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David Todd [00:00:02] Well. Good morning. My name is David Todd, and I have the great privilege of being here with Dr. Stan Casto.

David Todd [00:00:10] And with his permission, we plan on recording this interview for research and educational work on behalf of a non-profit group called the Conservation History Association of Texas, and for a book and a website for Texas A&M University Press, and finally for an archive at the Briscoe Center for American History, which is at the University of Texas at Austin.

David Todd [00:00:34] And I want to stress that he would have all rights to use the recording as he sees fit.

David Todd [00:00:40] And before we got any further, I just wanted to make sure that that's all right with Dr. Casto.

Stan Casto [00:00:46] Yes it is.

David Todd [00:00:47] Well, good. Well, then let's get started. Let me say a few words about what we plan to do here.

David Todd [00:00:54] It is, let's see, Friday, March 1st. It's 2024. It's a little after 10:00 am Central Time.

David Todd [00:01:04] As I said, my name is David Todd, and I am representing the Conservation History Association of Texas, and I am in Austin. And we are conducting a remote interview with Dr. Stan Casto, who splits his time between Seguin and Cotulla, Texas area.

David Todd [00:01:22] Dr. Castro received his B.S. and M.S. Degrees in biology from Texas A&I in Kingsville, and then his Ph.D. In zoology and botany from Texas Tech University. Between his coursework at Texas A&I and his doctoral work at Tech, he taught at Southwest Texas State and at Hill Junior College. After receiving his doctoral degree, he went on to teach at the University of Mary Hardin-Baylor from 1973 through 2001.

David Todd [00:01:55] Dr. Casto has had a long interest in natural history, particularly as it relates to ornithology, and he has a special expertise in the history of the passenger pigeon.

David Todd [00:02:07] So today we'll talk about Dr. Castor's life and career to date, and especially focus on what he can tell us about the passenger pigeon's history.

David Todd [00:02:17] So, thanks again for joining us today.

David Todd [00:02:21] And I'd like to just begin by asking you, Dr. Casto, if you might be able to please point to any people or events in your early life that might have gotten you interested in nature, science, birds, and maybe even the passenger pigeon.

Stan Casto [00:02:39] Thank you. David. It's good to be with you this morning.

Stan Casto [00:02:42] My early years were spent on a farm and ranch near Millet in the LaSalle County, Texas. My older cousins and friends were hunters who supplemented the family table with meat from wild animals. Understanding the habits of these animals was the key to their success as hunters. At that time, there were no field guides available, and all information about the identification and habits of animals was passed from one person to another by word of mouth.

Stan Casto [00:03:12] To give an example, after finding insects impaled on barbed wire, I enquired of my older cousin, how has this come to me, and I was told that they had been placed there by the so-called "butcher bird". Of course, this is a bird that today we would know as a loggerhead strike.

Stan Casto [00:03:33] A significant event in my life was witnessed when I was about 6 or 7 years old. I was in the backyard with my father about sundown, when I looked up and saw an enormous flight of hawks, mostly Swainson's hawks, passing overhead. The flight went on until it was too dark to see. I had never seen so many birds together at one time. I asked my father where the hawks were going, and he replied that they were heading south.

Stan Casto [00:04:04] My father was very protective of most forms of wildlife. He valued hawks and owls since they helped control rats and mice. All snakes on our property were protected, except the rattlesnakes, which, of course, were a constant menace to the ranch dogs.

Stan Casto [00:04:23] When I was about 7 or 8 years old, I was given a Red-Ryder BB gun with instructions to reduce the number of house sparrows nesting in our gutters. I learned much about the habits of this species during this endeavor, information that was later used when researching for my dissertation on the quill mite that infests house sparrows, and later writing an article about the history of the house sparrow in Texas.

Stan Casto [00:04:53] My exposure to science was limited to a single high school course called, "Natural Science", which had little or no biology content. I knew nothing about the passenger pigeon until I attended college.

David Todd [00:05:09] Well. Thank you.

David Todd [00:05:11] So, let me ask you another question. Were there any particular books or TV shows or movies that helped encourage your interest in animals, research, birds, or even the passenger pigeon in particular?

Stan Casto [00:05:28] The first book that I remember was an illustrated volume entitled, "Here Come the Penguins". It was published in 1942. My mother read this book to me when I was 3 or 4 years old. Of course, I would never see a live penguin until years later at the zoo. However, I was enthralled by the penguins and my interest in birds was stimulated.

Stan Casto [00:05:54] There was no T.V. in my family home until I had left and was enrolled in college. I did not recall ever seeing any movie in which birds were featured.

David Todd [00:06:08] All right.

