



## Conservation Comes to a Deadly Shore

*In the Río Plátano Biosphere Reserve of Honduras, a small village works to save endangered sea turtles*

by Eric A. Greenquist and Lauri Boxer-Macomber

This article appeared in the April 2000 issue of *Américas* Magazine.

**Paulicarlo Casildo was a “huevero”:** a man who walked the beaches at night hunting the sea turtles that crawled ashore to lay eggs. A carpenter by trade, Casildo helped to feed his family by selling the eggs and meat of leatherback, loggerhead and other endangered sea turtles. Although for years he had noticed declines in the numbers of turtles that nested near his village, Casildo blamed the drops on illegal harvests by lobster and shrimp fisherman offshore.

Three years ago however, Casildo changed. “My children made me stop,” he says. His children had learned in school about the harm the *hueveros* were doing to sea turtle populations. “One morning, after walking all night, I brought home eggs and my children refused to eat them.” After that, Casildo says, “They would not leave me alone.”

Casildo still walks the beaches at night. But now he hunts the turtles to protect them

from other *hueveros*.

Casildo's reformation is a result of an unusual project in the Río Plátano Biosphere Reserve of northeastern Honduras. Since 1995, Garífuna, Miskito and Ladino villagers in Plaplaya, a community of 600 persons, have rescued more than 190 turtle nests and released over 6,000 hatchling turtles in the sea. In the process they have created one of the region's best educational laboratories, visited last year by more than 1,300 students from fourteen communities.

The Plaplaya project is small and faces many obstacles. But the hard work and dedication of the people of Plaplaya are changing attitudes on what, for sea turtles, had been a deadly shore.



**With an average annual income below US\$750 per person**, Honduras is the fourth poorest country in Latin America. Plaplaya is in one of Honduras' poorest and most isolated regions. The village has no roads, electricity or running water. Travel is by foot or dugout canoe.

The Garífuna and Miskito peoples of the region traditionally have survived through subsistence gardening, hunting and fishing. During recent decades however, almost every household has come to depend on a small cash income with which to buy tools, clothing and other necessities.

Most men now work as unskilled laborers

on foreign-owned shrimp and lobster boats, working at sea for months at a time.

For hundreds of years, sea turtle eggs and meat were staples in the diets of coastal villagers. During the past thirty years however, turtle populations declined sharply. Shrimp trawlers killed adult turtles in their nets; lobster divers captured them for food. In 1987 biologist Gustavo Cruz, of the Universidad Nacional Autónoma de Honduras, estimated that people killed 1,080 sea turtles each year in this manner along the

northern coast of Honduras.

The *hueveros* added to the losses. Until 1995, says Dora Casildo de Jimenez, who coordinates the Plaplaya project, “Almost 100 percent of the turtles that arrived to nest in this area lost their eggs to the hands of man.”

“People remember when they could walk the beaches at night and see dozens of turtles,” says Adalberto Padilla of MOPAWI, a nonprofit organization that helps the people of the region. “Now they must walk many nights to see just one.”

Although they were aware of the declines, the villagers of Plaplaya felt powerless to stop them. They could not control the men on the shrimp and lobster boats. Even if villagers had been aware of the damage being done by the *hueveros*, the Dirección General de Pesca y Acuicultura (DIGEPESCA), the Honduran government agency responsible for protecting sea turtles, had no law enforcement officers in the region. To the villagers, the loss of the sea turtles meant the loss of a part of their culture and a growing dependency on outsiders for subsistence.

In 1994 however, MOPAWI director Osvaldo Munguía and U.S. Peace Corps volunteer Bonnie Larson began looking for a way to save the turtles. “The Río Plátano Biosphere Reserve,” says Munguía, “is the largest and most valuable protected area in Honduras. The turtles are a vital part of the reserve.”

Since DIGEPESCA had no one in the region, conservation had to begin with local people. Munguía, Larson and others from MOPAWI met with community representatives in several villages. The interest of the school teachers in Plaplaya impressed them most.

**Unlike many sea turtle projects** that are run by nonprofit organizations and staffed by foreign volunteers, villagers manage all conservation activities in Plaplaya. Each night during the April - July nesting season, trained villagers, called *guardarecursos*, patrol an eleven-kilometer stretch of beach. They work in relays throughout the night, searching for turtles on the beach or evidence of crawls: the characteristic tracks in the sand that turtles make with their flippers. Their goal is to find the adults or newly-buried nests before the *hueveros* get to them.



