined in the U. S. Endangered Species Act. Now, the farm's primary mission is as a tourist attraction and to conduct research and breeding programs for several species, including the Kemp's Ridley, the most endangered sea turtle.

Very little was known about sea turtles when the farm was established; they are not easy to study. Mating takes place at sea, the male rarely leaving the water. The female comes ashore only to nest, and hatchlings rush to the water as soon as they dig themselves out of the nest. Still to be answered are many questions: where



Left—the Turtle Farm carefully records the weights and measurements of the sea turtles during their first year in captivity; above—Kemp's Ridley Turtles, the most endangered of the sea turtles, have found a nesting refuge. The eggs are picked as they are laid and taken to the hatchery for incubation.

## THE CAYMAN ISLANDS TURTLE FARM

by Lillian Morse Larsen

It's well known that sea turtles have played an important part in the history of the Cayman Islands. The three islands—Grand Cayman, Cayman Brac, and Little Cayman—lie 180 miles south of Cuba in the western Caribbean.

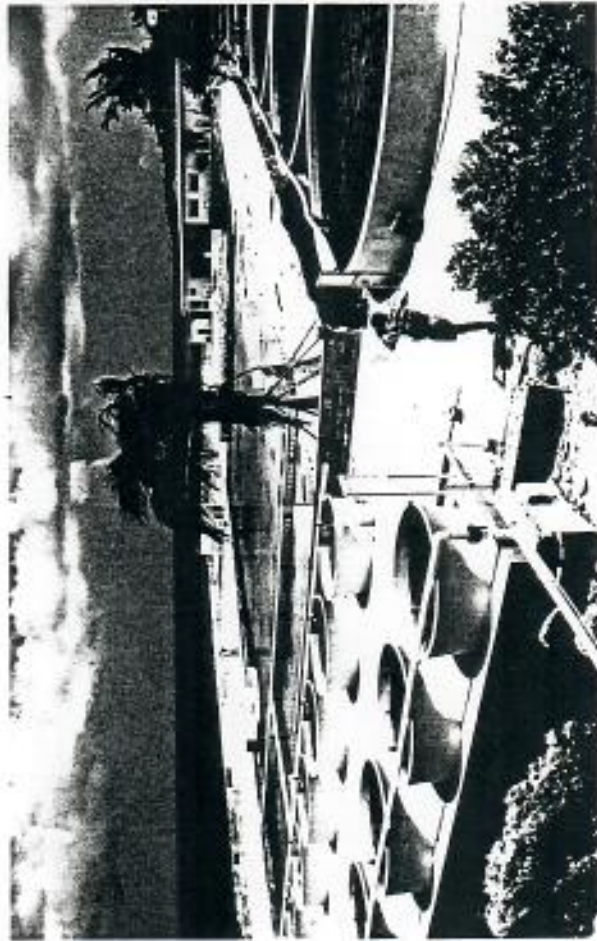
In May of 1503, Christopher Columbus encountered the islands during his last voyage to the New World. The profusion of sea turtles led him to call the islands "Las Tortugas," which is Spanish for "The Turtles." Scientific evidence suggests that native turtles were joined during mating season by others from the Gulf of Mexico, Honduras, and Cuba. Female turtles arrived at the nesting sites to lay eggs three times between May and July.

Within a few years after Columbus' visit, the islands' turtle population became

a source of food for seafarers, from pirates to merchants. The turtles were kept alive by placing them on their backs until needed, or were dried and salted. Naturalist Sir Hans Sloane once wrote that as many as 40 sloops from Jamaica were seen at one time loading turtles in Cayman waters. Every part of the animal was used: for food, soap, and shell ornaments.

Not surprisingly, the practice of collecting eggs and taking adult turtles at sea significantly diminished the turtle population in the early 1700s around the Cayman Islands. Undaunted, turtle fishermen directed their efforts to waters south of Cuba and off Nicaragua in Central America.

There, the giant Green Sea Turtle, often weighing 600 pounds or more, became the most favored species. At night, while



hatchlings spend their first years, their age at sexual maturity, the length of reproductive life, and whether the male is fertile year-round. The turtle farm studies are coming close to answering some of these questions.

