

TRANSCRIPT

INTERVIEWEE: Jesse Grantham (JG)

INTERVIEWER: David Todd (DT)

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(misc.)

David Todd: My name is David Todd. I'm here for the Conservation History Association of Texas. It's October 25th, 2003 and we're in Rockport, Texas and we're visiting with Jesse Grantham, who trained as a botanist and has done a lot of work in ornithology and has been a long-term staff member of the National Audubon Society and currently is here in the Texas office helping manage the sanctuaries and their bird programs. And I wanted to thank you for taking the time to talk to us.

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Jesse Grantham: You're most welcome.

David Todd: Jesse, I was hoping that you might introduce us to how you got introduced to the outdoors and into an interest in conservation?

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Jesse Grantham: I can tell you first of how I got interested in—but I'm not sure whether it's the interest in birds or not, but my first recognizable experience with birds. And that was when I was five years old and it was April Fool's Day and I don't remember exactly what the year was, but I remember I was five years old. And my father came in and said there's a robin building a nest outside my bedroom window and you might want to come look at it. And I remember getting up out of bed and walking into his room and looking out the window and watching this robin building this nest. And I was absolutely mesmerized by that activity of that bird going back and forth and building this nest. And I could see, every once in a while, the bird would look up at the window and see me and then it would go about its—its business. So I really had this tremendous opportunity to be right there, looking in this bird's eye, probably, and watching the wheels turning up there as it went through this thousands of years of evolutionary process of building this

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nest. I didn't know, obviously, that's what was going on. And—and I became so enamored of that thing that I watched it every spare moment that I could and, to the point where, I remember playing sick from kindergarten so that I could sit and watch that nest. And I watched it so much that the bird eventually abandoned the nest. I mean, I watched her lay eggs, I watched her incubate the eggs and then, at some point, she just couldn't handle it anymore with me being there watching her, so she left. And—and I think it's that time I discovered my father's 7×35 binoculars and I was able to put those on the nest, too. So I had the window open and the binoculars sitting on the windowsill, focused on this nest. And after she abandoned the nest, I remember I spent days and days sort of watching, waiting for her to come back and climbing up the tree and feeling—and feeling the eggs were cold and—and eventually the nest fell down and the eggs were taken by predators and that was the end of that. But that was the—for me, the real beginning.

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And I s—specifically remember that instance, and from then on, I had this real interest in birds and I think I—oh, it was focused on bird behavior and reproduction, you know, building nests and—and sustainability and all of that. Maybe that's where all of that came from, in those first few weeks, sitting and watching that bird build the nest. How important it was that it went through this process. And—and then, from then on I—I—I met people off and on, older people, retired folks who would occasionally take me to see birds or to go on a birdwatching trip somewhere. And—with my father's big 7×35 binoculars, which was probably—they were a third the size that I was, you know, so they hung down to probably my knees, I'm sure. And—and then I went through a stage in my life where I kind of got away from birds and when I was high school, you know, and you wouldn't get caught dead with a pair of binoculars around your neck when I was a kid. And I remember getting to that stage of where I put them away, of having to hide

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binoculars, you know, if I saw any of my friends coming because that would've been a serious infraction of boyhood or manhood to have a pair of binoculars, being watching birds. So, it wasn't till really I—I—maybe about a senior in high school that I suddenly realized this is silly. This is really what I love to do and I got back into and joined some clubs and met some great people. Then—from then on, I just spent a lot of time—a lot more time out in the field. Now, to say that I got away from birds doesn't mean—when I was in my high school years—doesn't mean that I didn't never go out. I lived out in the country so, of course, every spare moment that I had at home was out in the field, but by myself. So for those early years, I really didn't have any mentors, anybody who was—was sort of pushing me in the direction of a conservation agenda or ethic with birds. It was more just watching birds when I would go with people. But when I was out there by myself, I would usually spend many, many hours just watching a particular bird or

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watching a particular nest and not knowing it at the time, but certainly, I was learning a lot about their behavior and their survivability tactics and the kinds of things that would impact bird populations. Cowbirds laying eggs in their nests and actually watching this whole process of them raising the cowbird and predators, snakes getting into the nest and that sort of thing. So I learned a lot about bird survivability and all of the problems that are out there than impact them from a natural standpoint. And then, it doesn't take too much to realize that you start adding a lot of man caused mortality factors on these birds and that natural caused mortality factors with unnatural, man caused mortality factors and pretty soon, you're heaping much more on the birds than they can stand. And I think that's where I really—that's where it clicked for me—was seeing the natural

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mortality factors and then realizing that there was all this other stuff that was going on out there. And spending that time as a kid, watching birds trying to build nests and trying to raise young—fledging young and then realizing that a lot of them wouldn't make it or didn't make it for a number of reasons that I because really interesting in that whole breeding biology and ecology of birds.

David Todd: So birds are kind of a window or a lens into the natural world and ecosystems, in general. You were interested in how they interacted with other—with predators and with, I guess...

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Jesse Grantham: And with the habitat, too, essentially.

David Todd: The plants that were (?)

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Jesse Grantham: Right. And I think that's where—where my interest in plants came along because as I would watch these birds, I would see the kind of habitat that they were in. I would learn the type of tree that the nest was in. I would learn where they were feeding.

(misc.)

David Todd: If you could resume, you were explaining how, through birds, you got to understand the role and importance of plants in the environment. Can you tell us where that took you?

