

**TRANSCRIPT****INTERVIEWEE:** Donna Shaver, Ph.D.**INTERVIEWER:** David Todd**DATE:** October 12, 2021**LOCATION:** Corpus Christi, Texas, by phone**TRANSCRIBER:** Trint, David Todd**SOURCE MEDIA:** MP3 audio file**REEL:** 4072**FILE:**KempsRidleySeaTurtle\_Shaver\_Donna\_CorpusChristiTX\_12October2021\_Reel4072\_NoiseFilt  
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**David Todd** [00:00:01] Good afternoon, my name is David Todd, and I have the very good fortune to be with Dr. Donna Shaver this afternoon and with her approval, our plan is to record an oral history interview for research and educational work on behalf of a nonprofit group called the Conservation History Association of Texas. And for a book and a website for Texas A&M University Press. And finally for archiving at the Briscoe Center for American History, which is hosted at the University of Texas campus here in Austin. And she, of course, would have all rights to use the recording as she sees fit. And I just wanted to make sure that that is what you expected and that it's OK with you.

**Donna Shaver** [00:00:52] Yes.

**David Todd** [00:00:54] OK, well, let's, let's get started then. It is October 12th, 2021. It's about 320 or so in the afternoon. As I said, my name is David Todd. I am an Austin. And again, we are fortunate to be conducting an interview with Dr. Donna Shaver, who's a zoologist and chief of the division of Sea Turtle Science and Recovery for the National Park Service at Padre Island National Seashore in South Texas. She's also a member of the Kemp's Ridley Sea Turtle Working Group and IUCN Species Survival Committee Marine Turtle Specialist Group, and serves as the Texas coordinator of the Sea Turtle Stranding and Salvage Network. That's just a short summary of her work, but in these and other capacities, she's worked a sea turtle for over 40 years. She is based in South Padre Island. And so this interview is being done remotely.

**Donna Shaver** [00:02:02] North Padre Island North, excuse me, North Padre Island. And I am, I live in Corpus Christi, Texas.

**David Todd** [00:02:10] I see. Thank you for correcting that. I apologize.

**David Todd** [00:02:16] So today we'll be talking about her life and career, and then focus in on the Kemp's Ridley Sea Turtle and her understanding of views of its decline and the efforts that she's been involved with to protect and restore it.

**David Todd** [00:02:37] With that introduction, I think we might just start with a few questions. And the first one that we typically ask is about your childhood, and if there might have been any people or experiences that were important in building your interest in working with animals and sea turtles in particular?

**Donna Shaver** [00:03:00] Well, for my childhood, my first interest in animals, it goes back to my grandfather. And he loved nature. He, we lived in, in the city, but there were wooded areas

very close by and he had prize-winning African violets. And then after he did many years of those in his basement, which was filled with, with rows and rows of shelving with lights and, and grew these violets. And then he switched over to having tanks of fish, including some salt water. He had a pet bird. He fed the squirrels in the yard. He fed the birds. And it, it just being around that, seeing his interest in these animals, just got me started in, in my fondness of them, and also going out into the wooded areas near my house and enjoying nature there, were important in that, I believe.

**David Todd** [00:04:27] And what area of the country did you grow up in?

**Donna Shaver** [00:04:31] I grew up in upstate New York - Syracuse, New York. And I went to Cornell University in Ithaca, New York, for my undergraduate degree, which is in a beautiful area of the country, with gorges and abundant bird life. The Cornell Laboratory of Ornithology is there, and that's where I took ornithology and which was quite an opportunity to learn from these world-renowned ornithologists, and go to the collections, and to that lab for field trips. But that, that interest was sparked before I even got to Cornell, and it just grew as I was there.

**David Todd** [00:05:21] Were there any particular teachers or classmates or other mentors at Cornell or later in your education?

**Donna Shaver** [00:05:33] Well, there were tremendous teachers at Cornell - experts in various fields of biology and wildlife. At that younger age, I didn't know how famous they really were. It wasn't until later on, and I'd started reading the literature and seeing more books, that I understood just how famous they were and published and well known.

**Donna Shaver** [00:06:08] Cornell was a larger school, and it was more difficult for most that you could you to get to know most of your teachers. But I did have four herpetology. I had Dr. Harvey Pogue and he was very influential and very much encouraged my career working with the Kemp's ridley sea turtle and temperature-dependent sex determination. I got to know him after I'd been down to South Texas for my first year of work with the Kemp's ridley, went back and had herpetology with him. And oh boy, I just became so interested in in that class. And he took a personal interest in me and kept in touch with me for several years.

**Donna Shaver** [00:07:00] And then for my master's degree, Dr. Allen Chaney, I got to meet while on some of the field work as a SCA intern. My first year here at the National Seashore, I got to meet him, and he took on a lot of graduate students and became my major professor. And he was the major professor to the who's who of South Texas - Texas Parks and Wildlife, U.S. Fish and Wildlife Service, and other university positions throughout the Southeast, of, of people who had been professors. Many of those are retiring now as he had a long career of a lot of students over the years that really respected his knowledge and his leadership. If you spelled a scientific name wrong with just one letter on a word on a test, the answer was wrong. And he was very strict, high standards, but a lot of field work. So it was a good complement for the large class sizes, more impersonal work at Cornell, with the smaller size classes over at Texas A&I, which later became Texas A&M - Kingsville. So those two professors were influential.

**Donna Shaver** [00:08:28] And then for my Ph.D., of course, Dr. David Owens was my major professor, and he was a big influence through my whole career, and I kept wanting to be one of his students and it just didn't work out for a long time. I ended up getting my, both my Ph.D. and my master's degree while I was working. The master's, I only worked during the summers, but the Ph.D., I was working full-time the whole time I was getting my Ph.D. degree.

So I was very fortunate to have those, those men who were really supportive in my interest in herpetology, and sea turtles, and wildlife.

**Donna Shaver** [00:09:17] And I didn't have female mentors, though as far as teachers, I, of course, looked up to Dr. Sylvia Earle very much from her reputation and Jane Goodall. And so they were idols, but not mentors.

**David Todd** [00:09:38] I see, sort of at a distance.

**Donna Shaver** [00:09:40] Yes.

**David Todd** [00:09:40] I'm going to have to take just one short break. I have a nosebleed.

**Donna Shaver** [00:09:45] Oh, no, goodness.

**David Todd** [00:09:46] But I'll be right back with you. So hold on just a moment.

**David Todd** [00:10:08] My apologies. What a nuisance. OK.

**Donna Shaver** [00:10:11] Oh, goodness, I hope they don't happen to you a lot.

**David Todd** [00:10:13] Oh, they've happened to me for many, many years. It's apparently it's something with redheads. We have that. I don't know. Thin skin, I guess. So my apologies again.

**David Todd** [00:10:29] You were telling me?

**Donna Shaver** [00:10:30] No problem.

**David Todd** [00:10:30] Sylvia Earle and and, you know, sort of her role as a mentor from a distance. And Jane Goodall, did you say?

**Donna Shaver** [00:10:39] Well, idols, I would say - females that were working in field biology, marine biology. So again, not having female role models as professors for my education, so they were, they were important in that role as a female doing this kind of work. And again, when I first started out, that was 1980 and it still was, women were still becoming integrated into the workplace. And when I first started at the Seashore, I had a man say, "Oh, the women in the Park Service, taking the jobs of the breadwinners of the family." And I was, well, wait a minute. I'm my breadwinner.

**Donna Shaver** [00:11:24] And, and my father, the day I graduated Cornell, he was really worried. And he meant well. But you've got to think of the time, and he just didn't see how I could make a living out of this and said, "Well, maybe I ought to go to secretarial school so I could get a job." And I said, "No. Let me try what I, I aspire to do and, and we'll see how it goes."