David Todd [00:06:10] Well, and were there any classmates or teachers, perhaps, during grade school or college, during your master's training, or during your PhD studies, who might have helped you get intrigued and excited about nature, science, and perhaps the passenger pigeon?

Stan Casto [00:06:32] I do not recall any classmates or teachers during my public school years who were significant in stimulating my interest in nature, science, or the passenger pigeon.

Stan Casto [00:06:44] Teachers in the biology department at Texas A&I who were very important in my education about nature and science, included Curtis Eklund, John Talmer Peacock, and George Williges. The ornithology course that I took at Texas A&I under Burris McDaniel was my first exposure to the identification and natural history of birds, and it was probably in this course that I first learned about the history of the passenger pigeon. The course that I took in historiography that I took under John Rayburn at Texas A&I also stimulated my interest in writing about events of the past.

Stan Casto [00:07:26] I had many excellent teachers at Texas Tech University. Michael Kent Rylander was the person who introduced me to the history of ornithology in Texas. Kent was the ornithologist at Texas Tech and the first editor of the Bulletin of the Texas Ornithological Society. He encouraged me to publish in the TOS Bulletin, and I have been a regular contributor of articles now for many years.

David Todd [00:07:54] Well, thank you for giving us a little bit of personal background there - your childhood and schooling and some of the books that you might have been read to, actually.

David Todd [00:08:09] Tell me how you first became interested in the passenger pigeon.

Stan Casto [00:08:16] I think that I first became interested after learning about Martha, the last of her species. How could a species that was once so abundant become extinct in such a short period of time? I know the fact that the species once existed in flocks numbering hundreds of thousands of birds excited my imagination. If only I could have been there to witness the passenger pigeon during its heyday!

David Todd [00:08:45] Well, and during its heyday, please give us an introduction about what we might know of the passenger pigeon's life history and the ecological niche that it filled.

Stan Casto [00:08:58] Okay. The passenger pigeon is primarily a bird of the forest. It preferred to nest and roost in woodlands composed largely of oaks. It nested in southern Canada and southward into Montana, Minnesota, Michigan, Kansas, Oklahoma, Mississippi, and Georgia. The rookeries, which often covered hundreds of acres, contained thousands of birds, each pair laying only a single egg.

Stan Casto [00:09:27] In the fall, the flocks migrated south, arriving at their roosts in Texas in late September or early October. Each day, the birds would depart from their roost in search of food, primarily acorns, but also seeds, fruit, and insects. The birds arrived back at their roosts near sundown, where hunters would often be waiting for them. This routine of the birds continued daily, with most flocks departing Texas by the 1st of March.

David Todd [00:10:00] Okay.

David Todd [00:10:01] Well, tell us, Dr. Casto, about the habitat and range for the passenger pigeon. What do we know about that?

Stan Casto [00:10:11] Well, they lived primarily in forest, in southern Canada and southward into Montana and Michigan, Kansas, Oklahoma, Mississippi and Georgia, as we said before. But this was only during the nesting season. In the fall, they migrated south as far as northern Florida, the Gulf of Mexico and Texas. They generally arrived at Texas during late September or mid-October, where they remained until about the 1st of March. The forests of northeastern Texas were a favored location, and large numbers of birds overwintered in roosts along the headwaters of the Trinity and Neches rivers. At irregular intervals during the 19th century, immense numbers of pigeons also penetrated as far south as Austin, San Antonio, and even as far west as Edwards County, in their search for food.

David Todd [00:11:10] Well, so it'd be interesting to find out how you've learned about passenger pigeons. And I was hoping that you could tell us about the sources of accounts of passenger pigeons that you have found useful, including newspaper articles and old-timer reports in "The Bird Life of Texas". I believe H.C. Oberholser apparently believes the passenger pigeon was extirpated by 1900, in Texas and, trying to reconstruct the passenger pigeon's existence in the state, he reported on that in his "Haunts and Habits" report. I was curious what he learned, what he found.

Stan Casto [00:11:54] You're absolutely correct in what you said. Harry Oberholser's account of the Haunts and Habits of the passenger pigeons is an excellent account of the species' occurrence in Texas. And it is a first source that should be consulted by persons interested in the history of the passenger pigeon in Texas.

Stan Casto [00:12:14] Oberholser was assisted in his work by Judge Royall Richard Watkins, who was a sportsman from Dallas with an interest in birds and other game animals. Watkins was born in 1885, in Athens, the county seat of Henderson County. Oberholser was able to obtain Watson's personal recollections, as well as the accounts of older inhabitants of Henderson County who had actually witnessed the large pigeon roost on Coon Creek, which is south of Athens.