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Jesse Grantham: Well, as—as I would watch these birds build their nests and watch them feed, I—I learned the names of the plants that they were using and the structure and how important that was to hide a nest or how the nest was built in the particular type of plant

that they were using and the type of materials that they used in building their nests. And, obviously, you soon begin to realize the importance of plants in the environment and certainly, with plants with regard to birds, which was what I was certainly interested in. So my parents were both gardeners and I got to learn the names of plants and—and how to plant plants and the—the importance of the soil conditions and the moisture and all of that. And it wasn't until, actually, I finished college and I actually had a degree in Humanities and decided when I graduated that I wasn't going to go teach school somewhere and interpolate Shakespeare and Keats and that sort of thing. That I really wanted to be outside, working with birds and with plants. Primarily, plants, because I

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knew that I couldn't go anywhere where I wanted to go with birds and their ecology unless I understood plants and their names and—and their ecology. So I actually did about 6 years of working in a botanic garden, learning all I could about plants and natives and exotics and while I was—while it was a display garden, I was really looking at it from another standpoint, how I could learn all I could about plants and their role in the environment. And I took advantage of every opportunity at that botanic garden to be associated with people who were looking at the much bigger picture with regard to plants and their role in the environment. So after I had gotten to a point where I felt I knew plants re—really well, I knew how families of plants worked and genres and species and relationships, I jumped off of that and immediately went into birds. And that's when I started working on—and actually, endangered species. I went to Puerto Rico and worked

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on parrots in Puerto Rico and did some things with parrots in the Bahamas and then came back to Pennsylvania, which is where I grew up and worked for a county planning department on a 2000 year plan, which is obviously long since gone, but this was in the mid 70's. And we developed a natural areas inventory for that county and it was the—one of the first ones that had ever been done and—and it was really this motivation that I had for wanting to understand and wanting people to understand and learn the importance of habitats for wildlife. And I figured if we could identify some of the most important biological, scientific vegetative areas within the county and—and designate those and have that printed up somewhere that, in the years to come, people could go back and look at these documents or as a—as the county continued to develop, they could use that material to help guide a planning agenda, which is actually what it turned out to be. It became the Chester County Natural Areas Inventory. And there was a—obviously, a

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large inventory of several hundred sites in the county that had unique scientific or biological significance. And that became part of the 2000 year plan of development for the county. So if there was a—a place where there were Muhlenberg bog turtles nesting in—which was an endangered species—nesting in a little swamp somewhere, that area was identified. And it became part of the plan be—and as a—let's say, a developer came in and

wanted to develop in this particular area and you could flip through charts and maps and say there's—Muhlenberg bog turtles are going to be in the middle of this development. How can this developer deal with this issue because he's going to have to deal with the federal government and state governments, everything else, before he gets to the point of having to maybe be in an adversary position with them. How can he sort of work around that with the county and others. So, actually, out of that, there were a

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number of pieces of property that were acquired by the Nature Conservancy or that were protected by private landowners because of that inventory. And since then, there've been a number of other counties have done natural area inventories. Many counties have done natural areas inventories around the state and I think it's a kind of a heads up for people and who—was certainly worth the effort. We're doing something like that with National Audubon now is with their Important Birds Area program. Essentially identifying the last of the best places left for birds, which is essentially a—a natural area inventory for birds of North America. You know, so pretty significant stuff.

(misc.)

David Todd: Jesse, we talked some about your work with birds and plants and understanding the natural world. But it sounds like, with the county job, you started to work on things that involved not just understanding it, but protecting it. Can you tell a little bit about how that interest developed?

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Jesse Grantham: Well, that's an interesting question because I've often thought of that, tried to put a particular instant or a—instance or a sort of a chronological date on when I—when I realized that I just don't want to look at birds anymore, I want to participate in—in their—helping them to survive. Essentially, as a kid, that's the way I would've looked at it. And I remember doing that as a really young kid. When I would ever see, say, birds in distress or nests in distress, that I would—would go beyond just the watching standpoint. I would become, essentially, an activist. I would be proactive in their survivability. You know, I never just sat back and—never wanted to just sit back and watch things unfold. I wanted to be in there and be s—be a change for—for something that was negative. I always wanted to make it sort of a positive thing. And—and I think I got rewarded somewhere along the line in some of those experiences that—that because I became involved, I saw a positive outcome and that that was rewarding for me. So I think I—it was rewarding enough as that's the direction that I wanted to go in. I started

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doing more of that. I knew that because I had spent so much time out in the field watching birds that I had a talent or a skill to be able to look at something and know when it wasn't right and to be able to do something where I could correct it. When I came down to Texas in

the 80's, I—I could out on these colonial waterbird islands, where there are 10,000 birds flying around and sitting on eggs and nests and I can tell immediately if there's something wrong there. I can tell if there's, say, a raptor in the sky that's got the birds all looking up or—or uneasy or if there's been some disturbance there. You can tell just by looking at the behavior of either the group of birds or individuals that something isn't right in their behavior. And so, maybe that's why I was successful a lot of times because I—I immediately recognized that there was a problem and that—or that I could do something about it to change the—the situation to make it more of a positive. And a lot of—maybe you would look at that and say, well, I'm more of a manager than a researcher, but I'm—I don't think that that's it. I think that I'm a manager because—or maybe I'm a conservationist that uses management to—to get the job done, to be

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successful. You know, I know what kinds of things to do to reach success and so to have a positive outcome. And that has driven this sort of conservation ethic or agenda that I have. Maybe—and maybe that was there first and maybe all these other things were kind of adding to that. Maybe as a kid, you know, seeing—seeing things sort of falling apart and knowing that I could go in there and make a difference was all part—putting the pieces together. And maybe from the time I was five years old, I was really deemed to be seriously concerned about the environment and conservation and that I just needed all of these other pieces to come together so that I could be somewhat effective and—or at least, understand what needed to be done out there and be able to—to articulate that in some way so that I could get other people to participate and understand the—the importance of being out there, doing the right thing.

David Todd: Could you maybe give us some examples of how you might have tried to do the right thing as a child? I mean, I don't know if you did bird rehab or whatever. And then, things that you've done later, when you've become an adult and you've been through all this education experience.

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Jesse Grantham: Right.

David Todd: Ways that you've tried to intervene.

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Jesse Grantham: Right. Probably as a—as a kid, I remember being able to move bird nests around and not have an impact on the bird. If there was a—a case. I remember a neighbor was cutting a tree down and it had a robin nest in it. Most people would just cut the tree down and put the nest on the ground somewhere or—or throw it away or whatever. And I would take it—the nest and put it back in another tree somewhere and watch the behavior of the adults and keep moving the nest around until the adults found it and resumed their activities and then fledged the young. And I did a lot of stuff with bluebirds as a kid, you

know, putting up bluebird boxes and—and watching the birds and understanding what the particular type of habitat that they wanted and where nests would be susceptible pr—to predators and not to predators. And then, sort of moving boxes around so that they would be successful. And it was always just a personal thing to me, was, you know, yeah, right. You know, when—when a—a bird was successful in producing young and

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fledging young successfully. And then, later on, I—I just did a lot of stuff with things like purple martins and other nesting species, cavity-nesting species. Manipulating them so that they would be able to produce young successfully. And, I mean, at times, it even meant shooting predators out, like starlings or house sparrows and realizing that, you know, the impacts that tho two—those two species had on our native birds and that, as much as I disliked the fact that I had to—to kill something like that, that was the only alternative or the native species to this—to North America weren't going to be successful.