**Donna Shaver** [00:11:55] So luckily, they, they took a chance and had faith. But it was unconventional because my older brothers were all in electrical engineering, a very different field. Went to Syracuse University, not Cornell, and then traipsing down to South Texas. Although I did follow my brother, who'd later moved on to get a, he has a Ph.D., he's 12 years older and got a Ph.D. in electrical engineering and computer science, and was setting up

research labs for Texas Instruments and had a job in Dallas. So I thought, Well, I'll, I'll come down to Texas and I'll get to see my brother a lot. Well, I learned Texas is a big state, and just because we live in the same state, doesn't mean you get to see somebody a lot and, and indeed I don't get to see him very much. But it did, it was one of the factors that attracted me to thinking about going to Texas.

**David Todd** [00:13:00] I see, well, we've had a chance to talk a little bit about your formal education, and I I'm always curious if the narrators in our project had any pieces of the popular culture, books or films or TV shows or any, any sort of other inspiration that might have helped them on their path to work with wildlife.

**Donna Shaver** [00:13:30] Well, I forgot to mention that I had little turtles as pets. Back in the day when you could still do that, and then they became outlawed, of course, and it's much more humane to not sell it in the pet stores. But I was little and I didn't know any better. And I love those little turtles.

**Donna Shaver** [00:13:50] And I also saw, I would watch Wild Kingdom. And I loved that, and that was inspirational to me and I, at Cornell, I learned about threatened and endangered species, and I developed a real fondness for wanting to try to help recover threatened and endangered species, species that had been impacted by human activities, and I felt we had an obligation to try to do what we could to restore them.

**Donna Shaver** [00:14:26] I was a wildlife biology major and back at that time that was focused mostly on hunting and fishing. And I was interested on the, the endangered species part of wildlife, even though I didn't have much formal education at Cornell about it. But there was a little bit, and I was, I thought this would be something really interesting to do.

**Donna Shaver** [00:14:52] And then when I read about the different opportunities across the country, that talked about positions with the Student Conservation Association with Forest Service, and Bureau Land Management, National Park Service, U.S. Fish and Wildlife Service, I read about the program at Padre National Seashore, working with the Kemp's Ridley Turtles and then with some bird work as well and some ghost crab survey work.

**Donna Shaver** [00:15:22] But that really caught my eye - that sea turtle work, that threatened and endangered species work. And when, in that little paragraph that was there, in the description - the world's most endangered sea turtle species. Well, I applied and I got it, and that's how I started with my work at Padre Island National Seashore.

**Donna Shaver** [00:15:47] And then people said, "Well, you could work with loggerheads now." And I said, "I can't. I have learned about the plight of this species." And it was in such dire straits at that time, where people thought it might already be too late to save it, that I thought, "How can I go work with a species that's much less imperiled when there is this need here?" And so I said, "I want to, I want to make a career of trying to help save the Kemp's ridley turtle."

**Donna Shaver** [00:16:27] And the odds were astronomical against me because rarely can you stay at one park and make a career out of it. But I was very fortunate. I worked really hard. I tried to let my work speak for itself, and let people see what a hard worker I was, and different opportunities opened up. After working as a seasonal, my first permanent job to get my foot the door as a permanent employee, was as a fee collector / dispatcher for nine, which I had for nine months before I transferred back into my field. I didn't know how long I would

be in it, but it was, I knew and probably, you know, I'd have to take some jags along the way to get to where I wanted to be, zigs and zags, because it's very difficult to get that first permanent job.

**Donna Shaver** [00:17:20] But because there was a freeze on federal hiring, I had taken the, back then, you had to take a test to get on the register for hiring. And I took, I had already taken the test. I was up at the top. The chief ranger knew how hard I worked. And this was probably the last job that shy Donna from Syracuse, New York, that was too shy to take speech class, and ran and dropped it, and took scientific writing instead. That shy Donna from Syracuse would want to do, to talk on the radio, and go talk to all the people that are camping to collect your camping fees. But I did it because I kept the goal in mind of wanting to get back there to try to work with the Kemp's ridley turtles. And I was able to and then different opportunities opened up along the way that allowed me to have that career ladder. So I was very lucky and worked, but worked hard too.

**David Todd** [00:18:19] Yeah. That's clear. Well, can you tell us a little bit about your first encounter with a Kemp's Ridley sea turtle?

**Donna Shaver** [00:18:31] Well, my first day on the job, I actually saw a stranded green sea turtle, which was very rare to have strandings be found washed ashore. As my boss told me, he said he just could not believe it, that here was a stranded turtle. So it was a green turtle, another species, but one that ended up in very prominent in my, in my work over time as well. I didn't see a Kemp's ridley really until I saw the first Kemp's ridley hatchlings, and, and probably dead Kemp's ridley washed ashore, stranded.

**Donna Shaver** [00:19:16] So I don't remember exactly the first dead Kemp's Ridley, because there used to be a lot of stranded, large loggerhead and Kemp's ridley turtles that were found. They were, typically, due to incidental capture because of shrimping activities, before turtle excluded devices were mandatory. So, you know, they're pretty, they're pretty much in bad condition and smelly and very distasteful for most people.

**Donna Shaver** [00:19:55] But I found them interesting and actually my first published study was the gut contents of wild and Head Started Kemp's ridley turtles, where I looked at the gut contents from more than a hundred dead turtles that had been necropsied and examined the contents and quantified them. Because very little was known about the Kemp's ridley during the early years of this work.

**Donna Shaver** [00:20:26] So but when I first saw that, when I saw the first Kemp's ridley hatchlings, boy, that really hooked me. They're adorable.

**David Todd** [00:20:35] What's striking about that?

**Donna Shaver** [00:20:37] Well, there was a lot of interest in them, which I had, you know, I'd never been exposed to anything like this - all this media attention and newspaper, you know, photos here, my photo was on the front page of the Corpus Christi Caller-Times, this intern. Whoa! It was so, it struck me that it was so high profile. The community obviously was embracing this work, came out to see releases even way back then in 1980. And people from the community helped us catch the little hatchlings in the surf so that we could then bring them to the Galveston National Marine Fisheries Service Lab to be reared in captivity for nine to 11 months had started. So it struck me that so many people were interested in it, yet it was just my boss whose office was in Flower Bluff, which is just on the edge of Corpus Christi. And

so on the North Padre Island, there was a seasonal employee and myself, so, it was just a very small operation, and we were left in charge of these incubating eggs.

**Donna Shaver** [00:21:57] And what did I know about incubating sea turtle eggs, between my junior and senior year of undergraduate school at Cornell. But this fellow had a lot of other things that he was doing, and he was supposed to be writing up his master's thesis, which I don't think he ever completed. And he had all kinds of other activities to deal with. And so he entrusted us, and so we were learning procedures as we went along. And what a great opportunity it was for me at that age to have that access and that level of responsibility! And then to see the little babies come out of these egg shells and see the process - not like bird hatching, but so slow. And the little hatchlings just very feebly putting their head out and then their front, one of their front flippers out. And it could take up to four days for them to crawl out of the eggshells and then enter their very active state called the "frenzy." And that's when we had to release them when they were in this frenzy.

**Donna Shaver** [00:23:11] So it was a big learning curve to to figure out the conditions needed for their good care. And, and we implemented things that directly improved the survival of those eggs, and then to see the little ones take the trek down the beach, and instinct take them right towards the water, and swimming in the surf, and bobbing down to take those breaths under the water, and just knowing what to do, being hardwired knowing what to do. And driving them up to, well, at that time, those first years, we took, we, when we brought them back, we counted them. And then they went to the Naval Air Station to be flown out by the Coast Guard, to Galveston. And again to think of, "Wow, this is so important that the Coast Guard is driving them in these fancy planes."

**Donna Shaver** [00:24:14] You know, again, I was just a small, you know, I came from the city, Syracuse, New York. I'd ever been exposed to anything like that. So. That was very striking. It left a big impression.

