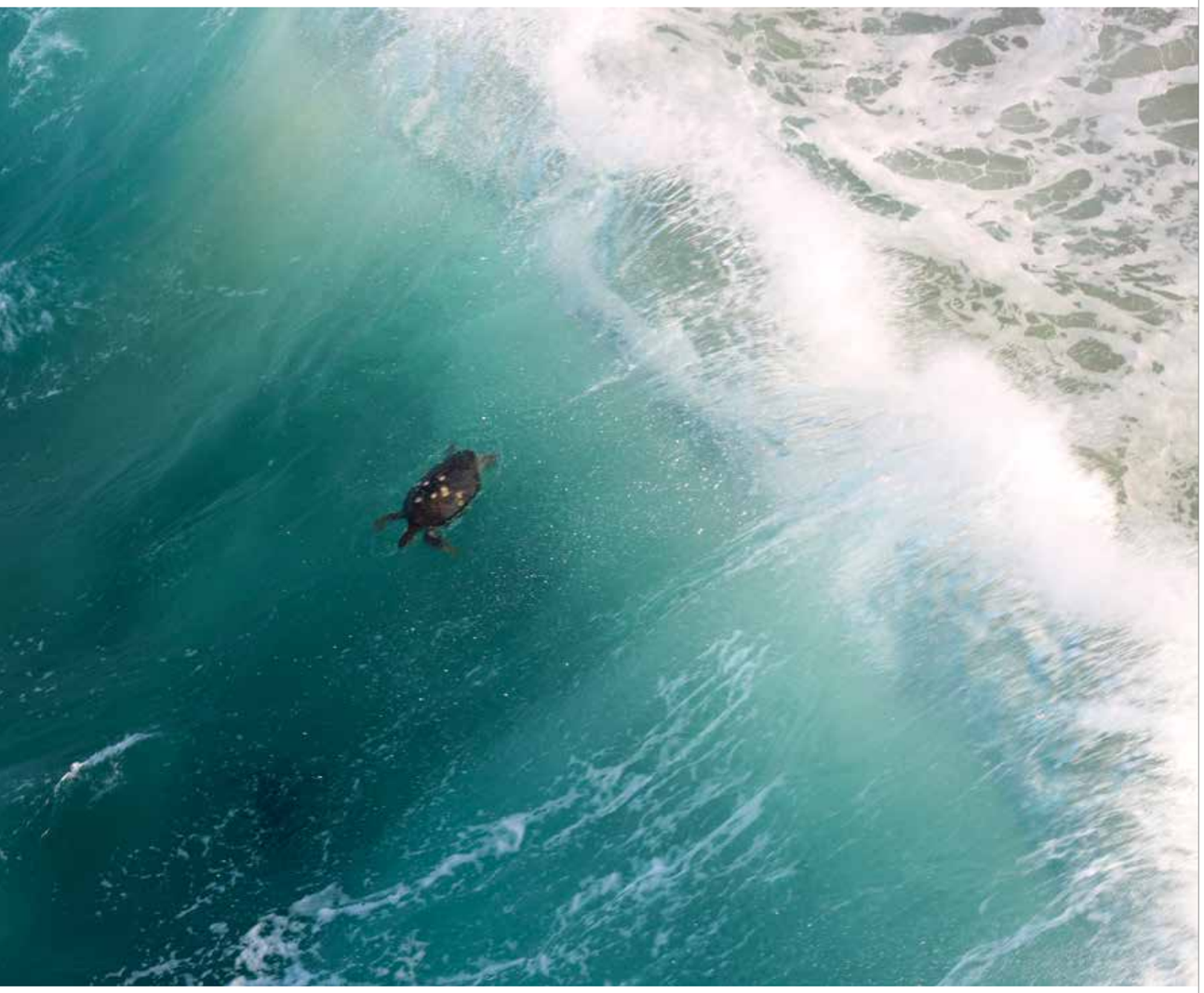
MICHOACÁN'S BLACK TURTLE

Back from the Brink

by CARLOS DELGADO TREJO



The rugged, vast expanse of Mexico's Pacific coastline is the setting for one of the most inspirational sea turtle conservation success stories of all time. Located halfway between the resort cities of Acapulco and Puerto Vallarta, the coastline of Michoacán is comparatively quiet and secluded. Broad, sandy beaches here provide ideal nesting habitat for the black sea turtle. Once believed to be a separate subspecies of green turtle found only in the Eastern Pacific, it was formerly considered among the most threatened sea turtle populations in the world.