David Todd: That's something interesting, sort of paradox. That, you know, the cowbird, the sparrow, the starling. Can you talk a little bit about how those birds got established and why they're a threat to some of the native birds?

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Jesse Grantham: Well, you take two species like the house sparrow and starling, which are introduced species. They have no native predators. They are extremely wily. If anybody has ever tried to experience getting rid of house sparrows or starlings, you'll soon find out that it's almost impossible to do. We have a martin house out in front of the house here and I refuse to let house sparrows nest in that martin house. But the interesting thing is, and you have to give credit, though I don't like to give credit to house sparrows at how smart they are, but I have shot the mate of a female house sparrow out there. Her mates—probably five or six mates and the next day, she has a new mate and never gets the message that eventually it's going to be her turn if she messes up. You know, but she's smart enough to know that if she hears the door creak open, even though she's never been shot at, she's smart enough to know—to get with—out of range of the gun, you know. And she eventually won. She—I—I could never get her and I never had time

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to actually get the nest out of the box and so she actually did fledge some young. She was smart enough to just continue on avoiding me. Now that's an animal that's—that's pretty perceptive itself. And that's probably why that animal is so successful and the starlings are the same way. You have to think from one intellectual standpoint and you hate to give something like that—an—a house sparrow, starling—sort of intellectual credit for anything. But they certainly are very wily and that they must be thinking something's going on up there to know that, when they see me, that means that there's potential death, sort of, lurking at their door or else they wouldn't take off. And yet,

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they've never experienced that. They've never actually been shot at, but certainly some of their friends have been shot at and their mates have been shot at. So to be able to transpose from that to the fact that this is dangerous for me from this individual, I'm going to get—get out of here. Anyway, if you sort of look at animal psychology, I guess, you could come up with all sorts of...

David Todd: So they do learn.

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Jesse Grantham: Animals.

(misc.)

David Todd: It just appeared to me that your insight was that animals sometimes are credited with just having habits that are ingrained in them through evolution, but you're suggesting that they do learn? And that they can work with abstract things, things that affected other individuals might affect them.

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Jesse Grantham: Right. And I—I don't want to give them too much credit. I mean, I'm sure that it's probably is a lot of inherent stuff going on there and that—that they just, in their evolutionary process, somewhere along the line, there were certain things that they were—were sort of geared up to watching for. And it may be the kind of behavior that I have towards them is triggering a response in them, so. But it's certainly, dogs—I mean, all of us that have dogs know that they appear at times to be able to put things together and come up with a (?). But then that—you know—you—you extrapolate from that, I'm sure, that probably to survive, you—you have to be creative and innovative in some way and whether it's actual thought process or it's just trigger mechanisms, I probably

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wouldn't want to go out on that limb. But I think those of us that have had dogs, I say as an example, that want to play. I mean, what triggers that—that sort of response in them as they're lying there on the floor, suddenly waking up and thinking, I want David to throw the ball or something. You know, and to go over and get the ball and—and try to get you to get up and go outside and—and have a recreational activity. That's not a survivability tactic. That's—that's recreation. So they do look—there is—so there is an emotion in there apparently for pleasure of doing something with you. I mean, they don't go do it with the other dogs. They want to participate with you, a different species. And they know that you can bring pleasure to them by—by doing that. Anyway, we're probably going way—way off the...

David Todd: No, this is interesting. You were talking about how you've tried to control these exotics, such as sparrows. How about starlings and the brown-headed cowbirds?

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Jesse Grantham: Well, I—those starlings are probably the same way and starlings were introduced in, I think, 1860—1850, 1860, something like that. And they didn't—they've just swept across the country and they didn't get to California, I think, until the 1960's. But putting things in perspective, there's no question that they have had—both of the species, house sparrow and starling—have had a severe, detrimental impact on native North American, cavity nesting bird species and—and possibly other species by their foraging behavior. Certainly, in the eastern United States, if you look at the vegetative process that happens there. The—the fruiting of—of plants in the fall coincided with the migration of songbirds through North America from end of August until the beginning of November. I mean, if you look closely, you'll see that there are certain species of plants that produce

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fruits at certain times of the year to coincide with the type of species of bird that's migrating through at the time. And take as an example, dogwoods—flowering dogwoods that are fruiting end of September, beginning of October, which directly coincides with the arrival of big numbers of migratory songbirds that eat fruits through eastern North America. And you could almost follow the progression of dogwood fruits from the New England states all the way down through Florida and it just times perfectly with the arrival of these birds. And there are other fruits, obviously, from other plants that are also producing fruits at that time. Two things, obviously, are happening there. One is, you're providing food for birds with fruits that have a high sugar content, which gives them the energy to make that flight. It stores that energy as fat, that sugar gets stored as

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fat, which allows them to continue on making their migration. And the plant itself is also taking advantage of the bird in that the bird is distributing the seed to other parts of the environment, other parts of the flight path of the bird. So, could be that the bird eats those fruits. Most of our songbirds are night migrants, so it's eating—they're eating the fruits in the morning when they come in and then they spend the day around there. Those seeds are going through their digestive system and they're depositing these seeds around and the, you know, eastern North America, wherever they might be. And that's the plants that vantage from producing the fruits. Pretty elementary type of process here. So, let's see, I was trying to think where we were going with all of that.

David Todd: We were talking about exotics and their effects on native birds.