**David Todd** [00:24:29] Well, clearly, and I can understand why. Well, so you're, I think, telling us a little bit about the, the beginnings of the Head Start program, if I'm following you. You know, it might be helpful just to give a little bit of context and background about why this, there was this investment with, you know, the Naval Air Station, the Coast Guard, and the National Marine Fisheries Service, and National Park Service in Head Start. Maybe you can just tell us kind of a general outline of the Kemp's ridley sea turtles life history. It's a fascinating story. I'm sure you can tell it well.

**Donna Shaver** [00:25:18] Well, for many years, the location, the main location of where Kemp's ridley turtles nested, was unknown to biologists. Dr. Archie Carr, the grandfather of sea turtle biology, and Dr. Henry Hildebrand, from Corpus Christi, actually a neighbor of Robert Whistler, the chief naturalist at Padre Island National Seashore, living only a couple of doors away. They were both trying to find out where this species nested and were looking around at different beaches.

**Donna Shaver** [00:25:58] Dr. Hildebrand went down, had heard about a film that was made by a Mexican engineer in 1947 that showed an estimated 40,000 Kemp's ridley turtles nesting on this small stretch of beach, about 14 miles long in Tamaulipas, Mexico, called Rancho Nuevo. And these mass synchronous emergences, called arribadas, or mass arrivals. And the engineer, the, the old story, the old story was that, oh, he just put the film away in a drawer. Well, no. In fact, when Dr. Thane Wibbels has gone back and unearthed a lot of historical facts to put them in the accurate context and to tell the real, the truth about some of the history.

**Donna Shaver** [00:27:00] And the Mexican engineer actually tried. He knew that this was a very important observation, and he tried to get it publicized by Disney, Time magazine, Life magazine. And he just couldn't get anyone interested in it. So indeed, he eventually did put it away, but not after trying very hard to get publicity for it.

**Donna Shaver** [00:27:27] And it wasn't until 1963 that Dr. Henry Hildebrand heard about that film, went down into Mexico, found the engineer, saw the film, and knew that Aha!, here the location was known of the primary Kemp's ridley nesting beach for this species. He showed it at a herpetological conference. Dr. Archie Carr, this was in Austin actually, right where you are, Austin. And Dr. Carr flew over, saw the film, was very impressed and mystery solved.

**Donna Shaver** [00:28:08] But that was just step one. We knew where they nested, but it showed the mounding of the eggs on the beach for collection and sale and market as supposed aphrodisiacs. And for years, it's thought that virtually every egg that was laid, was taken, and sold, until they thought, I guess, that it was boundless, you know, there was no end to the abundance that was going to be there. But they crashed the population from that overharvest, and the loss of incidental capture to the shrimping of juveniles and adult.

**Donna Shaver** [00:28:55] The population plummeted so that by the time biologists began to go to that beach to see what turtles were nesting, they found that the numbers in these arribadas had declined vastly already by the mid '60s.

**Donna Shaver** [00:29:11] So Mexican biologists began to protect the nesting turtles and the eggs. with armed Marines. It took it very seriously. Sometimes the U.S. looks down their nose at some of the conservation efforts undertaken in other countries, but they took this seriously and they did a good job. They worked hard to try to save this species. But despite their efforts, the numbers slipped and slipped and slipped, just declined.

**Donna Shaver** [00:29:45] And we know now that it's going to take years before conservation efforts are going to make a difference because of the long age to maturity for the species. It's 10 to 15 age, years of age, probably on more on the high side of that now.

**Donna Shaver** [00:30:01] So the numbers kept declining, and Dr. Hildebrand's very concerned about this. Well, the first published record of Kemp's ridleys nesting anywhere in the world was at Padre Island National Seashore before it was established as a National Seashore. So Kemp's ridley's a native nester to the park.

**Donna Shaver** [00:30:21] So he talked to Robert Whistler about forming a secondary nesting colony of Kemp's ridley turtles at Padre Island National Seashore as a safeguard against extinction. Don't have all of your eggs in one basket. Let's have this safe area in the U.S., where Kemp's ridley could nest and be protected, so that if a political or an environmental catastrophe was to occur at this main nesting area, the eggs, the, the beach, the turtles could be protected and helped form this seed to repopulate the species.

**Donna Shaver** [00:30:58] Well, so, Robert was all in. He put this project in the 1974 Resources Management Plan for the National Seashore, got in touch with the regional director of the National Park Service, who found colleagues from the U.S. Fish and Wildlife Service and other agencies to join in on the development of an action plan to try to save the species as a

last ditch effort because it was feared that unless something was done dramatically different, that the species was going to be lost forever, in the blink of an eye, just one human generation.

[00:31:38] And I tell people I wear around my neck for inspiration my graduate, my father's graduation ring from the Naval Academy. He graduated in 1947, the year that that film was made with a robust population. And I graduated from Cornell in 1981. I came down here in 1980, and it was thought that it might already be too late to save the species. One generation - him to me - it was almost lost due to the short sightedness of man.

**Donna Shaver** [00:32:13] And I decided I wanted to dedicate my career to trying to help save this species that was almost lost due to humans. And I knew, somehow I knew back then, it was it was going to take a lot of sacrifice. And I made a commitment that I was going to make those sacrifices that it would take with personal time for friends and do the things that girls do with shopping and movies and all that. That I was going to do that because the Kemp's ridley deserved it. Humanity, the American public, the world, deserve to have this magnificent species as part of our heritage and our fauna. And so that's what I've tried to do with my career, through the ups and downs.

**Donna Shaver** [00:33:03] And so they, they started this, this program in 1978, of which a portion of the effort to save the species was this experimental project to form a secondary nesting colony of Kemp's ridley at Padre Island National Seashore, where it's a native species, where the nesting habitat, the turtles, the eggs could be protected. To form this, this safeguard. And the turtles were there's a process they went through - I'll describe it in a minute.

**Donna Shaver** [00:33:37] But another, the biggest aspect of the work, of course, was trying to save the species at that main nesting beach in Mexico. So the U.S. joined into the efforts down in Mexico and sent for many years, sent American students down there to work on the nesting beach with the Mexican nationals that were doing such a great job, but needed an influx of equipment and additional personnel to increase the effort that could be conducted to, to try to help save the turtle.

**Donna Shaver** [00:34:13] And, and so that work started in 1978 by the pioneers. And I said I got there as soon as I could. I got there in 1980 and then joined in. And I've tried to carry it forward since taking, I've participated since 1980, and I took leadership of it in 1986, so, at the Park. And others led other aspects down in Mexico, of course.

**Donna Shaver** [00:34:40] And so for our project that, the, we try to experimentally imprint the turtles to Padre National Seashore in hopes that it would cause them to return at adulthood. Nobody knew if it would work. It was a conservation emergency, and a lot of people think it wouldn't work, thought it wouldn't work.

**Donna Shaver** [00:35:01] And so eggs were incubated in Padre Island sand, that was sent down to Mexico, that the eggs were packed into, never being allowed to touch Rancho Nuevo sand. They were caught as the turtle laid them. They get into a trance-like state. They're oblivious to what's going on. The biologist could take the eggs unbeknownst to the turtles, pack them in Padre Island sand in Styrofoam boxes.

**Donna Shaver** [00:35:24] And then they were shipped to the National Seashore during the incubation period, which was a whole 'nother set of challenges because of the permitting

required to get the eggs out of Mexico and into the U.S., and permitting delays that would happen and et cetera.

**Donna Shaver** [00:35:45] And then the hatchlings were, after they hatched, they were allowed to crawl down the beach, enter the surf, where they were, so that exposed to Padre Island sand and Padre Island surf as hatchlings. They were captured in the surf and then counted. Later we started weighing and measuring each one and then sent them to the Galveston National Fishery Service lab, where they were then reared in captivity for, in general, nine to 11 months, which was called Head Starting.

**Donna Shaver** [00:36:15] It started about the same time as the program for the kids, and with the same kind of thought process behind it. Let's give them a boost in life, so when they get out there, they'll have a better chance of surviving. And that better chance is achieved by allowing them to grow to a larger size prior to release so that they can avoid most predators. The toll on the hatchlings is very large because they're bite size to all kinds of predatory fish in the surf zone. But these yearlings, basically they're only vulnerable to sharks and then, of course, to human activities. And so that continued from 1978 to 1988.

