

# Scientists Study and Protect Turtles at Hatchery



Tico Times Photos/Robert Goodier

**LETTING GO:** Right to left, PRETOMA researchers Tanya Buxton, René Cortés, David Palange and Mireya Gracia, with volunteer Silvia Ruíz at far left, release olive ridley hatchlings to their fate, wondering which, if any, will survive to breeding age and return.

**BY ROBERT GOODIER**  
Tico Times Staff

**PLAYA CALETAS** – On a moonless night, the beach was uniformly gray, tree trunks were indistinguishable from the sand, and spotting turtle tracks seemed unlikely.

They are a dark line of disturbed sand from the water's edge, up the sloped beach – you'll see them if they're there, David Palange said. Palange is a turtle biologist who works with the Costa Rica-based Marine Turtle Restoration Program (PRETOMA), and has left his own tracks on this stretch of coast most nights for the past five months.

He prods through the sand with a pole around the bed – the telltale disturbed sand marks around the nest – looking for eggs, then carts them covered in their antibacterial goo back to camp in a backpack. When he stumbles across a turtle, he measures its

shell and clips metal tags to its flippers before it returns to the sea.

"You put a stick in it, poking, feeling for a soft spot, then you dig it up," Palange said. "At first I would spend 40 minutes looking for a nest; now it's just about two pokes."

No signs of turtles on the first leg of the patrol.

Hordes of olive ridleys and hundreds of massive leatherbacks don't swarm this beach like they can at Playa Grande, on the northern Pacific coast, but Playa Caletas, near the southwestern tip of the Nicoya Peninsula, is considered the second most important nesting site for leatherbacks in the eastern Pacific.

"Here we get about 15 turtles a night. Studies show that solitary beaches like this have a much higher hatch-out rate than those where thousands come in a night. But poachers hit these beaches harder because nobody cares about them," Palange said.

After turning back at the river, a distant flashlight blinked on and off – either another patrol had spotted a turtle, or the new volunteers were goofing around.

He picked up the pace to one nearly impossible to match. "It's about a kilometer away," he said, and might have added, "meep, meep!" because he vanished in his own cloud of dust. The flashlight signal persisted.

It was a turtle. Some of the young scientists from the PRETOMA camp, most recent college graduates, huddled around an olive ridley, frustrated.

The turtle swished her back flippers pathetically in the sand, trying to dig a hole for her eggs, but some biological mystery kept her from backing up her efforts with any force.

They dug a hole for her under her back end, but she seemed onto the trick and refused to lay. Finally, after stringing a tape measure along the length and width of her shell, and clamping a steel tag onto her



**COMING out:** A newly hatched olive ridley emerges from the sand.



**TURTLEWATCH:** PRETOMA scientists measure and tag an olive ridley that failed to properly dig her nest.

upper flipper, the team left her and opted for sleep before the next patrol at daybreak.

Seeing the failed mother, instead of one of the scores of successful egg-layers that plod up that beach, was both a rarity and fitting.

Rare, because so many turtles abandon their future offspring to their fates on that beach; olive ridleys lay 300-600 nests every season, each laying an average of four nests. Far fewer leatherbacks come – this year only two have arrived – and each lays about six times, some up to 10 or more.

Fitting, because the turtle's reproductive failure was an example of the environmental minefield her species confronts from conception to adulthood.

Studies show that only one in 1,000

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# PRETOMA Researchers Serve as Turtle Lifeguards



Photos courtesy of PRETOMA

**PRECIOUS cargo:** A leatherback deposits her eggs into the sand. Highly endangered, these giants' numbers have decreased by 90% worldwide over the past 20 years.

hatchlings will survive – most are picked off by birds as they make their first run to sea after hatching, and by underwater predators when they reach the sea.

"We don't know if our efforts increase that number," Palange said. "We give them a head start – we protect them from predators on the beach, but once they reach the water they're on their own."

A day at the research camp confirms the hazards that threaten the beasts, even before they hatch. Duds – infertile eggs or partly formed turtles that died, some invaded by insects, others for causes unknown – are found in every nest.

But the hatch-out rate this year is a whopping 80%, double that of last year, thanks to the addition of a roof of palm leaves over the hatchery, Palange believes.

This year, PRETOMA scientists use glorified thermometer boxes to take the temperature of the nests.

"The temperature of the sand affects the sex ratio," Palange said. "If it's above 32°C (90°F) they'll all be females, and if it's below 29°C (84°F) they'll all be males, so we want to keep it between the two to keep an equilibrium."

The hatchery is a rectangle of rough-hewn posts sunken in the sand and wound with wire mesh to keep out prowlers. The nests' animal enemies include dogs, skunks and poachers. In spite of the protection, some raiders have entered – raccoons, judging by the footprints – and dug up a few nests, leaving eggshells as evidence.

The scientists are volunteers who come from around the world to work for a few months on the beach; others who work in the camp are hired from nearby towns.

René Cortés is one such case, hired to help in the hatchery and to talk with people about the dangers of poaching.

"Every day you learn something more, and that stays with you as a life experience," Cortés said.