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Jesse Grantham: Okay. Yeah. So—so you look at that and it's not just that it's—it's coming north in the spring. There are whole series of plants that produce fruits in the spring. Mulberries are one. High, high sugar content, which allows, again, fat to be stored to allow these birds to continue on their migration. But now that we have these hoards of starlings, I mean, millions and millions of starlings, that they also eat those fruits. And so, as soon as those fruits are ripe, you know, 10,000 starlings sweep through a neighborhood and take every dogwood berry possible. So now, when your songbirds arrive, a little bit later on or the same day or whatever, there's nothing there for them to eat. So that's another way. It's not just that the starlings are usurping nest sites and that's—that's pretty much what we focus on when we talk about the impacts of starlings

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on North American birds, it's also this whole ecological impact that they're having of wiping out food supplies for native North American birds. And that happens all over the country. Starlings—hoards of starlings descend on big areas of—of native plants that are producing fruits for migratory birds. So that's a serious detrimental impact on birds because there's just not any food there. And you add into that the fact that we generally tend to, in our development process, knock down—clear a lot of these lower, under story plants who produce all of those fruits. So they're getting a double whammy, not just from starlings, but from a clearing of habitat. So if you think about impacts on songbirds, you know, where do you even begin now to address that issue? If you just singled out food supply, which is absolutely critical, over and above nest sites for cavity nesting birds, now we're having an impact on non-cavity nesting birds, which are all the thrushes and robins and bluebirds and all those species that eat berries. That—that's all been severely changed now.

David Todd: And then, the third...

Jesse Grantham: Question.

David Todd: The exotic species that you talked about was the cowbird and I was wondering if you could talk about those birds and particularly their impact on some endangered warblers and vireos?

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Jesse Grantham: Right. Well, that in itself is another whole story of where we've actually changed the ecology of the brown-headed cowbird. It's actually a native species of bird that was found in the prairie states following buffalo along and that ever—bird evolved to lay its eggs in other birds' nests because the buffalo kept moving all the time and they needed to be with the buffalo to get the insects that the buffalo stirred up as they were eating the grass and to pick insects off of the buffalo, little ticks and flies and other things, which is what the cowbirds ate. So, you don't have time to—to build a nest, lay eggs, incubate the eggs and raise young if this herd of buffalo keeps moving. You've got to keep moving with the buffalo, so—to survive. So, they—they evolved to lay their eggs in other birds' nest and move on with the buffalo. Well, now we've changed all of that because we've changed,

essentially, the—the big deciduous eastern forests have all been opened up and—and certainly in the southeast, too, have all been opened up to pasture and grassland for cattle grazing and cattle now, sort of, mimic what the buffalo used to do, but the cattle

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don't really move very far. They sort of stay in the same area. And so that allows cowbirds to stay in a—in a particular area, but they still haven't evolved to raise their own—build their own nests and lay their eggs and incubate them themselves. That—that would have to be another whole world would have to come and go before they would probably evolve to do that. So they still have this—this process of laying their eggs in other birds' nest, but they just stay in the same place, just going around, laying eggs in other birds' nests. And a female cowbird can lay something like 40 eggs a year and one in each little songbird nest is enough to, in most cases, destroy, kill the—the natural fledglings that would have been in that nest. So for every egg that's laid, it's probably a nest is lost. So, if you take something like black-capped vireo, for every cowbird that's laid in that black-capped vireo nest, it's a good chance that none of those little vireo's are

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going to survive. So, you extrapolate from that, say, 40 eggs and then, you know, 10,000 female cowbirds in one area laying eggs, and that's a huge impact on—on our native songbirds that are nesting in open cup nests out in shrubbery. So that's an unnatural situation. Those small birds haven't evolved to be able to cope with that. Maybe in another thousand years, they will. But certainly not in our lifetime will we ever see black-capped vireos recognizing a brown-headed cowbird egg and throwing it out and then proceeding on. So the only way to deal with that problem, if you want to have black-capped vireos and golden-cheeked warblers and yellow warblers and all those other small species, field sparrows and Cassin's sparrows and that whole great array of native species of songbirds, painted buntings. The only way you're going to ever deal with that problem is to trap and eliminate large numbers of cowbirds. And where that's been done,

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the native species' recover fairly quickly. But that's a tremendous amount of expense and energy that's taken to do that. You have to have somebody monitoring those traps and dealing with all of these hundreds of cowbirds that are in there that have to be dispatched and then, the next day, doing the same thing and the same thing and the same thing. And that's—that's just in one place. Now we're looking at all of eastern—all of North America is essentially dealing with brown-headed cowbirds and they are in all habitats. So how do you ever get that under control?

David Todd: And this is not even an exotic bird, as you pointed out. This is a native bird that's role in the environment has changed because of man-induced effects.

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Jesse Grantham: Right. So, I mean, you know, all of us face that issue and to be realistic maybe, what you're going to have to do is find where these cowbirds spend the winter in large numbers and just try to eliminate millions at a time to try and get the process back under some control so that you—you're able to—to allow these small, migratory songbirds to produce and raise young. And that's the only way it's going to happen. Now, I guess

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you—you can look at that and say maybe that's just the way it is. Maybe it's just that we've changed—we've caused these changes in the environment and the expense is so great that maybe you just let the process go ahead and—and run itself out and see where it ends up. You could just stop trapping cowbirds and—and just see what happens and maybe somewhere along the line, some golden-cheeked warblers or black-capped vireos would evolve, not—still not in our lifetime—would evolve to be able to—to pick the difference between their egg and a cowbird egg and then throw it out and raise their own young. Maybe that's—maybe that's what you do. Because the time and effort and money to continue on with this way, with just cowbirds alone, is tremendous. What if you add all of these other factors on top of that? Fire ants, let's say, is an example that I'm fairly certain are causing severe losses in songbirds, particularly open cup nesting birds. There's...

David Todd: How so?