**Donna Shaver** [00:36:57] And then after that time, turtles were Head Started that were brought directly from Mexico as hatchlings, with the thought that would help compensate the Mexican population for the loss of the eggs to the Padre Island population so that those turtles were returned back to Mexico in greater numbers than if they would have just been released as hatchlings. But in fact, the turtles did not read the book, and most of those published records have been in Texas.

**Donna Shaver** [00:37:28] So I've got publications that go into the records of the turtles that have been found, and some have come back from the project. And the first records that I reported, I had a hard time publishing because some people didn't believe it. Some people didn't want to believe it because by that time, Head Starting had kind of gotten a black eye because some of the officials from the agencies didn't want that process to be misused by the shrimpers as, as an excuse to, well, let's Head Start more turtles, so we don't have to use TEDs in the wild. And they knew that it was important to protect the turtles in the wild, so TEDs were essential, so Head Starting got, got kind of thrown under the bus and declared as bad, even though there weren't data to support that conclusion just to get it out of the way as being an excuse.

**Donna Shaver** [00:38:23] And what I've tried to do is to just put the facts out, the data out, and what the records were, not saying, you know, "I'm not giving you a declaration on whether it's good, bad or evil, so to speak. But just here's what we found", because I do believe we've also got a scientific obligation to try to find these turtles so that we know what we did, and a humanitarian obligation.

[00:38:49] Because I thought I was asked to do, to start the first patrols in 1986 to look for the turtles coming back from the project, as well as turtles from the wild stock that were nesting in sparse numbers at that time. But still, intermittently, you know, periodically, we'd get a Kemp's record because when they come up on the beach, again, they enter a trance-like state and well, they could be hurt by human activities. And if we cause them to nest here, well, we owe it to them to protect them if they do. And so a lot of my time has been spent trying to find the funding to be able to get out there to do just that, to protect them, as well as document them for science. Because we want to know what this project, in case others might in the

future want to try to use some of those procedures for a different species in a different area to try to help recover them.

**Donna Shaver** [00:39:47] I see. OK. Well, you know, just to wind this back a little bit, you're saying that the, the Kemp's Ridley sea turtles were probably the most endangered rare sea turtle in the world, and I think you mentioned that part of the reason was because of the harvesting of eggs down at Ranch Nuevo. But in passing, I think you mentioned this, the problem with the incidental catch with shrimping and can you explain a little bit about that problem and, and the TEDs that were developed to try to mitigate it.

**Donna Shaver** [00:40:29] Sure. One of the largest shrimping fleets in the whole United States was out of Port Isabel, Texas, and there was, when I first started in 1980, there was heavy shrimping effort off the Texas coast, including South Texas, and the boats could come close to shore and we'd regularly see them doing that. And we found, when we'd see shrimpers, we'd see dead turtles washing ashore on the beach.

**Donna Shaver** [00:41:03] But this was very controversial, and it wasn't just Kemp's ridleys being affected, but it was also loggerheads. And it was also the East Coast of the U.S. And there were some very vocal state coordinators of the stranding network that were real advocates for something being done by the state and federal agencies to try to put deflection devices into these shrimping nets so that the turtles could be shunted out while still capturing the shrimp. Because a lot of these state agencies have jurisdiction over both the threatened and endangered turtles and the fisheries industries. So they wanted to find win-wins for both. And actually, the first turtle-excluder devices were developed by a shrimper out of the East Coast - Mr. Boom. And he worked with the sea turtle people for many years to help develop turtle-excluder devices, transfer that technology over to NOAA that did TED testing.

**Donna Shaver** [00:42:12] And eventually, laws were, were passed mandating turtle-excluder devices in shrimping nets up in Atlantic and Gulf waters, but very controversial. There were blockades of ports. There were death threats to agency officials trying to get these, these laws instituted.

**Donna Shaver** [00:42:37] And the first year, as a part of the compromise to the Gulf fleets, from the Gulf states, where were really powerful and vocal at that time, fought it vehemently, was to have a smaller opening size for the net in the Gulf than there was in the Atlantic. So that meant that the, the larger turtles couldn't get out of our nets in Texas, whereas they could in the Atlantic areas, making even adult-sized Kemp's ridleys vulnerable, especially if those TEDs were installed improperly.

**Donna Shaver** [00:43:19] So over time, and TED regs went on and off, and TED rules were suspended after hurricanes, and compliance was, was sketchy in the first years. And they'd find, they'd catch shrimpers with the TEDs tied shut. And there would be, during the Cuban refugee crisis, industrious lawbreakers would, you know, break the law while they knew that the Coast Guard was over there dealing with those Cuban refugee crisis and not looking to turtle-excluder devices. This was before Parks and Wildlife and the state agencies in the Gulf got involved in the law enforcement work for it.

**Donna Shaver** [00:44:09] So it was very controversial, but eventually that opening size was made larger, but to what they call a leatherback TEDs, allowing the leatherbacks and all the other species to be able to get out. And so after that, so what this this does is, is this allows the, and some of the best data, because it was denied by - the shrimpers would deny. There's a

book out by the, what's called the Center for Environmental Education, back then, the name was changed. Now I believe that's Ocean Conservancy now. But it was called "Delay and Denial" about the shrimp industry because they, they delayed and they denied that they caught turtles, but they did.

**Donna Shaver** [00:44:51] And the data from Texas that I was collecting, as the state coordinator showed this big build-up of lots and lots of strandings before the annual Texas closure, and then when it opened up again. So from, there's an annual closure from May 15th to July 15th off the Texas coast, up to 200 nautical miles. It's been in effect for many, many years. And it was for shrimp, not, not developed for turtles, but turtles benefit. But you would see this trend year after year, and it was hard to dispute, when you saw that relationship that, yes, indeed they were catching turtles.

**Donna Shaver** [00:45:30] But the problem has been since turtle-excluder devices are now mandatory and there is now a time area closure after our work with Parks and Wildlife for about a year. Is they revised a shrimp fishery management plan, and it's seasonally closed from December 1st to May 15th, up to five nautical miles from Corpus Christi Fish Pass down to the US/Mexico border. Because we still were getting a lot of dead adult Kemp's ridleys found. And it was thought because the boats could get so close to shore. So this pushes them a little further off from shore, and it gives the shrimp a nursery ground, so when they get out there, they're more marketable, worth more money when they go to harvest. So finding one of these win-wins, but it was a compromise where they used my satellite tracking data - nesting data and stranding data - to find a solution that was the shortest amount of time in the smallest area that would protect the most turtles. And since that's been enacted, our numbers of nests found on the Texas coast has increased dramatically.

**Donna Shaver** [00:46:37] And that's one of the biggest and most significant accomplishments Mike Gray from Parks and Wildlife thought he had in his career, and that I feel like I had too, because year after year it pays dividends, dividends for the survival of these adult females that are going back and forth from the primary foraging grounds of the northern Gulf, down to the primary nesting beach in Mexico and then back to the foraging grounds. And then those that are using our South Texas beaches for nesting.

**David Todd** [00:47:09] I see. You know, it's intriguing to me, how you and others were able to mark and track the Head Started sea turtles, as well as those that hadn't been in the program. I imagine that this monitoring program, as you said, was, was not simple or cheap. Can you talk a little bit about how, how you, you know, sort of accounted for where the turtles were, when they came ashore and so on?

**Donna Shaver** [00:47:46] Well, we, so there was blue-ribbon panels that were set up to try to determine, you know, how the success of Head Starting, but they were started before we even had any confirmed returnees. I began our patrols here in '86, and the first confirmed returnee from the program wasn't found until '96. But so we were supposed to look for these turtles to come back and look for the coded - there's different types of tags they were they were marked with, just prior to them being released during the course of their Head Starting right before they were released into, most of them, into the Gulf, most of them off the South Texas coast.

