PLU
132
21.95

Between Two Rivers:

Stories From the Red Hills to the Gulf

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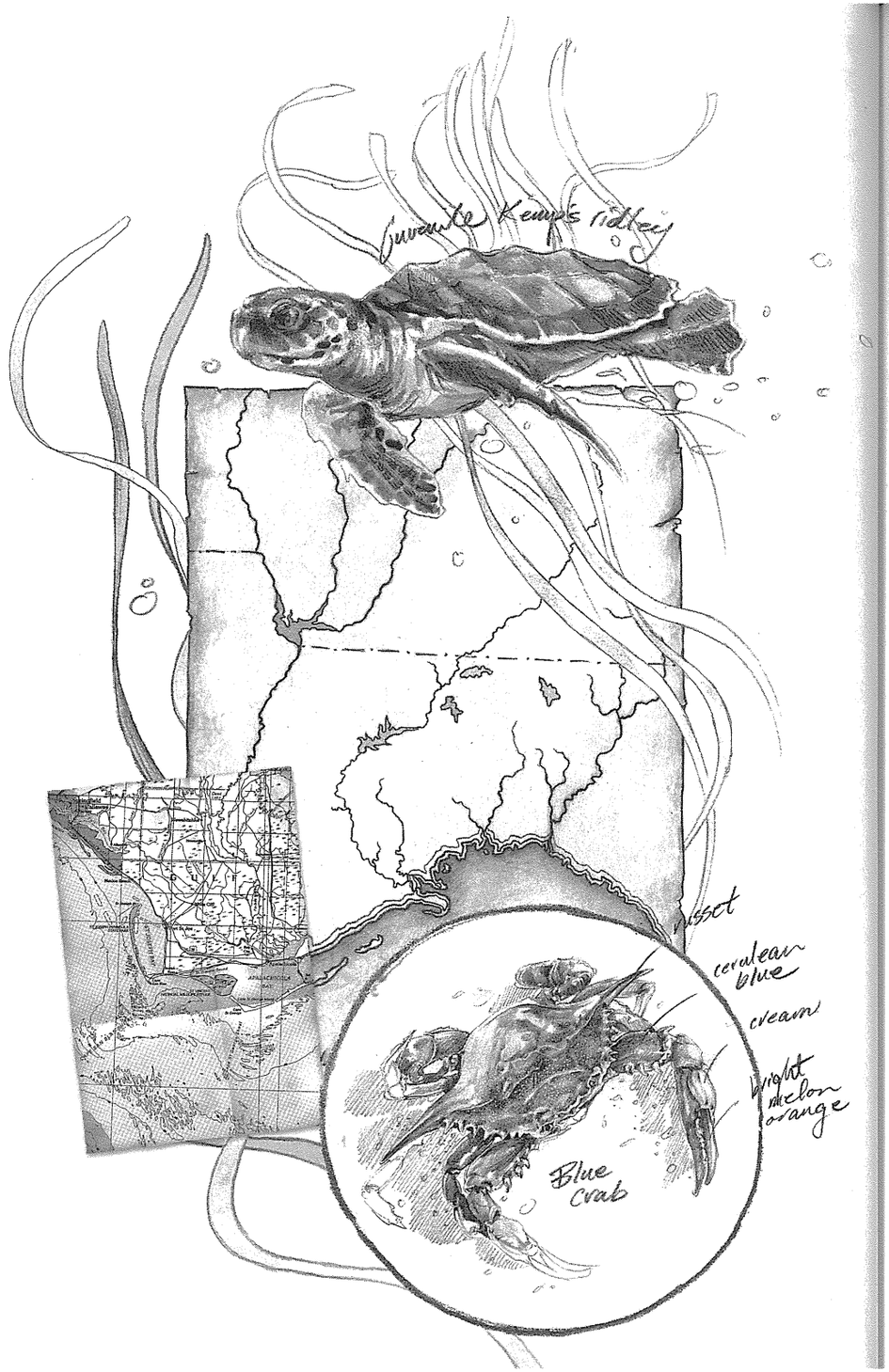

Catching the Shrimp, Calling the Turtle

Anne Rudloe, PhD

As I paddled a kayak out from the shore at St. Joseph Bay on a warm summer morning, a bald eagle hung like a pinpoint in the blue forever overhead. As always with eagles, it was so high that I had to look hard to be sure it really was an eagle and not an osprey. Anchoring the kayak, I pulled a diving mask over my face and rolled into the water. Sunlight swept over the underwater meadow in waves, a mesh of golden fire created by surface ripples and wind, a few feet above. Four species of flowering grasses grew together there, creating food and shelter for hundreds of species of fish and invertebrates. Scallops, blue crabs, pink shrimp, clams, mullet, trout, and redfish are the best known, but they are only a small part of the fauna. Red sponges and red sea anemones accentuated the green and white seascape. Red starfish with white polka dots wrapped their arms around the bases of the plants like children hugging their mothers. Blue-eyed hermit crabs scrambled over the swaying green blades of grass like squirrels in trees, hanging on as passing waves rocked them back and forth. Inside empty shells, dwarf octopuses hid, waiting for darkness to hunt the hermits.

