



Freedom of Information Response: Breeding

The questions detailed below were sent to the Cayman Turtle Farm and answers were supplied under FOI legislation. 186 different female Green sea turtles are actively reproducing at the Cayman Turtle Farm and have laid eggs over the past five years.

What are the annual green sea turtle mortality rates at the Cayman Turtle Farm over the past five years?

Total annual mortality, (% of total herd)

2011 - 714, (8.1%)
2010 - 355, (4.9%)
2009 - 511, (7.2%)
2008 - 385, (5.4%)
2007 - 334, (4.4%)

On the subject of mortality, on July 17th of this year, our farm experienced an accident which resulted in the tragic loss of 299 adult Green sea turtles. A large pipe supplying a major portion of fresh seawater to our turtle tanks ruptured under a public road.

Turtles in the roughly 100 enclosures on the farm had interruptions or reductions of water over the 30 hour period that it took to dig the road up and make repairs to the pipe. Unfortunately, during this time period, the turtles in one tank perished. The farm has never had a loss of this magnitude before and deliberate steps have since been taken to ensure that this never happens again.

How many green sea turtles at the Cayman Turtle Farm are actively reproducing and how many have laid eggs over the past five years?

186 different female Green sea turtles are actively reproducing at the Cayman Turtle Farm and have laid eggs over the past 5 years.

How many green sea turtle eggs have been laid at the Cayman Turtle Farm over the past five years?

127,000 Green sea turtle eggs have been laid at the Cayman Turtle Farm over the past 5 years.

How many nests have been made by female green sea turtles at the Cayman Turtle Farm over the past five years?

1,471 green sea turtle nests have been made at the Cayman Turtle Farm over the past 5 years.

How many green sea turtle eggs have successfully hatched (successful hatching defined as the hatchling surviving to at least 12 months old) at the Cayman Turtle Farm over the past 5 years?

7,905 green sea turtle hatchlings have survived to at least 12 months old from 2007 to 2011.

Per female green sea turtle, what has been the hatchling success rate over the past five years at the Cayman Turtle Farm (successful hatching defined as the hatchling surviving to at least 12 months old)?

6.2 % of the 127,000 eggs laid by 186 different Green sea turtles at the Cayman Turtle Farm successfully hatching defined as surviving to at least 12 months old.

Freedom of Information Response: Conservation

The questions detailed below were sent to the Cayman Turtle Farm and answers were supplied under FOI legislation.

How many of the green sea turtles released by the Cayman Turtle Farm are currently breeding on Caymanian beaches?

The numbers of Green Sea Turtle nests on Caymanian beaches has increased from less than 25 (1999) to over 200 (2012), a direct consequence of the Cayman Turtle Farm (CTF) release program (see figure 1 below).