**Donna Shaver** [00:48:35] The one type, the most successful type of tag was a living tag, which was like a skin graft that was used starting in the 1982 year class. And this is where a piece of the bottom shell was taken out. A piece from the top taken out, and the piece from the bottom was glued into the surrounding shell surface of the bottom, providing a permanent light

identification marker on the darker background of the top shell. And the location of that living tag was married to different scutes, the plates on the top shell to designate the different year classes or years in which the turtles were born.

**Donna Shaver** [00:49:09] So that was the most successful, but all of them were tagged with just metal flipper tags, but those have a limited lifespan in the wild. The turtles, also starting about 1983, were marked with what's called a coded wire tag, which is an injectable piece of wire that you have to have a magnetometer to read, and each one of those was about \$4000, which was a lot of money to have people all up and down the coast outfitted with those to be able to check for those on those on the turtles, because not all these tags were visible. The living tag would become covered up with algae. The metal tag would fall out and PIT tags, these glass-encapsulated tags like are used in the pets now, those weren't used in the turtles in still really the Mexico imprinted Head Start. Very few of the Padre Island imprinted Head Starts, those supposed to come back to our beach, received those tags.

**Donna Shaver** [00:50:14] So and I've got a publication that talks about all the difficulties in finding the turtles coming back from this work. But so we had to outfit people with these magnetometers. So I wrote a lot of grant proposals trying to bring in the money to outfit the different programs that would.

**Donna Shaver** [00:50:33] So I started the patrols on the Texas coast, and next that came on line was 1999 for Boca Chica Beach, and then South Padre in about 2000, I believe, was when it started. And then in about 2002 or 2003, then the Upper Texas coast started doing patrols because the first Mexico-imprinted Head Starts were found - most of their records on the Upper Texas coast and most of them were released actually off of Galveston.

**Donna Shaver** [00:51:08] And so my hypothesis, and it's in my publications, is that they, their period for imprinting may, may be important for when they take those bearings in the marine environment as they swim off to freedom, even if that may be delayed by nine to 11 months, because many of them went back to the Galveston area to nest. And they'd been released in the Gulf waters up there. Whereas the turtles released in South Texas did not go up to Galveston.

**Donna Shaver** [00:51:46] So, but you know, there's more research that needs to be done. These are our initial hypotheses, but anyway.

**Donna Shaver** [00:51:54] So we go out and we look for these nesting turtles, and it's not easy because we have to patrol from dawn to dusk, seven days a week during the nesting season. And Kemp's ridley is the smallest and the lightest of the sea turtles, so the tracks blow away quickly within just a few minutes. The turtle could still be on the beach, and her in-bound tracks are already blown away. Some people who propose, "Oh, do one patrol a day," imagine how effective that will be at finding nests? It won't be effective at all. They are only on the beach for about 45 minutes during nesting. They enter a trance-like state where they're oblivious for about 15 minutes of the 45 minutes. So you can't really, you can't really look for the nesting turtle on the beach, you've got to look for the tracks, because the turtles blend in with the sand and vegetation.

**Donna Shaver** [00:52:47] They tend to nest on windy days, because the tracks blow it quickly. They also tend to nest in association with the passage of fronts, when these, these strong winds of 40 miles per hour come through and torrential rainfall and hail, and people

want to run for the hills. And these turtles want to come out nest then. And if you're not out there in, you know, protected safety, trying to still keep up some coverage, you can miss them.

**Donna Shaver** [00:53:19] And everything about it is, is challenging. And these huge areas that we patrol, we've got five projects that cover nearly all the Texas Coast Gulf beaches. That's long stretches of beaches that are patrolled all day long. You know, back and forth, hoping to see the nesting. If you want to see the nesting turtle, you have got to criss-cross about every 45 minutes, or the turtles going to slip in and out in between your patrollers. And so to conduct our, our marker capture tagging, for looking for the tags for these turtles, and tracking the results over time, it's the only long-term continuous marker capture program for nesting Kemp's ridley females conducted anywhere in the world.

**Donna Shaver** [00:54:08] In Mexico, they did a marking study for many years, but as the population was increasing and it looked rosy like, "Hey, we've recovered the species", they stopped tagging, and concentrated on moving the nests because there were so many nests. It was challenging just to get that done before the, there's a membrane that attaches to the inside of the eggshell after 24 hours, and if you move them after then, it can dislodge that embryo from the egg shell and cause the embryo to die. So you've got a limited window to move those eggs safely unless you use very, very methodical care to move them, which we do, we can do safely, but is not feasible when you've got thousands of nests. So, so they stopped tagging.

**Donna Shaver** [00:54:59] But we found out in 2010 the, the population stopped doing what the population, the modelers predicted it would do, and it has since been fluctuating in numbers and we don't know what the long-term trend is right now. And so I've got a good friend who said, "Donna, you helped save the Kemp's ridley turtle once, you can do it again." I said, "Wow! I'm a lot older than when I first set sight on that goal 40 years ago, but I'll do what I can."

**Donna Shaver** [00:55:31] So it's not saved. It's still in trouble. The future is unknown for it. One biologist thinks, Charles, Dr. Charles Caillouet thinks it may be at carrying capacity, the juveniles may be at carrying capacity in the juvenile foraging area. And then there's been some other researchers out of A&M that thought, "No, it's going to return to exponential trajectory." We don't know.

**Donna Shaver** [00:55:59] So we need to keep gathering data, and the monitoring of nests is our only way we know to gauge the population levels right now. And so if we, if something happens with our monitoring effort on the National Seashore of North Padre Island, and that's the epicenter of Kemp's ridley nesting in the U.S. - more than half the Kemp's ridley nests in the U.S. are found in our area - if our program is diminished, dismantled, then we lose that dataset and we lose our ability to track with those nesting numbers and we lose that safeguard that we are. We're not there yet, but we're on our ways.

**Donna Shaver** [00:56:43] Dr. Pat Burchfield, as has been so, has pointed out to me multiple times that we can't back off. We are, our aid with that may not be hypothetical. It may be needed because one of the, one of the problems is, that hadn't been foreseen by the pioneers, is climate change. Incubation temperature determines the sex of the turtles, warmer temperatures producing females. Some beaches are now so hot they're producing 100 percent female. And I mean, beaches for other species, I don't mean for Kemp's. But that problem is starting to show up and the temperature determines the viability at some beaches for other species. Those beaches are now too hot and the embryos are dying.

**Donna Shaver** [00:57:32] And another problem down at Rancho Nuevo could be the drug cartels. The work there occurs because of a gentlemen's agreement with the drug cartels. And at any time, the biologists could be kicked out, in which case that population does not have protection any longer.

**Donna Shaver** [00:57:51] And the seed that we've started in South Texas will be critical if we want to help save this species for mankind, for future generations, so they can enjoy this majestic animal nesting on the beach and the little hatchlings crawling down the beach, entering the surf, going away with our hopes and dreams that they too will help lead to the recovery of the population.

**Donna Shaver** [00:58:20] You know, speaking of South Padre Island, I think one of the things that you've been involved with for many years and that's, I think, very popular in the community and with, with visitors, is this set of releases. Can you talk about those and, and the kind of reaction you get from laypeople and kids and just people who are unfamiliar with this issue?

**Donna Shaver** [00:58:46] Sure, sure. My program is on North Padre, but there is a great program on South Padre also, and between North and South Padre that's a vast majority, and Boca Chica Beach, that's the vast majority of Kemp's ridley nests found in the U.S. are right, right there, with the documented historic nesting range extending from Mustang Island down through both of our areas.

**Donna Shaver** [00:59:13] So we've held public releases of Kemp's ridley sea turtle hatchlings at the National Seashore since we began releasing hatchlings way back, you know, in 1978. And we continued it right on through after we stopped getting eggs from Mexico. And then we were bringing eggs in from the beach for protected care. And every nest that we'd find, we'd bring it in for protected care, because we don't want to lose those eggs to high tides, predators, beach driving, nuisance coastal flooding, root penetration, various things that can - campfires, horses on the beach, tent stakes - all the things that can, can happen to a nest if, if the eggs were left on the beach. Poaching, poaching of hatchlings.