At the edge of the white sand bars that lay scattered throughout the grass bed, endless schools of transparent mysid shrimp, each no longer than a baby's fingernail, hovered. There must have been literally billions in the bay. Each shrimp faced into the current, darting back and forth to seize even smaller

creatures that swept past, crustaceans too small for a human eye to see. The shrimp intermingled freely with huge schools of equally transparent, equally small baby fish.

I swam back to my anchored kayak, reached into the boat and grabbed a net designed to collect the smallest things visible to one's eye. Catching uncountable numbers in a few minutes, I poured them into a tray of water for a closer look. Most of the mysid shrimp turned out to be one species, and, miraculously enough, it was *Mysidopsis bahia*, the species I needed. This mysid species was used in water quality monitoring research and I was trying to set up a mysid farm at our aquarium to grow them in an aquaculture facility for other scientists. The right species was easy to recognize because these animals have a black Y-shaped mark between their eyes. Mixed in with the *bahias* were a few other mysid species. Some had huge black eyes and looked like tiny raccoons. Others had elongated, needle-shaped bodies. What did these rarer mysids do differently from their explosively abundant cousins?

Five or six other species of tiny shrimp were mixed into the catch as well. One was bright green with lemon-yellow eyes, while another species could change colors from green to brown to match its substrate. That one stayed on the grass, its needle thin body aligned with the blades, along with tiny baby seahorses and pipefish that lurked in the jungle, ambushing the shrimp where grass bed met open sand.

I picked out the shrimp I didn't need and let them go. The rest went into an ice chest full of seawater to take back to the lab for breeding stock. I climbed back into the kayak and headed back toward shore as a powerboat sped past. It could get to more distant places, places I couldn't reach in one afternoon with my slow pace and limited time. But the people in the powerboat missed the nuances: the way the wind was gusting and dying and gusting, the blazing sun in each drop of water as it blew off the paddle blades. Now two eagles soared overhead. They banked and turned, soaring higher and higher, white heads and tails flashing and disappearing and flashing again. After a few minutes the sky absorbed them and they were gone.

The next day I was on the water again, this time on a little turtle fishing boat as it raced past the green marsh into the Gulf of Mexico near Panacea. In the bright morning everything seemed created anew in this instant, like the very first morning of the world, still sparkling fresh from Creation. The newly risen sun turned the calm sea to glittering gold; snowy cumulus clouds floated

over our tiny heads, and there was glory to just being alive in such a blue and golden morning.

On this day, we were fishing for Kemp's ridley sea turtles. Unlike the previous day's almost incomprehensible abundance of tiny mysid shrimp, Kemp's ridleys are the rarest and most endangered of the seven species of sea turtles. Their only nesting beach in Mexico hosted some forty thousand nests a year in the late 1940s, but due to years of egg harvest and drowning of adults in fishing nets, the numbers have now plummeted to only a few thousand.

Kemp's ridleys range around the Gulf and Atlantic coasts, feasting on the abundance of blue crabs that live in the marshes, bays, and sea grass meadows. How the turtles get to these coasts from their hatching beach is one mystery, and how they return to breed after they mature is another. If we caught one of these small sea turtles, it would be tagged and released. If, one day, we captured a turtle with a tag in its flipper, it would tell us something about where these young turtles go, how fast they grow, how long they stay around, where they travel. This slow, hard work would provide a few more details of how this endangered species uses its world—details that might help conservationists preserve it from extinction.

This day's fishing site was next to a huge oyster bar off Piney Island, several miles down the coast. When we got there, the falling tide was racing around the end of the bar, and in the calm lee, small menhaden swirled in huge schools. They looked like moving patches of raindrops hitting the water, and as a school approached, we listened to the pattering sound of them breaking the surface. Hundreds of gulls, cormorants, terns, and pelicans wheeled and screamed, feeding on the concentrated fish. Other birds, already full, rested on the oyster bar, motionless in the morning sun. In deeper water a little farther offshore, jacks and sharks leaped in their own dance of life and death. As we set out three hundred yards of net, a porpoise played alongside, watching our every move. It looked as if we might be the best thing that had happened for the porpoise all morning.