Stan Casto [00:12:49] These accounts enabled Oberholser to determine the location of the roost, dates of arrival and departure of the birds, as well as the slaughter of the birds by locals and hunters from as far away as Fort Worth. He also learned that the pigeons had little fear of humans, and would feed in open fields and in stock pens where animals such as hogs were being held. The birds would also drink from the water troughs and nearby stock ponds. Local people kill large numbers of birds for table food, or sometimes to be just fed to the hogs.

Stan Casto [00:13:27] There was, however, no evidence of commercial hunting at the Coon Creek roost, probably because of the lack of storage and transport facilities. It was Oberholser's conclusion that Henderson County was one of the most favored roost places for

the passenger pigeons in all of Texas. This very same thing could also be said for Anderson County, which shared a common border with Henderson County.

Stan Casto [00:13:55] Now Olberholser obtained all these first-hand accounts, but he did not include reports of the passenger pigeon that were published in contemporary newspapers. These newspaper accounts are important because they provide an insight into how the people of that era viewed the arrival of the so-called "wild pigeons" in the fall of each year.

Stan Casto [00:14:19] The arrival of the pigeons was interpreted differently by people according to their individual self-interest. The arrival of thousands of pigeons in an area quickly depleted the acorn crop, which was so important in the fattening of homes. The pigeons were therefore considered to be a threat by the hog farmers.

Stan Casto [00:14:40] For sportsmen, the pigeons provided a great hunting opportunity and a source of fresh meat for the table. Pigeons were also seen as competitors with the deer, the squirrels and other animals that ate acorns. While pigeons were sometimes sold in the markets or restaurants, providing a source of income for the local hunters.

David Todd [00:15:04] I understand that many observers reported huge numbers of passenger pigeons in roosts and in migrating flocks. Can you perhaps give us a idea of the scale of these flocks?

Stan Casto [00:15:20] There just aren't hardly enough words in the dictionary to describe the size of the flocks. There are reports of the number of pigeons, but these are all subjective estimates, because there was no way to obtain an accurate account of the number of birds present. The flocks were described by contemporary observers and in newspaper accounts as consisting of thousands, millions, myriads or such enormous numbers that they actually darkened the sky. The combined weight of the birds in roosts was so great that branches were broken from the trees, and the accumulated guano was so deep that it actually killed the underlying vegetation.

David Todd [00:16:08] Now, I understand that the skeletal remains of passenger pigeons have been found in archeological sites in Texas, as well as early homesteads. It'd be good to hear more about that.

Stan Casto [00:16:23] That is correct. Archeologists use, routinely do, a faunal analysis to determine how the people occupying the site used the local fauna. Skeletal remains of passenger pigeons dating from about 900 to 1350 A.D. have been reported at archeological sites in Cherokee and Bowie counties. Remains have also been found at six mid- to late 19th century homestead sites in Dallas and Tarrant County. The people of these locations were presumably using passenger pigeons as food, as well as perhaps using their feathers for stuffing pillows and mattresses.

David Todd [00:17:08] Well, now, where might the passenger pigeon have been seen and recorded in Texas, especially in those latter years of their existence?

Stan Casto [00:17:19] Passenger pigeons have been seen and recorded in at least 68 counties in Texas, encompassing an area lying east from a line starting at Montague County on the Red River, to Howard County in the west to Kinney County in the south and southeast to Calhoun County on the Gulf Coast. In other words, almost the entirety of East Texas was occupied by passenger pigeons at some time or another.

David Todd [00:17:51] Okay. Well, now I hear that passenger pigeons were noted for appearing at natural salt sites such as the springs in Van Zandt County. Is is that right?

Stan Casto [00:18:03] That is correct. Passenger pigeons have been known to have a craving for salt. And there are two reports that they're using the springs in Van Zandt County, Texas, as a source of salt. Pigeon netters often used salt as a bait to attract the birds. Since pigeons obviously had such a craving for salt, I've often wondered why there weren't reports of passenger pigeons at other salt sources in Texas, or perhaps near the Gulf Coast.

David Todd [00:18:37] Well, were there any places in Texas that might have commemorated the passenger pigeons that were once here with site names?

Stan Casto [00:18:49] Yes. There are several places. You know, passenger pigeons were once just an awesome force of nature. And, even though they're gone, we still remember them by seven obscure place names commemorating their role in the history of the Lone Star State. Pigeon Roost, near Kountze in Hardin County, was reportedly named for an enormous roost once found in that area. A second "pigeon roost prairie", located 4 to 5 miles south of Grand Saline in Van Zandt County is also named for a long-used roost in the surrounding forest. Pigeon Roost Creek in southwestern Bandera County, is named for a large roost along its banks during the winters of 1869 and 1870. An elevation in Rusk County is known simply as Pigeon Hill. Other place names include Pigeon Roost Hollow in Bastrop County, Pigeon Roost Branch in Houston County, and Pigeon Creek in Sabine County. And again, we assume that these names were given as a result of passenger pigeons at one time or another roosting in that particular area.