**Donna Shaver** [01:00:07] So we have invited the public to come out to our releases as a win-win. We release the hatchlings when they must be released. So there's no show-and-tell. There's no turtles on demand. People want to, "Oh, I want to see a release on such and such a date. Can you make that happen?" And, "No, I can't make that happen. The turtles hatch when they hatch, and you need to come when they are hatching and not, you know, the schedule isn't set the other way round."

**Donna Shaver** [01:00:38] So, but nevertheless, in recent years, we've been able to hold 20 to 25 public releases of captured hatchlings on North Padre at the National Seashore. And they've been very well-attended, attended by about 15,000 people per year. And that's not everybody who comes to our area to go to these releases. So this is a bucket list item.

**Donna Shaver** [01:01:04] I see grown men with tears in their eyes, little kids running to get in the front row, marriage proposals, dying wishes to come out and be in the front row and see a release. People that tell me it's their bucket list. People who tell me that for years they've tried to come over. People who tell me they plan their vacation around this. They come from Canada, they come from Europe, come from all over the state. We had people that got in their car in the middle of the night in Oklahoma and drove down because they were Native

Americans. And they said the turtle is very symbolic to our culture and they wanted to see these turtles.

**Donna Shaver** [01:01:47] And all of that gives me inspiration. And it's, it's my adrenaline that keeps me going at a time when I don't get much sleep. I'm tired and things can get discouraging with vehicles that break down and other bureaucratic things that go wrong, criticisms we get because not everything goes perfectly. You know, it's field work and it's tough work. And, it, the gratitude and interest and support is phenomenal from these.

**Donna Shaver** [01:02:22] And it's an increasing source of eco-tourism. South Padre Island, they opened up some of their releases to the public as well. During COVID times, we posted many of our releases on Facetime Live and had, I think, seven, six or seven, of them that were on FaceTime Live and we got nearly a million views and shares of that. Unbelievable scope that it reached!

**Donna Shaver** [01:02:58] And that's all critical because my program has been a three-pronged approach with each helping support and inform the other - of conservation, research to help support that conservation, and public education, to help support both - encouraging people to report nesting that they see so that we can have those records, so that we can protect those turtles, because many of the turtles that are seen are because of reports by other people working on the beach and by visitors. These turtles nest mostly during the day, unlike the other sea turtles that nest mostly at night.

**Donna Shaver** [01:03:44] And so we also need to teach them the dos and don'ts, so that they can help, and not inadvertently harm the turtles, because we have to share this environment. We're not, like some others that just kick people off. We have the Texas Open Beaches Act, which is part of the Texas Constitution, that helps ensure the public access to our beaches through beach driving or through parking lots that our spaced every, it's a mandated distance apart and capacity park that they must hold. And so we have to allow this access, so we have to work to find a way to share this area. And our program has done that. And it's the primary mitigation measure that allows this balance of conservation and the access to our beaches for recreation and all the things that go with that, which is a net economic driver of millions of dollars, millions of dollars to our gateway community of Corpus Christi and and North Padre Island.

**Donna Shaver** [01:04:56] So we can't do, like some of my colleagues from Florida say, "Donna, just get the vehicles off the beach. Donna, just close the beaches." And you know, it's not that simple.

**David Todd** [01:05:06] Not that simple. No, no. You know, one thing that I think is very interesting is that you who are, you know, Ph.D., and you work for a federal agency and you work with other similarly well-trained professionals in other agencies. You also have these sort of fellow travelers and who are laypeople, just private citizens and, and I was hoping that you could talk a little bit about the effect that they've had, you know, in part just as ecotourists, but I think that, you know, there are folks like, I think was it, Dearyl Adams, who was one of the first to be involved in, but was just a, you know, a sort of sportsman, but not trained like yourself. Do you know much about his story and his interests in the ridleys?

**Donna Shaver** [01:06:07] Absolutely, yes. A precursor, before our effort on North Padre, it, this, our effort was patterned after the work that he and others from that Brownsville Sportsman's Club started, where they went into Mexico and they retrieved Kemp's ridley eggs

from the beach, and they brought them back to South Padre to hatch, with the hopes that they'd return to South Padre to nest, because they saw the threats that were occurring there, and they were concerned, and they wanted to help.

**Donna Shaver** [01:06:44] The Kemp's ridley touches even the hardest hearts. It's amazing when a citizen will see a nesting Kemp's ridley. And you stand there next to it, and you can feel the vibrations in the sand as the turtle tamps down the sand over her nest. I've had visitors describe it to me, "Oh, the turtle, I saw a turtle dancing." "Well, no, she was covering her nest, but I know what you mean. That means a nest is there." They become just enthralled with, with this species and, and feel that it's important to save. And that's critical because biologists can't do this alone.

**Donna Shaver** [01:07:28] And it was citizens that started the efforts, and pioneered this concept of trans-locating eggs. And so hats off to the work that he and his colleagues did back in the '60s.

**Donna Shaver** [01:07:45] And Ila Loetscher the Sea Turtle Lady from South Padre Island. She was part of the group and helped monitor the beaches. And she swears that one of the turtles that came back to nest, Yankee Doodle Dandy, found on the Fourth of July, was one of the turtles from that, you know, those eggs. And we will never know. But them, and it might have been, it might've been. It's possible. Our work has shown that it's possible.

**Donna Shaver** [01:08:11] These turtles do have site fidelity. They can be remarkable in coming back to this same stretch of beach year, after year, after year. You could put me in the middle of the ocean and I wouldn't stand a prayer of coming back to the same place on the beach. But these primitive animals hard-wired to do this can. But not all do. And some I call, I call traitors sometimes, because they'll swap. We have like a, just a little friendly competition on the beaches. Just, "Oh, you got a nest. We didn't get any today", and vice versa. But sometimes we'll have a turtle that nests at one spot, and then all of a sudden she's laid eggs on an adjacent island. Or we've got records of Padre Island down in Mexico.

**Donna Shaver** [01:09:02] And what I found through my satellite tracking work is that these turtles roam in between the clutches that they lay in a nesting season. And when you think about that, that's smart because you don't want to just hang, hang out there where all the sharks are. Got to keep moving. And I think when those conditions come where the other turtles are prompted to come in for an arribada, if you're not by the beach where you normally nest, you may come in at a different area. I think that this helps account for some of that wandering or roaming to other beaches.

**Donna Shaver** [01:09:38] But again, there's a lot of questions to be answered by other biologists in the future. When you do research, it, it unveils more questions than definitive answers.

**Donna Shaver** [01:09:50] So yes, indeed, citizens critical in the work. And my hat's off to those pioneers and volunteers, just citizens from our community, of all ages and backgrounds, have been volunteers with our program. I tell the folks involved in our project, "There's a place for everyone in our volunteer program."

**Donna Shaver** [01:10:21] We can use help with all sorts of different things, from sweeping that sandy floor that gets sandy many times a week with people come a week, and even during a day, when we've got our, our full crew coming in and out. To helping with data input, to

driving to help retrieve eggs and stranded turtles, et cetera. We've had people that have sewn coverage for our, our boxes with hatchlings, that have prepared stickers made designs for us, you name it.

**Donna Shaver** [01:10:52] But also the pairing of our seasonal staff members on what we call our volunteer routes that our beach, our 80 miles that we patrol on North Padre is broken, including some area outside the park to the North, is divided up into four sections. And our two northernmost sections, a seasonal employee will patrol that with a volunteer driving, and the seasonalist as a spotter. And a lot of times, these volunteers are far more experienced than our seasonal employers. This may be their first time ever working with a sea turtle. And some of our volunteers have been with us for 13 years.

