

# Sea Turtle Farming

## PAST, PRESENT, AND FUTURE?

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Green turtles provided a vital source of protein for settlers who arrived in the Cayman Islands more than 300 years ago. For centuries, green turtles were harvested directly from their natural habitats, but the unregulated and unsustainable harvest ultimately led to a dramatic decline in Cayman turtles in modern times. Many other nations that experienced similar declines chose to prohibit the consumption of green turtles, keeping in line with international legislation. The Cayman Islands took a different path and, in 1968, decided to turn to the commercial production of green turtles. Today, turtle stew remains the national dish, and turtle burgers are available on restaurant menus for both locals and tourists alike.

The Cayman Turtle Farm is now the only sea turtle farm left in the world, and it is still producing green turtle meat for local consumption. The farm is also engaged in turtle research and conservation. It is the most visited tourist attraction in the country, annually receiving hundreds of thousands of visitors who come to hold and have their picture taken with a farmed turtle. This government-owned

tourist facility is currently home to a single hawksbill turtle, around 18 critically endangered Kemp's ridley turtles, and more than 9,500 endangered green turtles. Until recently, the farm also engaged in a "head-start" program, whereby farmed green turtles were maintained in captivity until they were 9 to 12 months old before being released into the wild when they were at a size at which natural mortality factors are minimized.

Founding green turtle "stock" was taken from Ascension Island, Costa Rica, Guyana, Mexico, Nicaragua, and Suriname between 1968 and 1978. In total, more than 477,000 eggs were collected, along with 148 adults and subadults. By 1978, the farm demonstrated that it could breed new eggs, hatch them, and rear a green turtle to maturity without needing to obtain additional wild eggs. However, deep controversy ensued over whether the farm had legitimately achieved this breeding program in a manner that met Convention on International Trade in Endangered Species (CITES) definitions of the time. As a result of those concerns, a 1979 CITES ruling prohibited the international trade of green turtles and their products.

The continued survival of green turtles in the Cayman Islands remains a conservation concern. Yet restaurateurs are quick to allay any unease that a conscientious consumer (both Caymanian and tourist) might have. After all, the turtle meat in their burger was reared in captivity, so consumption poses no threat to wild populations. Some go as far as to claim that the farm is a critical conservation tool and was directly responsible for the increases in nesting greens that have been observed in the Caymans. The restaurateurs argue that the legal sale of farmed turtle meat is the only effective way to stop people from taking green turtles from the wild. Moreover, the farm has released more than 31,000 captive-born green turtles into the wild as part of its head-start program, which has been in place for 37 years.

For four decades, sea turtle conservationists have been at odds regarding the exact contribution that the farm has made. Debate has focused on whether the two strategies used at the farm—sale of farmed turtle meat and release of farmed turtles—are having a positive or a negative effect on wild sea turtle populations. Those who oppose the farm have expressed concerns that any increase in the availability of turtle meat on the market will only stimulate demand. Furthermore,





A breeder removes eggs from the nest of a green turtle at Cayman Turtle Farm. © DAVID DOUBILET AT LEFT, TOP: Green turtles in a tank at Cayman Turtle Farm. © NEIL D'CRUZE BOTTOM: Green turtles are found on menus throughout the Cayman Islands. © NEIL D'CRUZE

poaching will likely carry on regardless, because of the high price of farmed turtle meat in the Cayman Islands.

Serious concerns have been raised about the effects of genetic pollution from the head-start program's release of turtles from diverse and unknown genetic stocks. Potentially fatal and contagious illnesses, such as chlamydiosis and gray patch disease, have also been well documented at the farm. Concerns about the risks of introducing diseases and parasites into wild populations contributed to a decision to put the head-start program on hold in 2013.

Both sea turtle conservationists and the Cayman Turtle Farm have recently acknowledged that the scientific data required to back up the farm's conservation credentials are severely lacking. Currently, the true level of Caymanian demand for turtle meat and the proportion actually consumed by tourists is unknown. Similarly, existing data show that only 13 (0.04 percent) of the more than 31,000 farmed green turtles released into the wild have been proved to be nesting on Caymanian beaches. Consequently, the U.K. Department for Environment, Food and Rural Affairs (DEFRA) has provided funding for a three-year study to determine the effectiveness of the farm as a conservation tool by investigating both consumer demand for green turtle meat and the genetics of nesting populations.

In contrast, the animal welfare concerns (referring to an animals' physical and psychological well-being) associated with the farm have been voiced repeatedly by the general public, academics, nongovernmental organizations, and a U.K. Parliamentary Select Committee since 2012. Together, they have documented a range of disturbing animal welfare concerns at the farm. Specific accusations include severe overcrowding (some tanks house up to 999 animals in an area measuring 80 square meters [865 square feet], equating to about 0.08 square meters [0.87 square feet] per turtle), emaciation, disease, injury, and maladaptive behaviors such as frenzied feeding and in some cases even cannibalism.

The death of 299 green turtles in one night, which resulted from a burst water pipe in 2012, also raised questions about neglect at the farm.

The economic difficulties associated with sea turtle farming are also apparent. Between 2007 and 2011, the farm received more than CI\$44 million (US\$53.7 million) in subsidies, a yearly average of CI\$9 million (US\$11 million). Massive annual subsidies are still being provided and are set to continue despite calls for change from an independent financial review conducted by the global investment company Ernst and Young.

One can reasonably question whether this funding could be more effectively spent on alternative conservation measures that are aimed directly at protecting wild populations. For example, public awareness initiatives and increased resources for enforcement agencies have effectively helped to address the root causes of wild green turtle population declines elsewhere.

Those concerns may be why the farm is the only remaining facility of its kind in operation. Kélonia, the Observatory of Marine Turtles in Réunion Island, has made a gradual yet successful transition away from being a commercial farm to become a much-needed rehabilitation and release facility for sick and injured sea turtles as well as a popular tourist destination. Kélonia's transition has been accompanied by an increase in wild sea turtle populations. This example directly challenges the view held by many farming advocates who believe that a shift away from turtle farming in the Cayman Islands could not be achieved without decimating wild populations.

A new study will soon shed light on the conservation credentials of the Cayman Turtle Farm. However, given that other effective ways to conserve green turtles exist (which do not involve animal welfare concerns and exorbitant financial subsidies), we may still find ourselves asking the same underlying question: Does sea turtle farming have a future? ■