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Correction Appended

Hatching a Comeback ;Once on the brink of extinction, the Kemp's ridley sea turtle is back after a 20-year conservation effort

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RANCHO NUEVO, Mexico - Tennessee Williams once wrote a painful description of the perilous nest-to-ocean run made by baby sea turtles.

"The sand all alive ... as the hatched sea turtles made their dash for the sea, while the birds hovered and swooped to attack," the playwright wrote.

"They were diving down on the hatched sea turtles, turning them over to expose their soft undersides, tearing the undersides open and rending and eating their flesh."

Over the course of their 10 million years of existence, sea turtles have been vulnerable.

But things got even tougher for one species, the Kemp's ridley, when cattle trucks began shuttling onto the beaches of Tamaulipas in northeast Mexico and hauling off their eggs by the thousands to be sold as aphrodisiacs.

The population was depleted even further by the nets and hooks of commercial shrimpers and fishermen, who killed many as an unintended consequence of their harvesting efforts.

All that pillaging foretold near-extinction for the Kemp's ridley sea turtle by the 1950s, until an unprecedented effort by Mexican and U.S. conservationists, and later by fishermen from both countries, began in 1978 on the shores of Tamaulipas and South Texas.

Scientists believe the Kemp's ridley, the most endangered of five sea turtles that habitually swim U.S. waters, has almost reached sustainable population levels, though they hesitate to claim victory too soon.

"To say that this problem is solved, that the turtle is saved, would be a big mistake," said Patrick Burchfield, program coordinator for the U.S. Fish and

Wildlife Service, likening the move to delist the species to "fumbling the ball on the 1-yard line and losing the game."

He has all-too-vivid memories of finding turtle shells and skulls scattered behind the sand dunes.

Burchfield, a zoologist and deputy director at Gladys Porter Zoo in Brownsville, has held his voluntary position with the sea turtle recovery program for almost 20 years. He and other scientists spent long vacations and nights working to see the program come to fruition.

On a recent weekend, Burchfield, a reptile lover since childhood, made the rugged five-hour trip to Rancho Nuevo, Mexico, the main nesting grounds of the Kemp's ridley sea turtle, in his road-worn pickup.

He was ecstatic that the turtles have built more than 3,500 nests at Rancho Nuevo this year, the largest nesting in the recovery program's history.

But he was worried that some people might interpret that as an unequivocal sign of success.

"That's not enough," Burchfield said. "We need to see this project through to the point where we can downlist the species. We need thousands of turtles nesting in a single (daylong) event."

By nature's standards, Burchfield doesn't believe that's asking too much. An amateur film shot at Rancho Nuevo in 1947 showed an arribada - or arrival to lay eggs - of an estimated 40,000 female Kemp's ridley sea turtles in a single event.

By 1978, he said, scientists were lucky to see 900 or so turtles nest at Rancho Nuevo in an entire season, which typically lasts from March to September.

That 1947 film, contrasted with the devastation of the sea turtles a decade later, inspired Brownsville residents Dearl and Ethel Adams to start moving turtle eggs to South Padre Island in the 1960s in an attempt to "imprint" baby turtles on a second nesting beach to deliver them from mass destruction at Rancho Nuevo.(***see correction***)

Through a process not fully understood by scientists - whether it is water or sand chemistry, geomagnetic orientation or water currents - baby turtles imprint on their natal beach and return to lay their eggs.

Over five years, and numerous ineffective trials, the Adamses hatched and released 1,227 baby sea turtles. Dearl Adams, along with Rancho Nuevo residents, also successfully lobbied the Mexican government to set up a conservation program for the Kemp's ridley sea turtle in 1966.

The United States listed the Kemp's ridley as endangered in 1970 and joined the program in 1978, making it the longest-running conservation program between Mexico and the United States. It may also end up being the most successful.

Biologists from Mexico and the United States run the program by counteracting the savagery of natural forces that Tennessee Williams captured so well in his 1958 play "Suddenly Last Summer.

Sea turtle egg hunts

At Rancho Nuevo and six other camps along the 300-mile picturesque northeastern coast of Mexico, student volunteers patrol miles of beach on ATVs, seeking nests that have been laid or are being laid by female turtles.

When they find one, often detected by the distinctive track left by the turtle, they transfer the 100 or so eggs to a protected hole near the camp dug with the same care shown by the mother.

The end result looks like a garden of prospective crops arranged in linear fashion and marked in colorful tape.

It is guarded throughout the 50-day period before hatching, said Toni Torres, a student volunteer at Rancho Nuevo whose skin was burnished to deep cocoa from weeks spent on the white-hot beach.

As students ward off gulls, coyotes and coati-mundis (a raccoonlike animal), they also place a wire corral around the nest 20 days before hatching and mosquito netting 10 days before hatching to ward off parasitic flies, Torres said.

They have to be careful not to change the amount of light the nests receive for the first 30 days or the sex of the babies will change.

"Their sex is determined by their incubation temperature," Burchfield said.

Torres said the surface of the nest begins to collapse as babies begin their journey to the surface.

Swimming into the sunrise

Once the babies hatch, typically in the wee hours of the morning, they are released immediately under the care of volunteers. If they hatch during the day, they are held until dusk for release in a different location each time to avoid predators.