**Donna Shaver** [01:11:31] So we, we're so grateful for the thousands of hours they contribute to our program every year. And now it's more than 100 volunteers with our program every year. So I thank those, those volunteers from the bottom of my heart. And they're also an inspiration to me, to help keep me going during the hard days, because they come and they do this work without anybody paying them, without having to do it, and they'd gladly come and help.

**Donna Shaver** [01:12:00] And we say it doesn't matter if you don't know anything about sea turtles, we'll teach you what you need to know. It doesn't matter if you don't know how to operate a UTV. We'll teach you what you need to know. All you need is the desire to help, and the willingness to, you know, give us some time and you're going to be out on the beach - it's going to be rough.

**Donna Shaver** [01:12:20] If you don't want to do that, you can be one of our radio dispatchers. That's fully a volunteer effort. And you will see all the behind-the-scenes if you do that for us. And you don't even see that you're talking to all these people over the radio, it's just you in a room with maybe one other person. And, you know, but it's critical because you've got to take every call and you've got to write it down, in case anything happens, and to keep track of where everybody is on the beach for safety. Because safety is number one in our program, human safety, because we've got it, we got to keep our personnel safe first and foremost before anything else.

**David Todd** [01:12:57] Sure. Well, you know, you've talked some this afternoon about the activity, as you say, on Boca Chica, South Padre, North Padre, and even up towards Galveston, the Upper coast, and down towards Rancho Nuevo in Mexico. But I think you, you also told us just briefly about the satellite monitoring, and I, I was hoping that you could help us understand about the, you know, the life history between when a hatchling swims away and when a, you know, a full-grown adult might return to, to nest. I mean, what do you know now as a, as a biologist about where these turtles go in those intervening years?

**Donna Shaver** [01:13:45] Well, there's still some mysteries about it. There's no known way currently to tag a hatchling and follow it through its entire lifespan. We have, through our marker capture program, we've got a genetic kinship analysis where we are starting to get second generation nesters that have been documented. But that is through the tissue sampling from dead individuals and from a small plug from the nesting female. But just large-scale tagging, we don't know.

**Donna Shaver** [01:14:23] There's been some description of movements based on some of the works that I've collaborated on with Nathan Putman with particle tracking. And what we see

is, is that these turtles will, as they scamper out from the beach and enter the surf and swim away with the currents, they become planktonic with the currents for the first period of life. They settle in with drift mats of sargassum and debris, and some will stay within the Gulf of Mexico, moving around in the eddies and the loops of the currents. Some will be shunted out the Gulf Stream, and make it up the Atlantic coast. And a few will even be swept across the Atlantic Ocean over to Europe. There have been a few records over there, and those turtles have made a real big splash, with some of them in fact being flown back to the U.S. in special jet flights.

**Donna Shaver** [01:15:32] You know, it's, it's, really puts into perspective for naysayers to see the magnitude of efforts gone through for just a few individuals by other organizations. It really helps to reinforce how important these turtles are overall to all of us.

**Donna Shaver** [01:15:56] But that's just a few that go all the way over to Europe. Those that are swept up the East Coast, sometimes you'll hear about cold-stunning attempts really turtles in the northeast U.S. those are because they stayed in those cold waters for too long. They didn't migrate further south as the cold weather set in, which is what they should do for their survival. Sometimes nature isn't perfect, it captures these animals off-guard.

**Donna Shaver** [01:16:24] And if they aren't found and protected like what we do with, for our green turtles here in Texas, they do for their Kemp's ridleys up in the northeast U.S., especially in Massachusetts and Wellfleet area, their Audubon area there, they're just really instrumental in a lot of those rescues, and the New England Aquarium. And those turtles are very debilitated when found and great lengths are gone to, to rehabilitate those and distribute them to various rehab facilities and release them into warmer waters. And some even came to Texas this year because of COVID. There had to be use of, capacity was diminished in some of the rehab facilities, and they had to use some of ours in Texas. And we were glad to get them and help out because it does take all of us.

**Donna Shaver** [01:17:19] So those turtles that they, so they, they, they grow and they, they settle into near-shore areas when they're about two to three years of life, start feeding on benthic organisms. They're mostly crab-eaters, with the increase of the percent of their diet that's crab as they get older. So that when they're adults, it's 99.5 percent crab that they ingest. It's more varied when they're little.

**Donna Shaver** [01:17:56] So these coastal areas that they settle into are along the Atlantic coast and along the Gulf Coast - very important areas, the Mobile Bay, also around the Louisiana coast and some of Galveston Bay, is another important area. Not so much our South Texas bays. The Laguna Madre's hypersaline. We've had very few ridley records in there.

**Donna Shaver** [01:18:24] They reach maturity at about 10 to 15 years of age. And the adults, at some point during their development, will transition from these juvenile foraging areas, to the adult foraging grounds, which are distributed, from my satellite-tracking work, we found these adult female foraging grounds are distributed around the Gulf. Kemp's ridleys do not cross the Gulf as adults. They are in a band that is along the coastline for the entire Gulf. That comprises their migratory corridor, and I've defined that with my colleagues from the USGS. And we've defined the foraging habitats and we've defined the inner nesting habitat also. And I've put transmitters on turtles from Rancho Nuevo, from another area where there is some nesting in Veracruz, Mexico, with our partners there. And then off of Padre Island, and gotten a comparison and then weighted the data, according to the proportion of turtles in the overall population that those represent. So we could get an estimate on what is the magnitude of the

usage of these foraging areas, overall, by the entire population and the vast majority used the northern Gulf.

**Donna Shaver** [01:19:49] And that's the nexus with the Deepwater Horizon spill is because that occurred in the northern Gulf waters, and that's very important area for the adult female Kemp's ridleys that forage in those areas. So the adult females will breed on average, it's thought, in the Kemp's ridley Recovery Plan, every other year. Sometimes it's every year. Sometimes it's up to every four years. And what we found from our marker capture tagging is that there's been an increase in recent years. So it's been on average about 3.5 years, nearly double what it is thought to be, what's in the Recovery Plan - from 2. years to 3.5 years. And that could help explain some of this fluctuation in the numbers that we're seeing now, as opposed to just that continued increase, increase, increase like we were seeing when it was every other year, every two years.

**Donna Shaver** [01:20:50] And we looked for turtles that are apparent neophytes and those that are re-migrants. And what we found is a double whammy of a, so the re-migrants, our old seasoned pros, are taking longer to come back. And there's a decline in the percent of neophytes, or new turtles, integrating into the population. And that would also lead to these fluctuations and fewer turtles than what we would have expected had it returned to exponential.

**Donna Shaver** [01:21:24] It gives us pause to: "Well, what caused that?" What we know is we started to see a change in the growth rate of individual Kemp's ridley turtles before the Deepwater spill, starting in 2008, this decline began. So there were some changes that must have been happening in the foraging environment where these turtles were not able to get as many resources, so they were growing more slowly, which could lead to a longer time to maturity, not being able to nest as frequently. So with a longer time to maturity, meaning that fewer turtles are the neophytes that integrate into the population.

**Donna Shaver** [01:22:12] But what was the cause of this decline in the, you know, the resource availability and this habitat? And are we willing to live with this or should we be looking at what is going on and trying to mitigate it so we can increase the numbers to where they used to be? Or are we going to just accept this as the new normal? I would contend, I think we need to look further and try to give them more of a rebound. But you know, it's, this is expensive work that takes a lot of different partners looking at different aspects - freshwater inflows, crab resources.

**Donna Shaver** [01:22:54] One issue that's very interesting is that there's been a decline in the number of vessels shrimping. And now bycatch reduction devices are mandatory on the shrimping vessels as well. Well, one of the food items that I found that the turtles exploited in the 1980s and early '90s for my paper on the foraging ecology was the shrimp trawl bycatch of the fish. And so the decline in that bycatch as a food source might be having an unintended consequence as a decline in what these turtles have to eat overall, and having to spend more energy to get their food and put on fat and grow and mature. So. More things to look at.