When they find a nest, the *guardarecursos* move the eggs to a guarded hatchery at Plaplaya. There they re-bury each clutch of eggs in an artificial nest. It is an exacting process. They must not tip an egg during transport as this might cause the fragile yolk sac to separate from the inner shell

membrane. Each egg must be re-buried at the same depth as in the original nest because sand temperature affects the gender of the hatchling. Villagers who want to become *guardarecursos* must complete an annual training program.

Villagers guard the artificial nests twenty-four hours a day until the last eggs hatch in late August. Project members build and maintain the hatchery, protect the nests from small predators, collect and tabulate data, organize the training workshops and nightly patrols, manage project funds, give tours, and lead environmental discussions in other villages.

For their work, the more than 100 *guardarecursos* receive a small stipend from MOPAWI and The Nature Conservancy. They also receive food-for-work rations from the World Food Program through the Honduran government. Peace Corps volunteers provided organizational help. The U.S. Agency for International Development donated equipment and brought biologists from the U.S. Department of the Interior to help villagers with sea turtle conservation.

The visionaries of the project are the seven members of the Local Sea Turtle Conservation Committee. Throughout the year, these persons volunteer about fifteen hours each week to direct conservation and education activities.

Three years ago when Patrocinia Blanco became the committee treasurer she had no experience with bookkeeping or accounting. She had never written a check, opened a bank account or operated a calculator. Today however, she manages the project's \$7,000 annual budget with little supervision from MOPAWI.

"Some people say I am foolish to work for free," Blanco says. "They do not

understand. If we do not protect them, by the time our great-grandchildren are born there will be no sea turtles.”

Blanco is the type of person MOPAWI cultivates for roles in community leadership.

Because of their concern for the welfare of sea turtles, women in Plaplaya have been the project’s strongest supporters. In 1999, six of the seven members of the turtle committee, and 60 percent of project workers, were women.



Women also are the main beneficiaries. For one month during the turtle nesting season, 33-year-old Marlen Sacaza works five hours each evening as a *guardarecursa*: a job that pays \$60. A single mother of three, Sacaza uses this money to feed her family and to fund the secondary educations of herself and her eldest

son. In a region with almost no jobs for single women, and where theft and prostitution are on the rise, the turtle project has been, in the words of Sacaza’s grandmother, Enriqueta Ramirez, “a blessing.”

Many persons who work on the project first joined for the stipend and the food-for-work rations. In 1993, Honduras imposed a three-month closed season on the harvest of shrimp and lobsters to protect their dwindling populations. That left most families in the village without income during that period. In 1994 Honduras expanded the prohibition to four months, a period that coincided with the turtle nesting season. In a region with few jobs, the turtle project helps people through the annual closed season.

After joining the project however, many persons gain a sense of purpose. Increasing environmental awareness, teaching useful skills and creating a healthy community to sustain conservation activities are among the project’s goals.

“Throughout the developing world,” says Osvaldo Munguía, “successful conservation strategies address the development of local peoples.”

Persons struggling to survive cannot afford the luxury of conservation. Giving villagers tangible incentives, such as salaries, food, skills and knowledge, has been vital to the project’s progress.



Plaplayans also are proud of the involvement in the project of their oldest and youngest citizens. Instead of playing “ball” with sea turtle eggs, or mounting the backs of leatherback turtles as they did in their youth, town elders guard the hatchery and tell school children about the changes they have seen in the environment of

the region. Elder residents gain a sense of purpose and a means to contribute to their community; children learn about the trends affecting their lives. Because seniors also earn the food-for-work rations, older persons who no longer can do the hard physical labor that is characteristic of the region still contribute to their families’ well-being.

Local elementary school and kindergarten teachers developed an ambitious education program that focused on the conservation of sea turtles and the reserve. Activities include sculpting sea turtles from clay and sand, calculating egg mortality rates, accompanying the turtle patrols, conservation poetry contests, visiting conservation projects in other villages and the formation of a Junior Sea Turtle Conservation Committee. High school students and teachers began raising chickens as part of a campaign to convince villagers to eat chicken products instead of turtle products.

Student pride in their sea turtles spills over into their homes. “Fifth-graders scold their parents for bringing home turtle eggs,” says teacher Marielena Ramos. “Five-year-olds, before going to sleep at night, sing turtle conservation songs they learned in kindergarten.”

Although MOPAWI helps the project with small grants from outside donors, the turtle committee understands the need for long term funding. Plaplaya is too remote, the numbers of turtles are too small, and the community lacks many skills needed to comply with the exacting requirements of international donors. So the turtle committee and other residents of Plaplaya have taken advantage of local courses on ecotourism development provided by the Instituto Hondureño de Turismo, Peace Corps and the

Department of the Interior.