David Todd [00:20:14] Okay. Now, where might pigeons have had major roost sites or rookeries in Texas? And were there any signs that might have been left by significant roost or rookery sites?

Stan Casto [00:20:32] Well, passenger pigeons did not normally nest in Texas, and there are only a few records of rookeries in our state. However, in May of 1873, it was reported that thousands of young were hatched at a rookery about ten miles from Decatur in Wise County. What was perhaps an incipient nesting in San Saba County during the spring of 1873 was thwarted by the locals, who burned the stands of junipers in which the birds were established. It's been claimed that the largest rookery ever known was located in the Texas Panhandle during 1882. However, this claim has not been substantiated from contemporary records. Oberholser concluded, based on the recollections of Bonnie Chapman Evans, the widow of Dr. John Larkin Evans, that this thing occurred in Henderson County from 1883 to 1892. If indeed this is correct, that would have been the one of the largest rookeries in the state of Texas.

Stan Casto [00:21:45] The broken branches and guano deposits that are mentioned by Oberholser and in contemporary newspaper accounts were associated with the large traditional roosts, such as the ones along Wolf Creek in Anderson County and Coon Creek in Henderson County. In these locations, the birds accumulated in such numbers that just the actual weight of them would break many of the more fragile branches.

David Todd [00:22:15] That's amazing.

David Todd [00:22:17] Now, I understand that there were really no eggs collected from roosts in Texas, but were there any oologists who might have been active in the state, who were interested in passenger pigeon eggs?

Stan Casto [00:22:33] Well, as I said, passenger pigeons, did not lay in their winter roosts, so, you know, we wouldn't expect any eggs to be found in the same locations where they were roosting during the winter. However, a single egg, one of six sets - six nests with only one egg - collected from a breeding colony of 14 birds by Edmund Floyd Pope, on the 3rd of May 1887 near Mobile in Tyler County, represents the only known specimen documenting nesting of the passenger pigeon in Texas.

Stan Casto [00:23:16] This egg is still in existence and it is found in the Avian Egg and Nest Collection, Institute of Natural History, at Columbia-Green Community College in Hudson, New York.

Stan Casto [00:23:30] Now, there were several active egg collectors in Texas. Edwin C. Davis of Gainesville and Frank B. Armstrong of Brownsville are the only two known individuals to have passenger pigeon eggs in their collections. Both men sold and exchanged eggs, but it is not known whether the eggs in their collections were obtained from birds nesting in Texas, or were obtained simply by exchange from out-of-state collectors. So again, you know, we have only one documented specimen - that egg that was found near Mobile, Texas, May 3rd, 1887. It's the only specimen which actually documents from a physical object that the passenger pigeon ever nested in Texas.

David Todd [00:24:28] I see. Okay.

David Todd [00:24:30] Well, I guess one of the central stories of the passenger pigeon, sadly, is its decline and extinction. And I was wondering if you can help us understand why the passenger pigeon declined and eventually disappeared.

Stan Casto [00:24:46] Well, there are various ideas regarding the decline and disappearance of the passenger pigeon. My opinion is that it was from disturbance of the birds at their rookeries in the northern states, accompanied by deforestation in their nesting areas in the northern states and in their roosting areas here in the southern parts of the United States, particularly in Texas.

Stan Casto [00:25:14] Putting all this together, it's my opinion that their demise was not entirely the result of hunting pressure, but this was undoubtedly a major factor, you know, particularly in the last years that they were known. But mainly, I think it was from simply the disturbance in their northern rookeries and in their roosting areas here in the south accompanied by deforestation. The habitat just was not there anymore.

David Todd [00:25:46] All right.

David Todd [00:25:48] Well, tell me, do you think that the passenger pigeon was important for subsistence hunting in Texas or elsewhere?

Stan Casto [00:25:58] Well, flocks of passenger pigeons wintering in Texas often moved from one location to another in search of food. They didn't stay in one location long enough for the locals to become depended on them as a reliable year-round source of food. Flocks of

permanent roosts here in Texas provided for subsistence hunting for generally no longer than three or four months before they departed to go to their rookeries in the northern states.

David Todd [00:26:27] Well, and tell us, how the passenger pigeon might have fit into sport, such as trap shooting events that might have been organized by the Texas State Sportsmen's Association and the Houston Gun Club.