He talks with people who visit the beach on the weekends, and with those from his own community, some of whom he knew were egg poachers when he was younger. Most are receptive, he said, and agree the eggs should be protected.

The turtles that come here are all endangered species, but the leatherback, the largest of all of them, is the most at risk.

"The most important thing about this beach is that leatherbacks come here," Palange said.

Back at PRETOMA headquarters in San José, beach projects director Alexander Gaos rattled off the figures: a 90% drop in the leatherback population worldwide in the last 20 years, and in the Pacific, 95% of them have been destroyed.

Now, scientists estimate there are only 2,500 nesting females in the eastern Pacific. Researchers have studied the Caletas turtles for only the last three years, but the numbers from Playa Grande and surrounding beaches are staggering. More than 1,300 leatherbacks arrived in 1989;



**UNDER cover:** Nests are monitored under the hatchery's palm-leaf roof, an addition believed to be responsible for the 80% hatch-out rate this year – double last year's.

only 68 arrived in 2002.

Eyes light up when the leatherback is mentioned at this camp. Mireya Gracia, a biologist from Spain, said they ran two kilometers with stomachs full of rice and beans when they heard a *baula*, as it is called in Spanish, had arrived.

"We took the eggs before she covered them," she said. "She lays them in a trance and doesn't notice anything."

Days at the camp are spent checking the nests and lounging in hammocks recovering from nights broken by two-hour hikes in search of turtles. This beach is wild and mostly left alone by people. The scientists have contended with scorpions, ants, flies and an errant pig that ran through the camp. Crocodiles lurk in the estuaries hemming in the beach.

"This is pure Costa Rica here," U.S. biologist Tanya Buxton said from her palm-shaded lookout on the sand and waves.

When the nests hatch, the babies nudge their miniature turtle beaks out of the sand and are gathered together until they are all released to their likely doom in the sea.

As they approach and enter the water, they whip into a plodding and swimming frenzy, propelling themselves far out to sea. There, they drift along currents and digest the yolk of the egg they had absorbed into their bellies while still inside.

"You look at all the little hatchlings scurrying to the water and wonder which,

if any, will live to come back to lay eggs here," Buxton said.

Anybody can visit the camp and take a night hike with the scientists looking for turtles. The olive ridley season ended in December, but the leatherbacks could continue to lay eggs through February. Donations are welcome.

PRETOMA raises most of its money through volunteer programs at its research camps. For information, to volunteer or to make donations, call 241-5227, fax 236-6017, e-mail [info@tortugamarina.org](mailto:info@tortugamarina.org) or visit [www.tortugamarina.org](http://www.tortugamarina.org).



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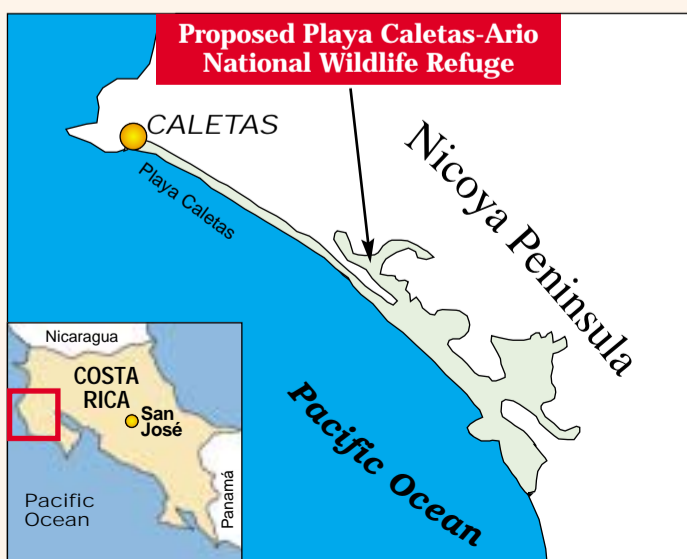
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## Turtle Scientists Push for New Wildlife Refuge



Tico Times/Roy Arguedas Arias

**SCIENTISTS** consider the remote Playa Caletas, a beach on the Nicoya peninsula, the second most important nesting site in the eastern Pacific for the giants of all sea turtles, the critically endangered Pacific leatherback – which is one reason scientists at the Marine Turtle Restoration Program (PRETOMA) are pushing to make the area a protected national wildlife refuge.

The proposed Playa Caletas-Ario National Wildlife Refuge would include an offshore protected area where large-scale industrial fishing operations would be banned. The refuge would encompass river, wetland and mangrove habitats – unique in the scientists' opinions – that host threatened and endangered plant and animal species.

Conservation organizations, government representatives, landowners and members of the community have discussed the proposal. PRETOMA and the Ministry of the Environment and Energy (MINA) have distributed informational pamphlets to residents to inform them about the possible changes.

The proposal is now in the management-plan phase, which includes defining the area of the refuge and conducting biological and feasibility studies, MINAE said in a statement. For information, call PRETOMA at 241-5227, or e-mail [info@tortugamarina.org](mailto:info@tortugamarina.org).