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Jesse Grantham: There's no question that fire ants are killing colonial waterbirds out on our islands. As the egg is pipped, you can see fire ants going into the egg and killing the chick in the egg because the chick is defenseless. The parents don't try to defend the egg from the fire ants and I'm sor—you couldn't—couldn't imagine a great blue heron with that big, huge bill trying to pick off little minute fire ants from the egg. That's impossible. They're not going to do that. So the chicks, obviously, are killed by the fire ants. If fire ants are doing that to large birds like great blue herons and spoonbills and reddish egrets and white ibis on these islands, certainly fire ants are doing it to painted buntings, curved bill thrashers, indigo buntings, cardinals, etcetera, all out in our brush country. Certainly, they're having this same impact. It's just that there aren't people crawling around on their hands and knees in this brush, looking at these nests, to determine what the impact of fire ants is on these small birds. So that—those two issues, cowbirds and fire ants, for starters are almost overwhelming, which makes you think, well, how much do we put into this? Of course, it's probably like a cancer patient. You

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always hope that there's some cure right around the corner and that, somewhere along the line, something's going to happen to cowbirds or something's going to happen to fire ants or we're going to find some control. But will we be able to find that control in time before these bird numbers drop to certain—to such a point that—that they can't recover because they can't locate each other. That's one of the problems with—with whooping cranes and

trying to reestablish new populations of whooping cranes. I think the experiment in Idaho and—was—was an example of that. That birds were—whooping crane chicks were raised by sand hill cranes in Idaho and then spent the winter at Bosque del Apache Refuge in New Mexico with the sand hills. And the next spring, however, when all these birds went back to Idaho and this—the pair of sand hills that were raising the whooping crane didn't want this little chick around anymore, they booted it out. The pair of sand hills went back, well, here's this whooping crane chick. It doesn't recognize a whooping crane—another whooping crane as a whooping crane. It only recognized sand hills. And so, when they go back, they all sort of spread out all around Idaho and they never found each other. And so, obviously, the program never succeeded because

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there was no reproduction going on because the birds didn't recognize each other and they couldn't find each other because they spread out so much over the range. They didn't tend to go, so, together. So you look at some of these smaller birds, maybe the same sort of situation ends up with them is that over time, as the numbers continue to go down, it becomes harder and harder for them to find mates. And, in addition to other mortality factors, natural mortality factors like snakes and—and predators, hawks and raccoons and possums and other—other predators that probably weren't very common here initially because we had wolves and other things—coyotes that were taking care of a lot of these ground predators. Which is what allowed all these birds to be able to nest in the particular situation that we find them in now. And if—you're probably found cardinal nests in your yard and it's usually in a fairly open shrub, not very well hidden, well, there's a reason for that. It's a reason because the—that bird probably never had severe predation so it didn't have to evolve to really hide its nest. Now, that doesn't

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work today. You really do have to be very conscientious if you're a bird trying to build a nest and raise some young to hide your nest against all of these—all of these predators. So, that's the impact that—that's, let's say, cowbirds might have and if you look at it from the ramifications of cowbird and then on out the line of—of fire ants and all these other things that are impacting these species, I have to say that things don't look particularly rosy because, in reality, how do you ever begin to cope with just those two issues? Not bringing into account all of the habitat loss and the habitat changes through the introduction of exotic species of plants that our birds haven't evolved with, so on many of these in—exotic species of plants, the reason that they're so invasive and that they do so well is because they don't have any predators of their own. It's not just animals that have predators, plants have predators, too. And, in most cases where you see these exotic species of plants, rarely are there ever any insects feeding on the leaves of those particular plants.

David Todd: Could you give some examples, maybe about Nandina or Privet or Tallow trees?

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Jesse Grantham: Sure.

David Todd: Things that you see here in Texas?

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Jesse Grantham: Well, I think, in Texas, there—there are a number of them. Certainly, Chinese tallow is one where it's a very aggressive species of plant and there—there is some suggestion that there is a chemical that is released from the leaves of tallows—tallow leaves, so when the leaves fall on the ground these—these chemicals leech out into the soil and actually prevent other plants from coming up as under story. So—so the tallow, as its defense mechanism to make sure that it is able to sustain its stuff and—itself and increase its numbers, it eliminates—it el—eliminates competition from other plants. So—and what it does is—I never see insects feeding on tallow leaves. And that's probably why the plant is so successful because it's not having to defend itself or it's not being predated on by native species of North American insects, so it has a defense mechanism right there. And it may be chemicals in the leaves or could be many other

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factors, but insects don't find the leaves of Chinese tallow very palatable. And you—and there—there are a number of invasive species of plants that are that very same way, which is probably why they're successful. Number two is most of those invasive species, Chinese tallow, Brazilian pepper, Privet, Nandina, even to some extent, maybe Pyracantha, there are a whole series—most of them have some defense mechanism which keeps them from being predated on. So there's no control to keep that plant in check. The other thing is—is that, in most cases, they don't produce—in addition to not producing insects that birds could eat on, they don't produce seeds or fruits that are palatable to bi—our North American species of birds. Now, over in Japan or China, where some of those species originally came from, yes, they probably have—over thousands of years, have—birds have evolved to feed on those fruits. One example of this, and I'm sure it happens in many cases and we haven't really paid much attention to

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it. Pyracantha, everybody grows this plant, it's a very easy plant to grow. It can grow in a—in a parking lot and pour a cup of water on it and the plant'll take off and it—it won't need any—it doesn't have any specific requirements. It doesn't need to be pampered, which is one reason why it does so well in the nursery trade because nurserymen know that you're not going to come back in a month or two months and say my Pyracantha died because it's extremely tough and hardy. Which is, realistically, unless you're interested in collecting specimen species of plants, most of the plants that you buy in the nursery trade have to be fairly tough. If not, the nurseryman's not going to make any money because people are always going to be coming back and saying, this plant didn't grow well in my yard. So things like Pyracantha, that's a perfect—oleander is another one, which is—I think it's from the—the Middle East somewhere, leaves are toxic,

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flowers are toxic. You can—you can plant that plant anywhere and it does really well and it has some color to it and—and people are really interested in aesthetics, more so, probably than utility, how the—what function the plant has in the environment. And *Pyracantha* varies. Well, let's back up. *Pyracantha* was thought for many years—the berries were thought to have produced alcohol. As the—as the berry matured in the fall, it produced and—and it—and it wasn't eaten right away with this sort of cold temperatures and warm temperatures and cold temperatures and warm temperatures, it was always thought that the plant—the berry, I'm sorry—began to ferment and produced a—a alcohol in the berry and that the birds would come and eat the berry and then they would get drunk and fly into plate glass windows and fly into cars and that sort of thing. And so that was kind of the standard response was when birds acted like that after eating