Fig 1

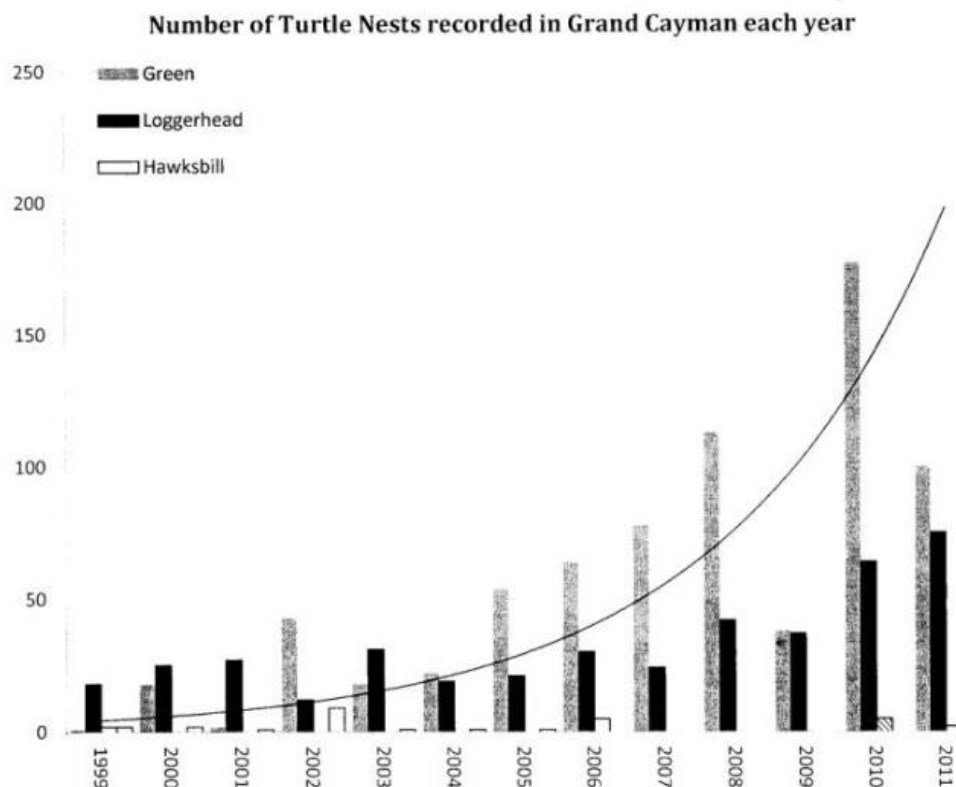


Fig.1: Graph produced by CI DoE showing Number of Turtle Nests each year

At least 11 different “living tagged” Green females released from the CTF in the 1980s have returned to nest on these beaches. These join an unknown number of un-tagged females that have been released since 1968. It is interesting to note from the graph that the curves for Loggerhead and Hawksbill sea turtles which are not “farmed” at the Cayman Turtle Farm (CTF) show increases that are marginal, at best. In contrast, the striking increase in wild nest numbers for the Green sea turtle is a result of “farmed” turtle releases.

On a historical note, tagging studies for the CTF date back to the early 1970’s when released turtles were flipper-tagged with a small titanium tag and a reward (\$US 10) was offered for the return of the tag and data (location of sighting, size, sex). At the time, there was legitimate concern the farm-raised released turtles might not be able to transition from an artificial diet to a wild, natural diet. Would they survive predation and where would they go? Would they remain in Cayman waters? Fortunately, within a few years of release, the farm was able to answer these questions. Tags were mailed in to the farm from throughout the Caribbean with captures documented from Florida, Cuba, Central America and, as far away as Venezuela. Growth rates, data showed, were comparable with that of “wild” Greens.

The farm’s initial tagging studies demonstrated that released turtles survive and migrate great distances. Could the farm show or prove that farmed turtles released were completing their life cycles by successfully returning to their natal beaches to lay eggs? The answer to this question was answered, but it would take decades. (We now know that it takes 25 - 35 years for wild Green sea turtles to reach sexual maturity.) To answer this important question a different type of longer lasting tagging was required—a tag referred to as a “living tag”. White plastron tissue (living) from the belly of a turtle was grafted into scutes on the darker upper carapace making a unique marking that could be used to individually ID turtles and determine their year of release. These grafts were painstakingly performed during the 1980s. Living tagged turtles were released and the farm waited for their return. Amazingly, these tagged females, 25 years after release, have started to return and nest on public beaches of our 3 islands. The conservation implications are significant. We are part of the Green sea turtle conservation solution.

How does the Cayman Turtle Farm monitor the survival rate of the green sea turtles that have been released into the wild?

The Cayman Islands Department of Environment (DOE) actively monitors beach nesting activity, recording all sightings and measurements from Green sea turtles released from the Cayman Turtle Farm. The graph above (Fig. 1) reflects data collected since 1999. According to Dr. Janice Blumenthal, Cayman Islands DOE research scientist, over 200 Green sea turtle nests have been recorded in the current 2012 nesting season, which will end till November of this year.

How does the Cayman Turtle Farm ensure that their green sea turtles are free from disease before they are released into the wild?

The CTF follows internationally recognized protocols for release of turtles to the wild using a purpose-built 3600 sq ft quarantine facility that circulates ozone-treated, disease-free water, and has appropriate holding tanks for the separation, treatment, and observation of pre-released turtles.

How many green sea turtles has the Cayman Turtle Farm released back into the wild since it was first established?

Over 31,000 Green sea turtles have been released to the wild. Wild Green sea turtles don't reach sexual maturity until they are 25-35 years old. The turtles that the farm released to the wild in the 1970's are now reaching sexual maturity and are returning to Cayman beaches to nest. This is of significant importance for Green sea turtle conservation and for tourism in the Cayman Islands.

How many green sea turtles has the Cayman Turtle Farm released back into the wild annually over the past five years?

2011 - 61
2010 - 22
2009 - 30
2008 - 0
2007 - 20

Release numbers are a function of hatchery success and processing levels. The recent dramatic increases in egg production have allowed release numbers to go up but that hasn't always been the case. Approximately 75% of the breeder herd was liberated to the wild during Hurricane Michelle (2001). Waves washed over the breeder pond. As a result of this storm and loss of breeders, hatchling production was significantly reduced in the years immediately following the storm. Consequently, releases from the farm were also curtailed. In recent years, with the maturation of replacement breeders, an improved breeder diet, and changes to hatchery protocols, egg production has risen steadily.

How does the Cayman Turtle Farm ensure that turtles released back into the wild do not harbour disease or infections?

Turtles released by the Cayman Turtle Farm (CTF) exhibit good health, are of typical size and weight for their age class, and do not exhibit clinical signs of disease. They undergo a period of quarantine during which time they are given a preventive de-worming treatment and undergo daily observation.