Stan Casto [00:26:45] This has always intrigued me, you know. Passenger pigeons were trapped in the northern states when they were at their rookeries, and they were shipped to Texas, for use as live targets at the annual Sportsmen's Pigeon Shoot. But, I've often wondered about the logistics of their transfer to Texas. The birds would have had to have been netted days or weeks before the shoot, then shipped to Texas by train. All costs would have to have been paid by the Texas sportsmen receiving the birds. Depending on the care that the birds were given, many of them would have probably died, or would have been in a very weakened condition before they ever arrived in Texas. But indeed, you know, sometimes hundreds, if not thousands, of passenger pigeons were involved with these shoots.

David Todd [00:27:42] Fascinating.

David Todd [00:27:44] Are you familiar with any commerce in live birds or the flesh of passenger pigeons in Texas for restaurants or other markets?

Stan Casto [00:27:57] I do not know of any organized, large-scale commerce in live birds or their flesh taking place in Texas. There are, however, newspaper reports of passenger pigeons being sold in Travis County restaurants during 1872. Birds were sold for 50 cents per dozen at Bastrop during the pigeon invasion of 1881. An individual in southwestern Bandera County was said to have made his living during the winter of 1869 and 1870, selling pigeons taken at Pigeon Roost Creek in southwestern Bandera County. The two presumptive passenger pigeons seen on sale during March 1900 at a Galveston market suggests that there was a local market for pigeons. Historically, Oberholser considered these two birds seen in the Galveston market to be the last passenger pigeons collected in Texas.

David Todd [00:28:57] So, this may be more of a national story, but, I have heard that the spread of railroads and refrigerated rail cars for transporting hunters and meat led to the commercialization of the passenger pigeon in later years. Do you see some truth in that?

Stan Casto [00:29:17] This was perhaps true in the northern states, where the pigeons nested. The only connection that I know of regarding Texas is that, live birds netted at rookeries in the northern states were shipped by railroad to Texas for use in the Sportsman's Annual Pigeon Shoot. Barrels packed with ice were used to ship ducks and other birds taken on the Texas Gulf Coast to northern markets by rail. However, I don't know if this method was ever used to ship passenger pigeons collected at the winter roosts in Texas.

David Todd [00:29:53] All right.

David Todd [00:29:55] Now, I understand that telegraph lines were once used to allow word of pigeon flocks and roosts to spread quickly among hunters, maybe accelerating harvests. Is that accurate?

Stan Casto [00:30:13] I believe that is accurate. News of the flocks would be telegraphed by local officials to the newspapers, which would then print reports of the flocks and their

location. Hunters would then travel by stagecoach or railroad car to the location where the birds were roosting.

David Todd [00:30:31] I see.

David Todd [00:30:33] And now I've read the apparently various products from passenger pigeons, including soap, oil and feathers that might have been made from the the pigeons were also marketed and may have contributed to the demise of the bird. Do you think that's a fair claim?

Stan Casto [00:30:54] I don't know of any marketing of soap, oil or feathers of passenger pigeons taking place in Texas. These activities may have occurred elsewhere, but I just cannot conceive of them being a major factor in the extinction of the passenger pigeon. However, I do think it is reasonable to assume that folks in Texas probably use the feather of passenger pigeons for stuffing pillows and mattresses.

David Todd [00:31:22] Now, I have heard that at their peak, the pigeons were remarkably easy to kill and that there were reports that hundreds were killed with sticks or other kind of rudimentary weapons. Is that right?

Stan Casto [00:31:38] This is apparently true. A large flock of pigeons established a roost ten miles south of Burnet during the invasion of 1881. A group of hunters reportedly slaughtered more than a thousand birds by first shooting into the circling flocks and then, as the birds settle on their perches, catching them and killing them with the ramrods of their guns. At a roost near Floresville, a person reportedly killed 475 birds with a stick. Oberholser reported that at a roost south of Athens, the hunters blinded the birds with a light and then beat literally thousands of them to death with sticks.

David Todd [00:32:22] That's remarkable.

David Todd [00:32:24] So, were the passenger pigeons viewed as a pest? Were there fears, perhaps, that the pigeons would destroy crops or mast that were valuable for hogs, even to the extent that landowners might set fire to juniper forests where these birds might have been roosting?

Stan Casto [00:32:47] Yes, they were often viewed as pests, particularly by those persons who depended on the meat and lard of hogs to carry them over the winter. The large flocks of pigeons would quickly deplete the crop of acorns that were essential for fattening the hogs. Reports of pigeons destroying the acorn crop were commonly reported in contemporary newspaper accounts. It was reported during the spring of 1873 that local farmers actually set fire to a stand of junipers in order to drive away the pigeons that were presumably beginning to establish a rookery.

David Todd [00:33:26] I see. Thank you.

David Todd [00:33:28] Now, I've read that there might have been efforts by the American Ornithologists Union to collect dead pigeons for study, or possibly asking for nests or colony reports. Is there some truth to that, to either story?