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Pyracantha berries was that they had gotten drunk and everybody kind of laughed about it. And it was yeah, the birds are all drunk again. However, there was some research done on those berries—I believe it was out in California—where they found out that there was not alcohol in those berries, there was a chemical in there that essentially caused the birds to hallucinate. Now this is not a native plant. This is from China and—and Asia. Over in China and Asia, birds do eat those berries and they're not affected by that chemical because, again, from the evolutionary process, they have adapted to be able to eat *Pyracantha* berries and not respond to the chemical that's in there. That makes sense, that's been going on for thousands of years. But in North America, that chemical is not present in our native American fruits and berries that birds eat. And so, they respond to this thing by hallucinating and it causes the birds, obviously to act drunk and stagger

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around, but really they're having a little LSD trip or something. Which makes them, obviously, susceptible to predation and they're crashing into windows and cars and being run over and being caught by predators. So, I wouldn't be surprised if there are many, many exotic species of plants that—that have very similar chemical characteristics in fruits and berries that cause the same kind of reaction, maybe a different reaction in some birds than—than the crashing into windows and all. But I think what that shows you is that there can be some very serious, detrimental impacts on birds by bringing in exotic species of plants and we tend to think very lightly of—of this sort of a thing, when in reality, it's causing a serious impact to birds. I think where all of this goes is that—of when you start to look at plants and—and look at all these other impacts that—that cowbirds and fire ants and what have you are having on wildlife, and on ecosystems, that how very complex this system is and that it's not—it's not a very simple system that's

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functioning out there. Yet we tend to look at it as something that's—that's very explainable. We can—we can come up with all sorts of answers to every problem that goes on out there, but in reality, we don't really know what's going on in—in many cases. Or, in general, if we do know, it's too complex for the average person to grasp and so most—most people don't go there. They try to find a simple solution for the problem rather than looking at it in a much deeper way. There's that great Buddhist saying that says those who think they know, don't know. Those who know they don't know, know. And I think most of us are in that place where we think we know, but in reality, we don't know. And those of us who are always questioning and saying I really don't know, those are the ones that do know. That you've really got to think much deeper about this and there's something much more complex about this system than we'll ever be able to grasp.

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Which means, then, we have to take it a lot more seriously than, I believe, that we do in—in many cases. So that's—that's really my concern is—is how do you—how do you take this complexity of nature and make it something that's much more palatable and graspable, if there is such a word, for the average person so that it makes sense to them and they develop an empathy for it and then they want to go and do something to make it right again. Or at least to understand and realize the impact that they are having it, that they would then change their behavior to have less of an impact. And to do that, then you have to understand that it's not—there are not simple solutions to everything. Everything is tied and attached to something else.

(misc.)

David Todd: Jesse, we've talked about the effect of exotic birds and of plants on native species and I was wondering if you could talk about some of the native species which perhaps are most are the endangered species and what the trends are there and what kinds of interventions you've seen to try and help them?

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Jesse Grantham: Right. Well, I've worked on—I—a number of endangered species and maybe that comes from my childhood experiences of when I see something really in trouble, that I wanted to get out there and right the wrong. So parrots, of course, in Puerto Rico and the Bahamas were two very severely endangered species. I think Puerto Rican parrots were down to eleven individuals when I was there in the early 70's and I think the numbers are only up to 45 or 50 birds. Yeah, that's a very slow, slow process. Lots of problems there. The birds have been pushed to the higher reaches of Luquillo National Forest. That wasn't their original habitat historically, so they're in marginal habitat right now and are just barely eking out. Whooping cranes is another example, down to 15 birds in, I think, 1939 and their—there's a possibility they'll break 200 this year, but my gosh, look how slow that process has been and the amount of time and effort that has been put into getting whooping cranes to that point and then how quickly that could change if you had a—an oil spill or a chemical spill and the Intracoastal Waterway around

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Aransas National Wildlife Refuge during the winter months when the cranes are there, you could wipe them out very quickly. But, say on the other hand, brown pelicans have been a real success story. And they were down to, I think, 15 individual—40, sorry, 40 individuals in—in the late 60's. No breeding brown pelicans on the coast in the 60's and certainly, 50's, too. And this year, there were 3200 pairs nested on the Texas coast, so that's a real shift in the other direction. You know, and you'd wonder, I'm not sure why that tremendous explosion when we went through sort of a period of no nesting brown pelicans. Of course, DDT was considered to be the culprit in that particular situation and we've gotten DDT out of the environment, but of course, there are all these other new chemicals that are starting to show up there and they may be a lot more difficult to deal with than DDT. But brown pelicans certainly are a success story. Along the coast, just—just jumping away from endangered species, there are probably 13 or 14 other species of herons and egrets and terns that are showing long-term declines and they'll probably

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eventually—maybe in our lifetime—some of those are going to end up on the endangered species list. There are maybe ten other species that are showing some slight increases. Maybe they're a lot more adaptable than the ones that are showing declines. Maybe it's something to do with the type of food that they're eating or the disturbance. Some species are more adaptable to disturbance than others. And then, I did work on California condors for about six years and there are probably about 200 California condors in existence now and there may be 80 something birds out in the wild. But you look at what the—the issues are confronting them. As an example, like there are many of these others here in Texas that we're dealing with, lead is one problem. Ingestion of lead bullets causes lead toxicosis in—in the adults and so they subsequently die. But, now even a much bigger issue has come up and that is the issue of these birds, the adults picking up small pieces of garbage and trash, like pop-top lids and bottle caps and little electrical conduit straps and—and other little pieces of metal, glass that they think are calcium

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because condors eat dead animals and dead flesh. And so the only way they get their calcium is actually through small bone fragments. So at least for them, up here in their brain, any small little shiny object represents calcium. So we, of course, throw these pop-top lids and trash and stuff all over the place. Well, these birds are picking up all of this trash and they're feeding it to their young, thinking that it's—probably not thinking, they just assume that it's calcium. And, of course, if doesn't get digested and all of this stuff builds up and builds up into the crop of these young birds until eventually, the birds die. So every young California condor that's been hatched in the wild from captive reared birds has been fed junk and every one has died. So—so you could see how this thing sort of always goes around and comes back to us that it's something that—some cause that we've affected the birds with. And, certainly when I worked on condors and then brown pelicans

here in California—in Texas, I certainly took a lot of abuse from a lot of folks about why we want to save endangered species. What good is that bird to anybody?