A major success was reached in 1984. A pair of five-year-old Kemp's Ridley Sea Turtles mated, nested, and subsequently hatched several young, a first for captive propagation. Kemp's Riddleys have been used as a nucleus for a continuing captive breeding population to insure the perpetu-

ation of the species. Every year, new Kemp's hatchlings are born in captivity. In a cooperative program with Mexico, hatchlings reaching sexual maturity at the farm will be released off Mexico's eastern coastline.

Most sea turtle mortality in nature occurs during the early stages of life, with a 60 percent mortality rate during the first year. The Green Sea Turtle captive-breeding program at the Cayman Islands Turtle Farm is designed to decrease losses by releasing yearlings; less than three percent mortality is observed after one year of age

because turtles are stronger, larger, and more capable of avoiding capture. The program has been in effect for ten years and more than 23,000 tagged yearlings have been released during the decade. Information generated has provided previously unknown data on the migration, mating, and life expectancy of the Green Sea Turtle. This and other research results are continually being provided to the worldwide scientific community.

Every aspect of the breeding and research program is available to visitors on a self-guided tour. A comprehensive display area shows numerous maps, photos of turtle species, and detailed information on the migration and habits of several species, including the Green Sea Turtle, Loggerhead, Hawksbill, Pacific Ridley, Leatherback, Flatback, and Kemp's Ridley.

For example, the Green Sea Turtle lives in shallow coastal waters and feeds primarily on sea grasses and algae. It can weigh as much as 800 pounds, but today a 350-pound animal is considered large. The Hawksbill usually weighs less than 150 pounds and inhabits coral reefs, feeding on sponges and soft corals. The Loggerhead eats fish, shellfish, sponges, and jellyfish, and usually weighs over 350 pounds. The Pacific Ridley, the smallest of the sea turtles, rarely weighs over 120 pounds. It feeds on crabs, shrimp, and snails, and nests in large groups, with several thousand females

congregating on a single beach over a period of several days. The Leatherback is the largest of all sea turtles, weighing an average of 800 pounds, and some have been reported at 2,000 pounds. It lives in the open ocean feeding exclusively on jellyfish, and is frequently found in waters that would be too cold for other species.

Reading the information and looking at all the displays can take quite a while, and they provide an excellent way to understand the studies and conservation of sea turtles in progress world-wide.

Outside, several huge breeding ponds are home to nearly 12,000 Green Sea Turtles. They range in size from hatchlings to massive 400-pound breeders. Several Kemp's Ridley Turtles also swim in one of the farm's concrete pools.

The breeding ponds have provided a unique opportunity to study the Green Turtle's reproductive biology. Management techniques developed on a trial-and-error basis during the past ten years try to duplicate the natural process. A 24-hour vigil is maintained on the breeding ponds so that data associated with mating and nesting can be recorded on an individual turtle basis. Herpetologists at the farm are also studying the hormonal aspects associated with mating and nesting, and work is continuing on artificial insemination.

Mating season leads to nesting season. Between May and October, hundreds of

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## TRAVEL INFORMATION

**Getting There:** The Cayman Islands' stable government, high standard of living, and English language make it one of the most enjoyable Caribbean islands to visit. Flights are scheduled daily by Cayman Airways from Tampa, Miami, Houston, Atlanta, and New York. For information, call Cayman Airways at (800) 422-9626. American Airlines and Northwest also have regularly scheduled service to Grand Cayman. Proof of U. S. citizenship and round-trip tickets are required.

**Currency:** The official currency is the Cayman Islands dollar (C. I.) which is valued at 80¢ to the U. S. dollar. However, U. S. currency is accepted at most places.

**Accommodations:** Numerous hotels, motels, and condominiums are available for all budgets. The most popular hotels are located on Seven Mile Beach. Seasonal rates vary, with November through March the on-season; May through October is the off-season.

**Getting Around:** Major rental cars are located at the airport. You only need your driver's license and you must remember to drive on the left! Public transportation is excellent.

For complete visitor information, write: Cayman Islands Dept. of Tourism, P. O. Box 67, George Town, Grand Cayman, B. W. I., or phone (809) 949-7999.

females lay thousands of eggs on a man-made sandy beach adjacent to every breeding pond. The eggs are carefully picked as they are laid, and taken to the hatchery.