Stan Casto [00:33:50] I'm not aware of the elite ever offering a reward for dead pigeons. However, from 1909 to 1912, the AOU did offer $1,500 to anyone finding a nest or nesting colony of passenger pigeons. This effort, needless to say, was unsuccessful.

David Todd [00:34:13] I see.

David Todd [00:34:15] Was there a passenger pigeon market for collectors, as the passenger pigeon grew rarer and more valuable? Do you think there were instances of offers or sales of skins or eggs?

Stan Casto [00:34:30] There are two records of commercial collectors offering skins and eggs for sale. During the 1890s, Frank Armstrong of Brownsville advertised pigeon skins at prices ranging from a dollar and a half to three dollars, depending on quality. Around 1899, Edwin Davis of Gainesville offered sets of eggs at forty cents per set. Each set, of course, consisting of only a single egg. The origin of the skins and eggs offered by Armstrong and Davis is unknown. It is, however, possible that these specimens were obtained from birds roosting or nesting in eastern Texas. Eggs of the passenger pigeon were valued at two dollars each in the 1896 edition of Frank Lattin's "Standard Catalog of North American Bird Eggs". So yes, there was a market for both the skins and the eggs, and even after the birds had become extinct.

David Todd [00:35:34] I see, and those are pretty substantial prices at that time, I bet.

Stan Casto [00:35:38] Yes it was.

David Todd [00:35:41] Now, was there some thought that the passenger pigeons, which had always been an irregular visitor to Texas, might have been safe but unseen, that it had gone to some distant area after it was actually rare or actually extinct.

Stan Casto [00:35:59] Yes. That's true. Remembering the sporadic and irregular occurrence of the pigeons during the 1870s and 1880s, many Texans apparently believed that the species was alive and well, but perhaps in Mexico or Central America, and it would at any time reappear in its former numbers. This belief covered, coupled with the difficulty of distinguishing between white-winged doves and passenger pigeons, led to erroneous reports of passenger pigeons in South Texas during 1907 and 1911. In reality, it was Oberholser's judgment that the passenger pigeon had been extirpated from Texas in 1900.

David Todd [00:36:50] Hopeful, but maybe misguided.

David Todd [00:36:55] So, I've read that evidently there was some disbelief that a bird as numerous and widespread as the passenger pigeon could not possibly decline or disappear, and that that might have played a part in the passenger pigeon's extinction: just that folks just could not imagine that that could come to pass. Is that something that you would agree with?

Stan Casto [00:37:25] Yes, I would agree. There were so many passenger pigeons, over so large a range, that many people believed that they could never disappear from the surface of the earth, and yet they did. The belief that the species could never become extinct probably delayed the passage of laws that would have protected the species and its habitat.

David Todd [00:37:50] Do you think that some observers might have confused the passenger pigeon and the mourning or white-winged dove and so thought that the pigeons still persisted longer or in bigger numbers than they truly did?

Stan Casto [00:38:06] Well, this seems to be the case in South Texas in 1907 and 1911. Huge flocks of white-winged doves are known to suddenly appear in an area, and then depart within a few days. It would have been very easy for casual observers in the early 1900s to think that these large flocks were passenger pigeons.

David Todd [00:38:30] Now, what do you make of the reports that wild passenger pigeons were seen in South Texas sometime around 1910.

Stan Casto [00:38:41] Well, there were reports of this type, those being occurred during 1907 and 1911. And they are apparently based on misidentification of white-winged doves. Oscar Guessaz, who was the publisher of the "Texas Film and Sportsman" magazine, set the record straight with his declaration that the wild pigeons had not returned to Texas except in the mind of some ignoramus.

David Todd [00:39:16] That's a pretty strong dismissal there.

Stan Casto [00:39:20] Yes, it is.

David Todd [00:39:23] So, I'm curious if there might have been some interventions on behalf of the passenger pigeon. Do you know of any efforts to protect the bird in the latter years of its existence with game laws or other efforts?

Stan Casto [00:39:38] Well, the passenger pigeon had become extinct before any effective game laws were passed in Texas. There were, however, laws passed in some of the northern states that afforded them limited protection while they were in their nesting colonies. But again, these laws were passed at a time when it was almost too late and the laws were never effectively enforced even after they were passed.

David Todd [00:40:04] And do you know of any efforts to breed the passenger pigeons in captivity?

Stan Casto [00:40:13] I don't know of any attempts to breed captive passenger pigeons in Texas. There were, however, efforts to breed captive birds in other states. These efforts were unsuccessful. Passenger pigeons were communal breeders, and the stimulus of numerous other birds was apparently necessary for successful breeding to take place.