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If brown pelicans suddenly disappeared or condors disappeared or whooping cranes disappeared, it certainly wouldn't have any impact on me personally or my ability to survive. But I think that there's a much more deeper philosophical issue to all of this than just a biological issue of—of having that animal out there. And I think we may have talked about some of this in the past is that there is a—a desire in many people to protect the integrity of original objects. And certainly, collectors are in that particular—encompassed in that particular thought process. And you—you know, as example, we had the Smithsonian Institution that—that harbors the original object of—the original of so many objects, like the first light bulb sits there in the Smithsonian and the first airplane sits there and, I don't know, Blue Boy hangs on the wall and what have you. You know, why do we spend so much money—why does the federal government, our tax dollars, nobody complains about that, spends all of these millions and millions of dollars every year to protect the original of all of these objects. Protect the integrity of the original object. What good does that light bulb do me? What good does that first airplane—

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Lindbergh's airplane do hanging in the Smithsonian? I can't fly it. All I can do is go in in there and look at it. But—and for millions of people, it probably means very little. It's just an object to look at. Same with all the artwork hanging in the Smithsonian. So, I think, though what we see is that within people, there really is a desire to protect the integrity of the original object, whether it's a piece of artwork or it's the first light bulb or—or, for those like myself, it's an animal or a bird species or a plant species or an insect. Is that you know that once that's lost, you'll never get it back. It's like cutting up the Mona Lisa into a hundred different pieces and then sticking it all back together again and hanging it on the wall. It's not the same thing. So, you think if these species get down to such a point where you have to take them all out of the wild, put them in captivity and breed them and put them back out there, like we've done with condors, all

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of a sudden, all these other issues jump up in your face. You know, that we had never dealt with before and that the wild birds had actually been able to circumvent because of their behavior because they didn't hang around places where you could find pop-top lids and little rubber gaskets and glass and that sort of thing. They tended to hang around in much more wilder areas. Now we're releasing birds in areas that are closer to human habitation and they're coming down on the ground and they're finding all this other garbage to eat. So—so when they—when you get to that point with an endangered species, where it gets down so low that you actually have to manipulate and change the behavior of that animal to try and get it to survive, it—it appears as if, in most cases, we're unsuccessful because we don't take in all of the ramifications on that particular animal. So, again, back to the sort of

Smithsonian and—and preserving those original objects, you can think—I mean, you—you question why would you spend—somebody

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spent 57 million dollars on Van Gogh's Sunflowers, you know, and—when, what is it? It's just some—it's some paint on a canvas that depicts something that is—grows naturally and you can walk out your door and see it at anytime. Why would you pay 57 million dollars to see it on a piece of canvas? Because it can't ever be reproduced again. It's the original and it's obviously—took a—it's a talent or a skill or a—something inherent in somebody that can't ever be reproduced. So we see humans, in many cases, although there are some people that would probably debate it, see that as worthy of protecting for, not sure for what? I mean, other than protecting the integrity of the original object. Where would you go after that? What is its usefulness? Does it have educational—what does the—what does the first light bulb do beyond the fact that it's the original object? Other than that, what sort of educational tool can you use from that

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original light bulb? Or some of the works of art hanging in there, how can they affect change or affect people? Apparently, it's more entertainment for the average person. For the collector, it's again, that same thing that motivates us in the conservation, environmental field is that you know you'll kiln—you can never reproduce that particular thing again and that you want to protect and save the original object. So.

[End of Reel 2289]

(misc.)

David Todd: Jesse, earlier we were talking about endangered species that you've worked on and become acquainted with as far as their plight and the effects that are damaging their fortunes. And I wondering if you can give us some other examples of birds from Texas that have problems, the piping plover, I understand is one. Prairie chicken might be another. Any others might come to mind would be very helpful.

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Jesse Grantham: Well, one that's—that's most interesting to me, and it's just come to light within the past couple of months, and it's one of these, again, sort of serendipity type of situations. I have a fellow working with me in my office and he has a friend who's gotten very much interested in piping plovers, which is a little, small shorebird. And it's endangered in the Great Lakes region of—of North America. And it's endangered on its breeding grounds but it's not considered endangered in Texas. It's not an endangered species in Texas, but it's endangered on its breeding grounds. And they began traveling up and down Padre Island National Seashore in the afternoons, looking at shorebirds on the beach. And they began to see piping plovers, which come to the Texas beaches to spend the

winter. They've been doing this for thousands of years. And when they come down, the individual birds stake out territories on the beach and they can be anywhere from probably 100 yards to 200 yards, depending on the amount of food that they find

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there and the quality of the—of the habitat. And this is right on the Gulf Beach, where the waves are crashing on the beach. And they began to notice birds that had bands on them, colored bands on their legs which means they had been trapped on their breeding grounds and had been marked by researchers in these areas, like Alberta, Saskatchewan and the Great Lakes region. And a lot of people didn't know where they went during the winter months or that they wintered in the Laguna Madre. And a—a lot of the Laguna Madre is inaccessible so people were not really there watching, looking for piping plovers. Well, Jane has discovered all of these piping plovers that are setting up territories and defending these little, small, linear territories along the beachfront. And they are—they are very defensive of those territories and they maintain those territories, we assume, through the winter. She hasn't had, obviously, a whole ch—a winter to look at this. So, with a GPS [Global Positioning System] system, and the birds being individually marked, you can drive down the beach and you can see bird one, which is a red band over top of a green band

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and plug that into your GPS system and then move on down. And you can come back everyday and there is the same bird at the same spot and they're all the way down the beach there that way. There may be 30 or 40 birds running down the beach, each one having its territory. To you and I, driving down the beach, it looks like a piping plover, sitting on the beach, taking a rest or whatever. We don't know what it's doing there. But to somebody like Jane who's doing the research on it, she's beginning to realize the critical importance of these beach habitats for this small, little shorebird, piping plover. Well, it wasn't too long before they began to realize that the impacts of people on this little shorebird and, particularly on weekends when people are driving up and down the beach. It's a 25 mile per hour beach and people are doing 50, 60 miles an hour down the beach and bringing their dogs and coolers and volleyball sets and all this and they're putting it right in—or alongside the territories of these small piping plovers, which then