A window displays the eggs in various hatching stages. Slightly larger than tennis balls, they are packed between layers of sand in styrofoam chests and incubated for approximately 60 days. Temperatures below 75°F or above 90°F generally result in little hatching success.

The hatchery controls the sex of the Green Sea Turtles via incubation temperature. At 82°F, an equal number of males and females are produced. Cooler temperatures result in all males, while warmer readings produce all females.

Several thousand hatchlings successfully reach maturity at the farm each year. In addition, about 4,000 tagged yearlings are released into the wild. A portion of the hatchlings are used for local consumption.

The successful hatching and release program enjoyed by the farm has placed it at the forefront of international scientific studies. Its efforts to save the Kemp's Ridley Turtle from extinction, its graduate research program, and its successful captive breeding protocols for Green Sea Turtles are just a few examples of the conservation efforts under way.

Jim Wood, PhD, the Turtle Farm's managing director, often comments that their conservation efforts will be a success when scuba divers no longer think it special to see a sea turtle in the wild. ➤

*Lillian Morse Larsen is a freelance travel and outdoor writer.*

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27 March 1984

Mr. Robert A. Jantzen  
Director  
Fish and Wildlife Service  
U.S. Department of the Interior  
Washington, D.C. 20240

Dear Mr. Jantzen:

Thank you for your letter of 16 March 1984 in response to the comments of Hon. John B. McLean on behalf of the Cayman Islands Government supporting the Service's proposal to include sea turtles as a National Species of Special Emphasis (NSSE).

As is often noted, the Cayman Islands rookery once supported a very large population of sea turtles, especially greens (Chelonia mydas). However, as a result of overfishing during the 18th and 19th Centuries, wild populations of sea turtles in waters surrounding the Cayman Islands became severely depleted, if not extinct. Yet, the habitat for sea turtles in the Cayman Islands remains intact, and nesting on local beaches has been observed recently. In fact, 973 loggerhead and 319 green hatchlings from local wild nests discovered by beach patrols in 1983 were incubated in CTF's hatchery and released back to the wild. These are encouraging signs of recovery of the wild populations in the Cayman Islands.

Given the migratory nature of sea turtles, especially the greens, there is a very strong shared interest between the U.S. and the Cayman Islands to work co-operatively toward sea turtle recovery and conservation. Development of the autografting ("living tag") technology for permanently marking released turtles in co-operation with the Service's Region 2 office is but one example of the kind of positive programs that are possible.

However, the Cayman Islands are very interested in developing marine parks under the mandate of their Marine Conservation Law. Shared information and expertise from the Service toward management of these marine parks would be of great benefit to sea turtles as well as to numerous other aquatic life. The Cayman Islands ecosystem (including habitat for migratory birds) has been, and is likely to continue to be, of great interest for study by U.S. scientists.

cont.../2

**ORREN MERREN**  
**Barrister & Attorney**

Mr. Robert A. Jantzen  
27 March 1984  
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In a meeting on 13 March 1984 with Bob Gilmore and other staff from the Service, counsel for the Cayman Islands Government undertook to prepare a draft agreement and to seek to have it cleared through the U.K. Department of the Environment as well as the U.K. Foreign and Commonwealth Office (the Cayman Islands being a dependent territory of the U.K.) with instructions on the scope of proposed agreement (i.e., a formal bilateral treaty or a more simple Memorandum of Agreement) and on the method of transmittal to the Service. Once this clearance is obtained, the draft agreement is to be presented to the Service in accordance with those instructions. From your letter, I am pleased to learn that the Service is also working on a plan for the agreement.

As a follow through from the 13 March 1984 meeting, John Spinks of the Service's Endangered Species Office was kind enough to provide counsel for the Cayman Islands Government with a copy of the draft recovery plan for marine turtles developed by the Service in conjunction with the National Marine Fisheries Service. We want the proposed conservation agreement to be in harmony with the recovery plan.

In its present form, the draft recovery plan is notable by its absence of reference to CTF or to turtle farming or ranching in accordance with CITES. This is not surprising, since no turtle expert directly involved in turtle culture participated in preparation of the draft plan. Certainly, no input was received from CTF or the Cayman Islands Government of which I am aware. However, I was pleased to note from your letter that the Service considers "appropriately applied commercial turtle trade" to be a part of the conservation effort to promote species recovery. Therefore, I shall be grateful if the Service would consider input from CTF and the Cayman Islands Government before finalizing the recovery plan for marine turtles.