David Todd [00:40:36] I see.

David Todd [00:40:38] Now, is it true, do you think, that, in the 1920s and '30s, that some zoos advertised rewards for passenger pigeon specimens?

Stan Casto [00:40:51] Well, Martha and her companions spent the last years of their lives in the Cincinnati Zoo. The last male died in 1910, and Martha was left alone. I have read that $1,000 was offered by the Zoo for the capture of a male who would hopefully mate with Martha and produce offspring. Reports of zoos advertising during the 1920s and 1930s for passenger pigeons just don't seem credible, since the species had been extinct since 1914.

David Todd [00:41:25] I see. Okay.

David Todd [00:41:28] During the years that they still existed, were there any live passenger pigeons on display in Texas, that you know of?

Stan Casto [00:41:39] I don't know of any instances where live passenger pigeons were on display in Texas. You know, just making an offhand statement, there were probably cases where, you know, people captured pigeons and kept them as caged pets for a time or for a while, until they passed away. Apparently, there were none on public display in any place in Texas.

David Todd [00:42:06] And do you think that there might have been any pigeon skins or mounts or skeletons that could be seen then or now in Texas museums?

Stan Casto [00:42:16] Yes, there are. Specimens may be seen at the Fort Worth Museum of Science and Industry, at the Heard Natural Science Museum and Wildlife Sanctuary in McKinney, the Buckhorn Saloon and Museum in San Antonio, and the Welder Wildlife Foundation in Sinton. The Franklin County Museum in Mount Vernon has the egg of a passenger pigeon, but this egg was not collected in Texas.

David Todd [00:42:47] I understand. All right.

David Todd [00:42:50] So, recently, I understand that there have been proposals from a group called Revive and Restore, which is affiliated with the Long Now Foundation, to try to recreate the passenger pigeon from DNA that might be salvaged in some way. And I'm curious what your attitude is about that. What do you think?

Stan Casto [00:43:12] Well, I think this is a novel and interesting idea. Although it may be possible to recreate a bird that is similar in appearance and physiology, it will in essence be a new species that is not likely to survive in the wild. In addition, we cannot create the ecosystem that passenger pigeons occupied for thousands of years. Recreated birds would probably be destined to live their lives in captivity under the care of their creators. To sum it up, I cannot think of any good reason for attempting to recreate the passenger pigeon. Although I might add, there may be some useful application come out of this research, but ... I don't think it would be a good reason for helping the passenger pigeon in any way.

David Todd [00:44:12] I see. Okay.

David Todd [00:44:15] Well, with the passenger pigeon gone, is there any modern bird that you might point to that fills the ecological gap that has been left by the demise of the passenger pigeon?

Stan Casto [00:44:29] Okay. The ecosystem occupied by passenger pigeons no longer exists exactly as it was 100 years ago. And in that sense, it could only be filled by another species or group of species with different attributes. You know, nature never leaves a niche unfulfilled. But I don't have any idea what species, or group of species, might have filled the niche previously occupied the passenger pigeon.

David Todd [00:45:01] You know, I have run across something called the Passenger Pigeon Project, and I've been impressed by the great interest and following that the bird has, even over 100 years after its extinction. Can you help us understand, you know, this sort of following that, that it has engendered?

Stan Casto [00:45:24] The Passenger Pigeon Project has done very good work in educating the general public about the history and extinction of the passenger pigeon. Joel Greenberg has written excellent summaries of the history of the passenger pigeon in Texas and other states that can be accessed on the internet. I'm uncertain as to what extent the efforts of this project will carry over and help prevent extinction of species that face extinction in the here and now. Perhaps, you know, we people will learn something from what happened to the passenger pigeon and somehow bring that information into the present. But I don't know how that will be done.

David Todd [00:46:13] All right.

David Todd [00:46:14] Well, and then just to hear your own personal view, what value do you find in a creature such as the passenger pigeon?

Stan Casto [00:46:26] The passenger pigeon was an evolutionary marvel, the product of millennia of subtle changes brought about by natural selection. As an educator, I would use the demise of the passenger pigeon as an example of what can happen when accurate data is not available to write protective legislation and a management plan that would prevent the extinction of a threatened species.

David Todd [00:46:57] Okay, I follow you.

David Todd [00:47:00] So, and then what meaning do you see in the loss of the passenger pigeon?

Stan Casto [00:47:06] Well, species come and go on this planet as a consequence of the changes that naturally take place with the passage of time. The rapid extinction of the passenger pigeon is not due to natural changes, but rather to the activities of humans. The loss of this remarkable bird is a reflection of our inability to fully appreciate and respect the living things with which we share this earth.

David Todd [00:47:34] A sobering thought.