Waves slapped the bow of our boat as we pulled it along the top of the turtle net. Fishing for turtles takes a lot of patience. On many other days of fishing for this project, we caught nothing at all. On this day, we sat with the net for twelve hours, checking it every thirty minutes to ensure that if a turtle got caught, it wouldn't drown before we reached it. Most of the time we sat and watched the sea or read. We didn't talk much. No conversation could go

on for that many hours, so after a while we quit trying and just relaxed. I did a lot of meditation.

The frantic swarming of menhaden and birds lasted for about an hour until the falling tide forced the fish schools to move farther offshore and the birds scattered. The sun rose higher in the sky, and the sea and marsh were silent under the weight of the heat and the glare. Not only was there nothing happening, but it was inconceivable that there ever was or could have been.

The tide fell, until by noon the sea grass began to be exposed on the tide flats. Then the place came to life again, this time with mullet. The mirror surface of the grass-streaked shallows broke into splashes and ripples everywhere as mullet rolled and fed. Ten or twelve ospreys hovered and circled overhead. They dropped from the sky like arrows, sometimes seizing a mullet, sometimes pulling out of the dive at the last second.

When it was time to check the net, we pulled our skiff along the corkline by hand, lifting it up, looking for the flash of white in the murky water that meant a ray, a shark, or a turtle. The mesh was so big that anything smaller passed through, and if a shark or a ray got caught, we released it. Most of the time the net was empty, and I realized in an experiential way I never had before that this once common sea turtle really was close to extinction. The empty net was far more real than all the statistics in all the scientific studies.

As I sat there watching the water beside the net, I thought a lot about the disappearance of so many of earth's other species. Preventing extinction is one of the primary issues in ecology today. This green and blue planet, shining in the sunshine, is the only one we know is alive. Life is divided up into millions of different species, so many that after centuries of work we still don't have an accurate count. It has been ruthlessly pruned back in repeated mass extinctions in the past—the most severe, approximately 230 million years ago, is estimated to have resulted in the loss of 75 to 95 percent of all species on earth. Eventually, after millions of years, the survivors rediversify and new species fill the vacancies.

Today we find ourselves in the midst of another mass extinction. Songbirds are disappearing, due mostly to forest destruction both here and in the tropics. Frogs and salamanders are dying all over the world from disease and perhaps from increased ultraviolet light and the ozone hole. One-third of North America's freshwater fish species are biologically endangered or threatened, mostly owing to habitat destruction. While the causes of earlier

mass extinctions are the source of heated scientific debate, there's no doubt about what's causing this one—us.

Well, so what? Do we really need every last frog and bird that came with the bargain? What good are they anyway? Besides, we don't need to worry about it—the planet will take care of itself. It's just another mass extinction. While it's true that millions of years after we're gone, the planet will heal itself, that's not what the argument is about. The issue is really about us: what kind of world we want for ourselves and our grandchildren and their grandchildren. Will we leave them their full heritage of the living beauty of this planet?

Even if we assume that these myriads of other species must be judged only by their usefulness or lack of it to humans, do we know enough to decide what's worth keeping? The total number of species may be some 3 million. But some recent estimates put it closer to 30 million. Three or thirty? If we don't even know that, how can we possibly pretend to understand how the planet works, which species are essential and which aren't. Despite the efforts of some of humanity's best thinkers, we don't have a clue.

Tagging turtles, growing mysid shrimp—these are only a few of the many nuts and bolts efforts being made by people all over the world to preserve what's left. The work with the mysid shrimp might contribute to a less polluted ocean, one in which sea grasses, scallops, mysids, and sea turtles could someday thrive again everywhere as they did here in these north Florida coastal waters. And this work might also contribute to a world in which humans would again remember their interdependence with other species.

Stone Age hunters, when they stalked game, had a wealth of knowledge of the animals' habits, behavior, and movement patterns, knowledge that they used to track the game effectively. But they did more. A hunt was often preceded by a period of meditation and purification, and in the hunt they tried to let go of thinking, to merge themselves with the world, to let the animal know their need. Then the animal would come and compassionately allow it to be taken so that the people might continue to live. The hunter and the hunted were bound together in mutual relationship and respect that most people today have forgotten.

It was time to pull the net for the tenth time of the day. We had chosen the most likely tide and the spot that we knew from previous fishing was in the best turtle habitat. We had built a net that would fish efficiently, had talked

to other fishermen about where they'd spotted turtles. But when the rational, analytical mind had done everything it could to ensure catching a turtle, when the long silent waiting began, we found ourselves settling into the ancient still meditation, asking the turtle to come and allow itself to be caught. And when it did, we gave thanks for the gift of the turtle, tagged it, and sent it on its way with respect.

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