

Guangdong Overcame the Captive Breeding Technology of Sea Turtle (Press Conference, October 16, 2017)

Recently, Guangdong Huidong Sea Turtle National Nature Reserve scientific research group overcame the captive breeding technology of sea turtle, successfully induced five farmed sea turtles laying 19 clutches, a total of 1547 eggs, in which 639 were hatched, 48.1% at average rate and 91.9% of the highest hatching rate.

1. Project Background

Fishing, commercial trade, environmental pollution and habitat destruction have affected many species of turtles, including sea turtles, declined sharply in population. By the conclusion of the Turtle Survival Alliance (TSA), captive breeding is considered to be one of the most effective methods and the key techniques for wild reptiles' conservation and recovery. For the long-distance migration, protection difficulty of sea turtles is great and recovery of their wild population is extremely slow. Experts estimate that the number of adult sea turtles in the South China Sea is less than 2,000. As a result, the captive breeding has become the key technology and important measure to accelerate the restoration of wild sea turtle population in China.

2. Course and Innovation

(1) Course

Since 2008, under the leadership and support of the director Mr. Gu Hexiang, senior engineers Mr. Ye Mingbin have been responsible for this project. He initiated the design and transformation of the breeding ground, and the cultivation of sea turtles at the same time. Since deputy director Mr. Wang Shaofeng took over administrative power from Mr. Gu in 2016, the captive breeding work was brought to important agenda of the reserve. On one hand, he was looking for financial support; On the other hand, he exerted management intelligence, fully supported Mr. Ye.

The scientific research group mainly composed of senior engineer Mr. Ye mingbin, engineer Chen Hualing, engineer of Duan Jinxia, and technician Li Manwen. They explore boldly, innovatively, day and night with sincere cooperation. They did not required payment, sacrificed a lot of holidays and rest time, that revealed the spirits of fight, enduring hardships and dedication. Through nearly two years of continuous research, the first clutch of the sea turtle hatchling break off in July 24, 2017 that marked the captive breeding project got to success in China.

(2) Innovation

From the aspects of physiology, ecology, nutrition, the project successfully induced adult turtles mating and spawning, developed a mature technology and laid a solid foundation for sea turtle population recovery.

(I) Through satellite tracking, they mastered the biology and habitat of Huidong green sea turtle population, and provided scientific basis for the design and key factor of captive breeding habitat;

(II) Screened high-quality adult turtles with DNA technology;

(III) Completed a set of captive breeding technology solution for sea turtle, including mating type selection, feed formula creation, ultrasonic detection, hormones monitoring, breeding inducing (sex hormone regulation, photoperiod regulation, current stimulation, etc.), infrared video monitoring, hatch and sex ratio regulation, hatchling breeding and identification.

(IV) By means of "artificial rainfall" and light intensity regulation, monitored the temperature, humidity and light cycle of the spawning site, raising the success rate and hatch rate of turtles.

3. Application Prospect

The breakthrough in captive breeding technology of sea turtle filled the blank in China, and won the high affirmation of well-known media such as Renmin Ribao, Chinanews, The Paper, Ming Pao, etc.

The project has been highly valued and affirmed by office leaders of the Department of Ocean and Fisheries of Guangdong province (DOFGP) . On August 14,

2017, secretary of party committee of DOFGP Mr. Wang Zhongbing made an important comment on the technique of conquering captive breeding of sea turtles in our province, and required to summarize the techniques and improve the level of captive breeding technology.

Under the situation of hostile environment and population decreased dramatically, the captive breeding technology in the turtle conservation and ecological restoration exerts extensive application prospect, and will make a significant contribution for the sea turtle population recovery in China.