David Todd [00:47:37] Well, let's talk a little bit about your career. As you look back over your years as a biologist, what do you think about that, that calling and profession that you've followed for many years?

Stan Casto [00:47:52] I cannot think of any career that I would rather have had. My interactions with living things, both plant and animal, have been very rewarding.

David Todd [00:48:05] And, I guess another hat you've worn is that of a professor, at several institutions, but, predominantly at the University of Mary Hardin-Baylor, where you taught from 1973 to 2001. And I was curious how you look back at that experience.

Stan Casto [00:48:26] Well as an educator, I saw teaching as a way of opening people's minds and bringing positive changes into the world, particularly with regard to attitudes toward living things with which we share this planet.

David Todd [00:48:42] I see.

David Todd [00:48:44] So, I understand that your family has long owned and managed a rural property near Millet, in LaSalle County, southwest of San Antonio. And this parcel, I guess, you've used to host field trips for collection and identification of local flora and fauna. And, the land currently has neither crops nor livestock on it, and is managed under the Open Space Agricultural Valuation. I was hoping that you could tell us a little bit about your life as a landlord, a landowner, a student and a steward of this tract.

Stan Casto [00:49:30] My family struggled for many years to make a living on our small farm and ranch. The discovery of oil in the Eagleford Shale, and on our property, brought about a prosperity that could only be dreamed of 20 years ago. I'm now able to devote all of the ranch to the development of conditions favoring the native wildlife. This involves controlling the feral hog population and, to the extent possible, controlling and preventing the spread of several invasive species of plants. I'm both a student and a steward, learning what works and modifying the approach as necessary.

David Todd [00:50:15] So, I understand that you have been involved with a number of non-profit groups in the conservation field. You are a life member of the Texas Ornithological Society and the Wilson Ornithological Society, and you help contribute to the Conservation Fund, to the Environmental Defense Fund, Natural Resources Defense Council and National Parks Foundation, and probably other groups as well. What role do you feel these non-profits play in your own life, and then also in conservation more generally?

Stan Casto [00:50:49] The Texas Ornithological Society has sanctuaries on the Texas coast that are vitally important for migrating birds. The Society also publishes technical articles, as well as more general articles, for the education and enjoyment of the bird lovers of Texas. The Conservation Fund works to save land from being developed by commercial interests, whereas the lawyers and environmental scientists of the Environmental Defense Fund and the National Resources Defense Council work to find reasonable solutions to the environmental problems that are facing our society. The National Park Foundation furthers the conservation of natural, scenic, and historic resources for future generations. By donating to these areas, it provides me with the feeling that I am part of a greater effort.

David Todd [00:51:47] Well, you've covered a lot of ground with us this morning. I was wondering if there's anything you would like to add to, what you might be able to share with us?

Stan Casto [00:51:58] Yes. I have a few recollections that I would like to share.

Stan Casto [00:52:02] I was fortunate to have been born in the first half of the last century, and to experience nature in southwest Texas before the devastating drought of the 1950s, which caused magnificent groves of trees to die and small farmers to give up and move away, looking for work in the city. It was a time when the local creek was full of fish, frogs and turtles. Snakes and lizards were abundant. Huge flocks of birds were often seen in the grain fields. Rabbits, rodents and other small mammals seemed to be everywhere. Crayfish had numerous burrows around our earthen tank. Multitudes of of insects came nightly to outdoor lights, where they were preyed upon by bats, nighthawks, and toads. Migrating monarch butterflies were seen in huge numbers.

Stan Casto [00:52:56] That time has now passed. The ecology of southwestern Texas is now changed due to the continued efforts of development and climate change. The passsenger

pigeon is history, and likewise, future generations will never again witness the fauna and flora of southwest Texas, as it was in the days of my youth.

Stan Casto [00:53:19] Again, just like the passenger pigeon, the changes that have taken place in South Texas are a part of history.

David Todd [00:53:30] Well, thank you for teaching us about that history. It's both sobering and somewhat sad, but also instructive, and I hope, is useful for guiding us to be a little bit more considerate about how we live and share this planet.

David Todd [00:53:52] Is there anything else that you might like to say before we let you go on about your day?

Stan Casto [00:53:58] Well, your concluding comments were very good. And again, we always have to be hopeful of the future, that perhaps with the best efforts of our scientists and educators, you know, people will begin to understand that we have to live with the changes that are taking place on this planet, but we can modify them in such ways that it won't adversely affect the natural world, which again, sustains us and our life on this planet. Again, but all we can do is just hope for the best.

Stan Casto [00:54:35] Good to be with you, David. Thanks a lot.

David Todd [00:54:38] Yes, sir. Thank you so much.

David Todd [00:54:40] I will turn off our recording and, and let you go.