What diagnostic tests does the Cayman Turtle Farm carry out to identify whether turtles that are released back into the wild do not have any visible symptoms of illness or disease?

Turtles for release were visually inspected by Cayman Turtle Farm staff and it's Chief Research Officer. No animals exhibiting clinical signs of disease have been released from the farm. There have been no releases since November, 2012 because release protocols are currently being reviewed in light of recommendations made in the Inspection of Cayman Turtle Farm (10-12th December, 2012): Report to the Cayman Turtle Farm (Ltd.) received December 17, 2012.

The Cayman Turtle Farm previously stated that 31,000 turtle have been released back into the wild; please can you detail how many turtles have been released each year since the farm was established in 1968?

Year	Number released
1980	1208
1981	1764
1982	0
1983	4476
1984	2000
1985	3107
1986	1936
1987	6059
1988	1202
1989	4569
1990	104
1991	570
1992	0
1993	604
1994	129
1995	102
1996	100

Year	Number released
1997	440
1998	404
1999	837
2000	638
2001	520
2002	48
2003	21
2004	2
2005	22
2006	29
2007	20
2008	0
2009	30
2010	22
2011	71
2012	150
2013	0 (to date)



Freedom of Information Response: Economics

The questions detailed below were sent to the Cayman Turtle Farm and answers were supplied under FOI legislation.

What is the annual income generated by the Cayman Turtle Farm over the past five years?

2011 - CI \$ 4,842,521
2010 - CI \$ 4,574,054
2009 - CI \$ 4,869,803
2008 - CI \$ 5,271,299
2007 - CI \$ 5,573,192

(Source - Annual Financial Statements audited by KPMG and CI Auditor General)

What has the annual expenditure been for the Cayman Turtle Farm over the past five years?

2011 - CI \$ 12,806,226
2010 - CI \$ 12,924,855
2009 - CI \$ 16,885,590
2008 - CI \$ 18,326,500
2007 - CI \$ 13,526,932

(Source - Annual Financial Statements audited by KPMG and CI Auditor General)

What has the annual number of visitors to the Cayman Turtle Farm been over the past five years?

2011 - 229,393
2010 - 229,146
2009 - 226,288
2008 - 222,034

2007 - 293,008 (Source - Annual Financial Statements audited by KPMG and CI Auditor General)

Please detail the funding received by the Cayman Turtle Farm from the Cayman Government and any other public bodies or institutions for the last five years.

Year	Total funding in CI\$	Debt servicing in CI\$	Operating and capital expenses
2006 - 7	5,824,104	3,578,464	2,245,640
2007 - 8	8,451,967	5,966,465	2,485,502
2008 - 9	10,554,818	5,867,789	4,687,029
2009 - 10	9,555,610	6,021,498	3,543,112
2010 - 11	9,852,569	6,102,434	3,750,135



Freedom of Information Response: Meat Production

Here are the key details to update your documents before the templates are available:

How many green sea turtle have been sold for human consumption by the Cayman Turtle Farm over the past five years?

2011 - 762
2010 - 821
2009 - 1,298
2008 - 1,698
2007 - 1,632

Turtle meat sold to the public from the Cayman Turtle Farm is subject to national food safety and processing standards. The purpose-built processing plant is regularly inspected and meets all internationally accepted food safety and animal handling protocols.

In addition to supplying sustainably farmed turtle meat for local consumption in a controlled and legal way, this meat is an important substitution for illegally poached and processed wild turtle.

Despite hefty fines and possible incarceration, poaching of wild sea turtles continues here in the Cayman Islands. In the eyes of the Cayman Islands Department of Environment, the Cayman Turtle Farm performs unique and key functions both with the release of turtles to the wild and by reducing poaching activity.

Freedom of Information Response: Health and Welfare

The questions detailed below were sent to the Cayman Turtle Farm and answers were supplied under FOI legislation.

Please detail the age brackets of the (9,860) turtles that are currently kept at the Cayman Turtle Farm?

Age	Quantity
1	4332
2	2039
3	1149
4	1875
5	16
6	20
7	20
8	20
9	20
10	19
11	1
>12 Years (Breeders)	349

What precautions does the Cayman Turtle Farm take to ensure diseases are not spread or at least are minimized between turtles kept at the Farm?

Purpose-built culture tanks were designed and are used to ensure that each tank has its own water intake and outflow. No water or potential pathogens flow from one tank to another. Turtles are observed daily and those with suspected serious health issues are removed from the general population and placed in quarantine tanks for observation and, if needed, treatment.

Handling equipment is disinfected between uses. Tanks are routinely cleaned and disinfected.

Nutritionally complete diets are used to help the farmed turtles achieve optimal growth and maintain optimal health.