As legal counsel to the Cayman Islands Government, I am quite familiar with the Service's mandates under ESA and CITES. However, I am also able to recognize as a philosophical position the notion that continuance of the 1978 ban on imports of CTF products into the U.S. is due to "the belief that benefits from farming turtles do not compensate for stimulation of trade in wild turtle products and for the associated problems with enforcing laws to protect wild turtles."

cont.../3

**ORREN MERREN**  
**Barrister & Attorney**

Mr. Robert A. Jantzen  
27 March 1984  
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Does this statement in your letter indicate that the Service intends to revert to the philosophical position expressed in the 1978 rulemaking? In the proposed transshipment rule relating to CTF (48 FR 20098, 4 May 1983), the Service stated (at 20099): "Cessation of [CTF's] operation ... will discourage others from developing captive breeding and ranching operations for sea turtles, thereby continuing commercial pressures on populations of the turtles in the wild. ...[P]roducts from [CTF] could displace demand for products from wild green sea turtles. ... Any demand for green sea turtle products that can be met from captive stocks could reduce pressure on wild stocks." Enforceability of laws to protect wild turtles is preserved in the proposed rule through safeguards such as serial numbering, CITES documentation, limitation of shipments to one port of entry, and consignees names and addresses being entered into the law enforcement data bank.

In his testimony on 4 October 1982 before Congressman Breaux's Subcommittee, Mr. Arnett, on behalf of the Department of the Interior, stated that subsequent concerns had been raised about the validity of the conclusions on which the 1978 rulemaking was based (including the "beliefs" recited in your letter). Similarly, Mr. James Winchester, on behalf of the Department of Commerce, stated at those same hearings that "the validity of those reasons has been questioned because they are not necessarily all proven facts."

Your letter makes reference to "the Service's offer to consider a proposal from CTF to allow import of their sea turtle products if and after the farm's population is downlisted to Appendix II in accordance with the criteria of Conf. 3.15 by the Parties to CITES at the next meeting in the Spring of 1985." (emphasis added) Does this statement in your letter also represent a very recent shift in the position of the Service, such that regulations to lift the ban would only be considered for proposal if and after action by the Parties in 1985?

At the 4 October 1982 hearings referenced above, Mr. Arnett stated that "when the CITES parties clarify the requirements for the captive-bred exemption, and when CTF can meet these requirements (or the requirements of the ranching exception), their products, which are from species listed as threatened, could be imported into the U.S. under the revised regulations that the Service will propose. ...[T]he Service will immediately begin work on revising the sea turtle regulations to establish criteria for lifting the ban." We have been proceeding on the basis that this statement still represents the Department's policy and commitment.

**ORREN MERREN**  
**Barrister & Attorney**

Mr. Robert A. Jantzen

27 March 1984

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Counsel to the Cayman Islands Government (at the 14 February 1984 meeting attended by Mr. McLean and otherwise) have discussed with the Service a proposal whereby a comprehensive "kangaroo style" (i.e., condition subsequent) rulemaking to allow commercial and personal effects imports as well as transit and transshipment on the basis of Appendix II status (either by operation of the captive breeding exemption to the satisfaction of U.S. authorities or by action of the Parties under the ranching resolution or otherwise) of the specimens to be traded would be proposed in 1984 pursuant to a petition for new rulemaking.

Notwithstanding the terms and tenor of your letter respecting the "beliefs" of the Service and timing for proposed regulations, we are continuing our efforts as agreed. Clarification that your letter was not intended to indicate a recent shift in Department policy and commitment would be appreciated.

Finally, I would like to clarify that the Cayman Islands Government considers that our efforts toward reaching a conservation agreement pursuant to Mr. McLean's comments on the Service's NSSE proposal are separate from our efforts to provide the Service with a petition for new rulemaking. Although there is some necessary overlap in the subject-matter, we strongly urge that the two initiatives be considered separately by the Service and on their own merits.

Very truly yours,



ORREN MERREN  
Barrister & Attorney

cc: Hon. John B. McLean  
Mr. G. Ray Arnett  
Mr. James W. Winchester  
Mr. Bob Gilmore  
Mr. Don Barry