**David Todd** [01:24:00] That's really interesting, so these turtles may have been, in a sense, mooching off ...

**Donna Shaver** [01:24:06] Yes,.

**David Todd** [01:24:07] ..The trawlers.

**David Todd** [01:24:08] They were.

**David Todd** [01:24:09] That's fascinating.

**Donna Shaver** [01:24:11] And that made them more vulnerable to being caught again because they would hang around where shrimping is occurring.

**David Todd** [01:24:18] Well, while we're talking about these, these interesting fluctuations and differing trends, I read that in 2017, the number of Kemp's ridleys' nests that were found in Texas grew really remarkably from the prior year.

**Donna Shaver** [01:24:36] Mhmm.

**David Todd** [01:24:36] Do you have any ideas about, any speculations about what might be going on there?

**Donna Shaver** [01:24:41] Well, we were very happy to see that. And I had hoped to see another big year this year because if we're up to about 3.5 to, you know, four years, it, we should have had another one. But what I think may have happened there is that it just, different year classes lined up and you know that re-migration interval of the 3.5 years caught up and it was just, it, and it was probably a good year for fattening up. And we had a good nesting year. But then there was a decline. And the numbers have gone up and down since then and been pretty low in some of the years since, as they were in some of the years right before.

**Donna Shaver** [01:25:28] So factors lined up well, must have lined up well, with the turtles re-migrating from multiple year classes and maturing and, and good food resources during the winter time.

**David Todd** [01:25:48] Well, so, you've given us a really wonderful review of the work to-date on behalf of the Kemp's ridley. I thought perhaps you could give us a view into the future. You're a member of the Kemp's Ridley Sea Turtle Working Group and the IUCN Species Survival Committee, Marine Turtle Specialist Group and from working with the turtle, what do you foresee for the Kemp's ridley in the years to come?

**Donna Shaver** [01:26:22] Well, we don't know what the, what the future is. We felt very confident for a few years that it was an endangered species success story in the making, and it was grounds to celebrate and we just needed to keep going and we were going to be able to downlist the species by 2020.

**Donna Shaver** [01:26:49] Well, that didn't happen, and we just don't know what the future is going to bring. And that means it's essential that we keep up our monitoring of nesting numbers, our protection of nesting turtles and of eggs. These nesting turtles have it tremendous what's called a reproductive value or value to the population because so many others died. It's thought that one in four hundred eggs will produce an individual that survives to adulthood. So many others died while this one lived. And she can lay clutches of eggs over many years in her lifetime. It's important to keep her alive and not see her killed on the beach just because some, some bean counters decided it was time to move on to other things.

**Donna Shaver** [01:27:43] Endangered species recovery efforts is a long game. And there's not an easy exit strategy other than giving up prematurely or hanging in there until you achieve recovery. And hanging in there till you achieve recovery takes funding, and that continues to be the daunting worry that's in our future, but is so hard to achieve. We, we achieved, we got a reprieve from this issue through the Deepwater Horizon early restoration funding. And that's what kept me going during the tedious, tedious six years of working on the case as the principal investigator for the Natural Resource Damage Assessment to determine the impacts of the spill to the nesting Kemp's ridley and the eggs, to write the restoration proposals, to help write different plans, and be on conference calls, drop everything, and do all this extra work. But with the hope that it was going to bring this funding to all the, the Kemp's ridley nesting project in Texas and Mexico too. And it was, it's been a godsend.

**Donna Shaver** [01:29:04] But in a few years it runs out and we don't know where money's going to come from, when that's gone. So it's a scary future. There's the continuing need for work, continuing need for monitoring information, but a continuing need to try to get money for this work. I keep hoping that some rich benefactor will show up and take a shine to the Kemp's ridley and solve all of our problems, because to us big money is just pocket change to some people that think in dollar signs way different than I do, but I haven't found that person yet. Not, as a federal employee, I couldn't even accept to help if, if they did surface. But we, I think'd manage to find a way to have somebody else ask him.

**Donna Shaver** [01:30:00] So, that's, that's what I say. I wish I had a clear answer for you, but that's the answer I've got.

**David Todd** [01:30:10] Well, it's, it's good that you, you have a clear picture of what's needed and that often, in my humble opinion, seems to be the first step. And I hope that, you know...

**Donna Shaver** [01:30:22] If anybody listens to me.

**David Todd** [01:30:25] Yeah, Daddy Warbucks shows up and and helps out.

**David Todd** [01:30:30] Well, let's, let's, I guess, sort to wrap up, I guess. Do you, as you complete close to 40 years of working with the Kemp's ridley sea turtle, when you look back, is there, are there any sort of highlights that really grab your attention that have taught you a lesson?

**Donna Shaver** [01:30:54] The, the return of those experimentally imprinted Head Started Kemp's ridleys was a tremendous highlight, because so few people thought that it would work. I even had people from NOAA call me up and say, "Are you really sure? Are you really sure? Did you really find Head Started turtles?" "Yes, I am. I wouldn't fib about that. Yes."

**Donna Shaver** [01:31:23] So that was a tremendous accomplishment from a conservation and scientific perspective. And to have found it too, because the odds are, were against us in finding any of the turtles back then when our resources for patrols were so slim. That was an eye-opener.

**Donna Shaver** [01:31:48] The, and the, what I've also learned is that working with the people, taking inspiration from them, feeling, just letting yourself be open to them contributing in the ways that they can, rather than feeling, you know, insecure because maybe they know how to do this better than you because they've been in the workplace much longer than you have. And, you know, treating them with respect because they're giving to you a

huge value-added, helping you be able to achieve what you couldn't by your own. And involving them so that they're the gateway to that acceptance and support from the overall community. They're ambassadors to take it, take their support and tell all their friends and it spreads.

**Donna Shaver** [01:32:53] And seeing that from them that the Kemp's ridleys get painted on the water tower on the gateway to North Padre Island, which was a, you know, citizen-generated and volunteer-supported effort. There was a contingent that just wanted to put a seagull on there, and our volunteers wouldn't have that. It had to be a Kemp's ridley, and I'm so grateful it is.

**Donna Shaver** [01:33:20] And Kemp's ridley sculptures and etchings are the pillars of the Causeway, and seeing the Kemp's ridley become embraced as the icon for our community has been so gratifying to me.

**Donna Shaver** [01:33:34] And not being Shy Donna. I'm still, in many ways, still Shy Donna from Syracuse, but I've had to deal with it the best that I could so that I could speak for the turtles because they can't speak for themselves. And I have been able to inspire a lot of people and serve as that strong female role model to a lot of the young people that are starting out the way that I did 40 years ago.

**David Todd** [01:34:06] Well, I'm glad you did start out and then kept with it and, as you say, you speak for the turtles.

**David Todd** [01:34:14] Is, is there anything that you might like to add before we close up?

**Donna Shaver** [01:34:22] No, I just, I thank you for this coverage of our work. I had read about your efforts on other initiatives and held in such high esteem the people that you'd interviewed in the past. And so I know I'm among a very prestigious group and I'm honored by that, and humbled, and hope that I did a good job for you.

**David Todd** [01:34:48] Oh, certainly it was a pleasure talking with you, and I really appreciate you taking time to explain all the good work that you've contributed over the years. It's a big contribution.

**Donna Shaver** [01:34:59] With the help of, with the help of a lot of people, and I have to really stress that. It's a lot of people that assisted that have been colleagues, employees, partnership, different agencies, funding entities and of course, our volunteers in our local community.

**David Todd** [01:35:18] It's been a good team.

**Donna Shaver** [01:35:20] Yes.

**David Todd** [01:35:20] Well, well, thank you so much, Dr. Shaver. It's been a pleasure talking to you, and I hope you have a good day and that you feel better soon.

**Donna Shaver** [01:35:30] OK, well, thank you so much for doing this. And if you have questions or need to get more, more information from me, just let me know. Thank you.

**David Todd** [01:35:39] That's very kind. All right.

**Donna Shaver** [01:35:40] Thank you. Thanks. OK, bye.