Though the project was almost unpublicized, 194 persons from throughout the world visited Plaplaya in 1998. Visitors paid \$73 in fees to accompany the nightly turtle patrols and donated another \$250. The project also earned \$370 from the sale of project T-shirts. Although this was only 10 percent of the annual operating expense, it was the beginning of financial stability.

Even though tourism to the region declined during 1999 in the aftermath of Hurricane Mitch, villagers in Plaplaya increasingly see benefits from tourism filter through the community. Local lodges and dining rooms, austere by most standards, serve increasing numbers of visitors. Village stores, artisans and canoe operators also benefit. For a fee, two women's groups do traditional Garífuna dances for outsiders. Such benefits reinforce the conservation efforts.

**Benefits to the sea turtles**, though limited, also are real. According to Bonnie Larson, during 1995 the project lost 64 percent of the nests in the patrol area to *hueveros*. Losses decreased as the patrols became more effective and as more villagers became involved or aware. During 1999, reports Dora Casildo, the project saved 74 percent of the nests in its area of patrol.

Unfortunately, the project faces significant biological obstacles. In 1996, U.S. Fish and Wildlife Service biologist David Bowman estimated that as many as 112 female turtles nested along the eleven-kilometer beach patrolled by the *guardarecursos*. Although the annual survival rates, and the ages at which sea turtles reach sexual maturity, were not well known, Bowman estimated that, to maintain the existing population, the project had to liberate more than 114,000 female hatchlings during a period equal to the breeding life of a female. This was because, due to natural and human predation, fewer than one hatchling in every one-thousand reached breeding age.

If a female breeds for thirty years, which is an estimated breeding life of loggerhead turtles, the Plaplaya project would need to liberate 3,800 female hatchlings each year to maintain the existing population. In 1999 however, the project rescued and released only 1,960 hatchlings of both sexes.

The situation however, is not hopeless. Last year 48 percent the leatherback eggs in

the hatchery and 57 percent of the loggerhead eggs did not hatch. Normally, only about 25 percent of leatherback eggs fail in a natural nest. Department of the Interior biologists continue to work with the *guardarecursos* to increase egg survival.

In addition, DIGEPESCA agreed to begin law enforcement actions in the area during the nesting season. In 1998 a DIGEPESCA officer arrested a man at Plaplaya for killing a sea turtle, the first such arrest in northern Honduras.

“DIGEPESCA’s presence has helped people to take the project seriously,” says Amado Suazo, the head of Plaplaya’s government. “We hope the agency’s presence will stop people from harming our turtles.”

Unfortunately, Plaplayans and local officials by themselves cannot save the sea turtles that nest on their beach. Under an international convention, all shrimp trawlers must use turtle exclusion devices (TEDs) on their nets. TEDs allow a sea turtle, captured by a shrimp net, to escape before it drowns.

However, Bowman reported, “All [local] adults with whom I spoke regarding the use of TEDs by shrimp trawlers expressed the opinion that TEDs were not used to any extent.”

Villagers also told Bowman that lobster divers still commonly capture and kill turtles for consumption or sale. These killings must stop if the turtle populations are to survive.

**Although the Plaplaya project** barely appears on the “radar screen” of international sea turtle conservation efforts, its scope, capabilities and influence grow each year. The spread of knowledge and benefits through Plaplaya and to other villages increasingly convinces the *hueveros* to end their destructive harvests. After working at Plaplaya, villagers in the nearby community of Cocolito Tunki began their own turtle patrols. Two additional communities plan to begin patrols this year.

The project also is motivating some village men who work on the shrimp and lobster boats to end the illegal killings of adult sea turtles.

Says Jesus Natividad Casildo of Plaplaya, who captains a lobster boat, “I cannot allow my men to eat turtle meat for dinner knowing that my family and neighbors are guarding turtle nests in Plaplaya.”





**Fifty years ago**, North American biologist Aldo Leopold wrote, “One of the penalties of an ecological education is that one lives alone in a world of wounds.”

Knowledge is awakening villagers in Plaplaya to the wounds around them. But none of these persons is alone. Their turtle conservation project has generated a sense of purpose and a new spirit of

community. Though they still face significant obstacles, the legacy of their work could span the generations.

*Eric A. Greenquist is a wildlife biologist with the U.S. Department of the Interior, Bureau of Land Management in Eugene, Oregon. He has led the Department’s technical assistance program in Honduras since 1995.*

*Lauri Boxer-Macomber was a Peace Corps volunteer who, with her husband, Ethan, lived in Plaplaya during 1997 and 1998 and helped several conservation projects in the Río Plátano Biosphere Reserve. She currently is a law student at the University of California at Davis.*