The sluggish journey of the baby turtles to the sea, in the last orange glow of sunset, bears little resemblance to the bloody struggle described by Williams, though an occasional ghost crab or gull has to be shooed off.

In the water, the babies have to fight off sharks, snook and snapper and, as they grow to adulthood, fishhooks and the nets of shrimpers. But the program at Rancho Nuevo doesn't concern itself with those sea threats, Burchfield said.

Other conservationists are working to set aside the Padre Island coast out to 17 nautical miles as a marine reserve closed to shrimp fishing, said Teri Shore, campaign director for the Sea Turtle Restoration Project, located near San Francisco.

Proposed regulations by the Texas Parks and Wildlife Department to close an area from "Fish Pass" south of Port Aransas to the Texas-Mexico border out to five nautical miles are already under fire from shrimpers and seafood industry entrepreneurs.

Also protective to turtles, specifically juveniles, are proposed fishing gear restrictions, some of which limit the size of nets that can be used near the upper Texas shore, said Mike Ray, director of field operations for the coastal fisheries division of the Department of Parks and Wildlife.

Hearings on those regulations are being held this summer.

Fishing for support

While the state of Texas and conservationists feel the fishing industry has not done enough, fishermen in the United States and Mexico said they have been supporting the Rancho Nuevo program for the past five years, ideologically and financially.

"Our overall concern is the health of the marine environment," said Les Hodgson, a Brownsville fisherman who was former president of the National Fisheries Institute, a seafood industry group. "If we lose a species, any species, they're all interrelated in some form, and that's serious."

Because turtles often drown when tangled in shrimpers' nets, federal regulations now require "turtle excluder devices" on the nets, but conservationists claim as many of 30 percent of shrimp fishermen do not use them properly.

"We see turtles dying, washing up along the shore whenever shrimping is under way," Shore said. "And whenever shrimping ends, the number of turtle deaths drops to nearly zero."

While Shore questioned the financial assistance provided by the fishing industry to Rancho Nuevo, Burchfield said it has totaled hundreds of thousands of dollars.

"This project can't be sustained at the present or improved levels without outside sources, because our federal support is less than half what it costs to do the project. So industry has become a critical partner," said Burchfield, who receives about $115,000 annually from the Fish and Wildlife Service for a recovery project with operational costs of $239,000.

Padre Island nests

The Adamses' dream of creating a second major Kemp's ridley nesting beach on Padre Island as a hedge against disaster in Tamaulipas has continued in a separately funded project at the Padre Island National Seashore in Corpus Christi.

From 1978 to 1988, scientists packed 22,507 turtle eggs from Rancho Nuevo in Padre Island sand and transported them to the national seashore. About 13,000 hatched and were raised in captivity for about nine months, then released.

At least nine have returned to lay their eggs at Padre Island, said Donna Shaver, U.S. Geological Survey station leader at the national seashore. In 1999, 16 nests were found in South Texas. Female turtles lay an average of 2.4 clutches of about 100 eggs a season.

Though the number of returning turtles is relatively small, Shaver believes scientists have achieved their objective of successfully imprinting baby turtles.

"This project was undertaken to try to increase the Kemp's ridley nesting here as a safeguard for the species in case a catastrophe happens in Mexico," she said. "The number nesting here has been climbing the past five years, and we hope it will continue.

"This is a magnificent animal that we hope the people in the United States will also get to see nesting on their shores."

Mexican scientists, who said a marine sanctuary during the turtle nesting season already exists at Rancho Nuevo, expressed optimism about the success of the Tamaulipas recovery program.

Educating children, tourists

Conservationists are working to develop La Pesca, a traditional vacation spot with a minor nesting ground north of Rancho Nuevo, into an ecotourism attraction. It would help to divert attention from the main nesting area at Rancho Nuevo, said Patricia Luevano, director of the turtle recovery program for Tamaulipas.

Luevano was at La Pesca recently for a children's program about the Kemp's ridley sea turtle, called the tortuga lora in Spanish. About 40 Mexican children each had a baby turtle to release into the sea.

"This is a camp for protection, conservation and education," Luevano said of La Pesca, which has had 123 turtle nests this year. "We show the children the responsibility they have in preserving the turtles. ... The moment they come into contact with them, put them into the water, they fall in love with them."

But how does one persuade people to expend the time, effort and money to save a species they may never see?

Burchfield mulls that question as he travels through Tamaulipas, which was once blanketed with a unique combination of temperate and tropical flora and fauna.

While Williams depicted the sea turtle's struggle to survive as a poetic representation of civilization's losing battle against the savage, in Tamaulipas it is civilization that has taken its toll on what were once wild forests now cut into pastureland for cattle.

Burchfield said that when he first came to the Mexican state to hunt snakes for the zoo - before his involvement with turtles - the forest canopy hung thickly over the rutted 13-mile dirt road to Rancho Nuevo.

One time, Burchfield said, he was startled by the sight of a rustic campesino on the road near a hut. The farmer was skinning an ocelot that was killing his chickens. Suddenly, a coral snake slithered by.

Sightings of ocelots and coral snakes are now rare.

"That's just a real vivid image," Burchfield said, keeping his blue eyes fixed on the road ahead. "It's hard for me to come back here now. The turtle is just a small part of it - a part that we've been able to save."