The black turtle, known locally as tortuga negra or tortuga prieta, is actually a somewhat genetically distinct variety of the globally ranging green turtle (*Chelonia mydas*), which is known to occur in many colors, shapes, and sizes (see *SWOT Report*, vol. VI, p. 34). The black turtle thrived in Mexican waters until the late 1960s, when intense harvesting of eggs and adult turtles led to drastic declines. Harvest data from the period indicate that the black turtle population was particularly abundant in the early 1960s. According to information from Colola Beach, 70,000 eggs per night were harvested during the peak of the 1965 nesting season. It is estimated that 25,000 black turtle females nested there at that time. However, according to René Márquez, a researcher at the Mexican National Fisheries Institute, harvests exceeded 4,500 metric tons (4,960 U.S. tons) from 1966 to 1970. That intense, unsustainable pressure resulted in a near collapse of the black turtle population, and by 1988 as few as 170 nesting females remained on the Michoacán beaches of Colola and Maruata.

Much of the data on the decline can be attributed to American biologist Kim Cliffton, a researcher at the Arizona-Sonora Desert Museum, who began aerial surveys of the region in 1978 to better understand black turtle distribution and abundance in Pacific Mexico. At that time, Cliffton reported significant nesting on at least 12 beaches along the Michoacán coast; the highest nesting concentrations were at Colola and Maruata, which combined accounted for approximately 48 percent of total nests in the state.

Researchers began to respond to the population crisis in 1982. That year, Javier Alvarado-Díaz, a professor in the biology department at Michoacán University of San Nicolás de Hidalgo, led a trip to Colola and Maruata to begin systematic research and conservation of the black turtle. Despite the best efforts of Díaz and his team, the population continued to decline from 1982 to 1999, with the most drastic declines recorded in 1988 and 1998.

Part of the challenge the researchers faced was that the pressures from elsewhere in Mexico and the American Pacific also contributed to the decline. Working on the Baja Peninsula, Wallace J. Nichols, a scientist at the California Academy of Sciences, estimated in 2002 that in Baja California alone between 7,000 and 15,000 black turtles were captured for human consumption, despite the Mexican ban on sea turtles and products that had been in place since 1990.

But in 2001, the outlook was beginning to improve for the black turtle. The number of protected nests on the beaches of Colola and Maruata increased significantly. The number of reproductive adults reported in Michoacán also increased for the first time, thanks to improved conservation efforts in Baja California led by Grupo Tortuguero de las Californias. The increase in the number of nesting females has remained steady, and we estimate that approximately 10,000 black turtle females now nest on Colola beach alone. Considering that black turtle nesting is also occurring on adjacent beaches such as Motín del Oro, Paso de Noria, Arenas Blancas, and La Llorona, we estimate that the black turtle nesting population in Michoacán is at approximately 15,000 females. That figure represents a 60 percent increase from the estimated population in the early 1960s. One particular highlight was a nesting event on

September 14–15, 2014, during which 1,086 nesting females came ashore at Colola—something unheard of since the mid-1960s—demonstrating the success of local conservation efforts.

Thirty-five years after the start of conservation activities in the eastern Pacific, researchers are seeing encouraging signs of recovery for the black turtle population, and it is now considered one of the 12 healthiest sea turtle populations in the world (see *SWOT Report*, vol. VII, pp. 20–31). The research that has accompanied those conservation efforts—including tagging of almost 12,000 females in Michoacán—has resulted in important information about the natural history of the black turtle, such as life history traits (age of sexual maturity, clutch size, reproductive and nesting intervals, and much more) and has also shed light on reproductive and foraging behaviors, adult migratory routes, reproductive ecology, conservation status, and hatchling and operational sex ratios.

The recovery of the black turtle is the result of an unprecedented regional effort involving both indigenous communities in Michoacán and fishing communities in the states of Baja California, Sinaloa, and Sonora in northwestern Mexico, as well as conservation activities in Guatemala and Costa Rica. Institutions that have steadfastly supported black turtle conservation in Michoacán over the past 35 years include the U.S. Fish and Wildlife Service, World Wildlife Fund (WWF-US), the Gladys Porter Zoo, Sea Turtle Inc., and Billion Baby Turtles.

The recovery of black turtles in Michoacán is an example of how community-based conservation is a key element in the recovery of sea turtle populations around the world. In particular, it would not have been possible without the valuable intervention of the Nahuas indigenous communities of Colola and Maruata. This is especially true of the younger generations, who adopted conservation as a way of life and have been committed to bringing the black turtle back to their communities as an important icon for their culture. ■

THIS PAGE: Black (green) turtles aggregate for mating off of Colola, Michoacán, Mexico. © CARLOS DELGADO-TREJO; AT LEFT: A black (green) turtle in the surf near Colola, Michoacán, Mexico. © CARLOS DELGADO-TREJO