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flushes these birds off. They can't use their territory so they can't feed there, which means they have to find some other place to go. And they can't just move over because then they're in somebody else's territory, another bird's territory, which is defending that territory. Not for pleasure, it's defending that territory because it has to—it has to defend that territory to survive. It can't just let all the other piping plovers go in there because there's not enough food there. And if—obviously, if you have too many sitting at the table, there's not going to be enough food to go around if there's only a finite amount of food to begin with. So—so then, what happens is they all get bumped down the beach and they end up in marginal habitats, or habitats that don't have any food at all and they just—they can't

do anything, but they sit all day. So they're not actually putting on fat reserves for the winter months or when something in the environment changes and maybe the food availability is not as accessible or not as prevalent as it would be at other times. Or all this stuff that's going on on the beachfront, you know, with regard to the

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availability of food. And I'm sure it changes with tides and temperature and all of that. So they've always got to be—be way ahead of the game. They can't be skating on the razor's edge. You've always got to be—be putting on fat and being prepared for that time when things are not going to be optimum. And, obviously, if you didn't do that, you—you wouldn't survive. But now they're being forced down to where there—there are maybe two days out of the week where they can't defend their territories and they can't find the amount of food that they need. And we don't know, at this point now, what impact that's having on the metabolism of these little, small birds and the survivability. She's beginning to see now, changes in some of the territory. Some birds are disappearing and new birds are coming in and what does all of that mean? But I think what it meant for me was how little we know and understand and appreciate the niche that these birds fill on our coastal beaches that we just accept for granted as, ah, it's just

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another little piping plover on the beach. Isn't it great? It's entertaining. We look at it and—and get pleasure from it, recreational pleasure, aesthetic pleasure. But, for that individual animal, it's a life and death struggle on a daily basis and so being run off of your territory means that you're going to be skating on the razor's edge. If you're off your territory for two days and come back and the water temperature changes and the tide goes out and that changes the availability of food. Then, instead of one day, maybe where the tide changes like that, you're now taking those two days where you couldn't feed and throwing that on top of the days when food availability is not going to be—or the food is not going to be available for you. So—so from an endangered species standpoint, you think, well, here—here's something in process, right now, you know. If the amount of traffic and the conditions on the beach increase so that the amount of time that these birds with—can spend on their territories is less and less, it's pushing that bird

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toward that endangered species listing, you know. Now we have a direct impact on that. That's—that's a—a cause that we've sort of put on the shoulders of this bird. I think, well, how do we deal with that? Here's just one example. How do you deal with these piping plovers that are setting up territories. They're heading toward endangered species status. There's no way they can get out of it. They can't change their feeding behavior. They can't change their biology. They can't change 10,000 years of evolution. We can change by encouraging people not to drive 60 miles an hour down the beach and swerve over into the surf and flush these birds off. Or there are areas maybe where you put people to have volleyball courts and—and picnics and that sort of thing so that you're not down, right on

the beach disturbing the birds, so, oh. The question is, how do we deal with the—just that one issue. That's just one—one bird and one set of issues and are we willing to put the time and effort into changing our behavior so that this bird is not then put on the endangered species list and then, who knows where it goes from there. But

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obviously, more time and money and effort is going to have to be put into that bird. Then, you think well, gosh, if that's happening to piping plovers, what about all those other birds that we see on the beach that we also take for granted? Are probably going through the same situation, you know, and we don't even recognize it or acknowledge that that's a—a potential problem. We just accept it. As I said earlier, based on the coast, there are about 13 species of colonial waterbirds who are seeing long-term declines. The reddish egret is one of them. It nests only in Texas and Florida and it nests on Audubon Islands. Largest colony is on Audubon's Green Island, in the lower Laguna Madre. And historically, that population was something like 3000 pairs on Green Island in probably the 1920's. It's now down to about 600 pairs, but it's still considered the largest breeding colony of reddish egrets in—in, certainly, in North America. Now why would this species be declining so rapidly? Oh, one of the possible reasons is that

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dredging—in dredging the Intracoastal Waterway back in the 40's and 50's, that we dumped a lot of spoil material onto these wind driven tidal flats, they're called, because down in the Laguna Madre and a—along a great deal of the Texas coast, the tides are influenced by winds rather than sort of lunar fluctuations. So the g—the egrets take advantage of the—that southeast wind blowing the tides in and then it—during the evening, the winds back off and the water tends to—tends to recede and back off of these flats. So in the morning, it's a good time to be out there on those wind driven sand flats, essentially, finding little small fish, which is what egrets feed on. Well, certainly down in the lower Laguna Madre, there was str—a tremendous amount of dredging and spoiling on all of these flats because we just looked at those wind driven tidal flats as insignificant, that it wouldn't be an issue if we covered those over. But now we're finding out the significance of those flats to reddish egrets because that's where we see them feeding now. Historically, nobody paid any attention to where reddish egrets fed.

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They just acted like all of the other long legged waders, walking around in water, picking up small fish. But they had a certain niche that they filled which we didn't pay any attention to. So I think that's why we're seeing those numbers going down is because the availability of places for them to find food has been greatly reduced. Plus, they're probably a series of other—other issues, like just the availability of food in general has probably declined because we've certainly filled in a lot of wetlands and—and a lot of nursery areas for fish, so it may be that fish populations, in general, have gone down. And the niche that reddish egrets fill in this much bigger, sort of, marine coastal ecosystem is...

(misc.)

David Todd: Jesse, earlier we were talking about reddish egrets and that they use the mud flats, the tidal flats that weren't appreciated at the time when the Intracoastal Waterway and a lot of the dredging was going on. Can you talk about other species that fill these niches that we might not have appreciated whether endangered or not? But, you know, that have suffered because people didn't understand the complexity?

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Jesse Grantham: Right. I think what we're finding is that, first, we're looking at the data now that's come in from 30 years of colonial waterbird surveys along the Texas coast. And until you actually have the data and it's begins to show a—a linear line in a downward sort of direction, you don't really think in terms of well, we should be looking at this bird or we should be doing something about it. Now, after 30 years of data, we're beginning to see, as I said, declines in 13 species. Even like the great blue heron—we're seeing significant declines in great blue heron populations. And you think, well, that seems to be a fairly adaptable bird. We see it sitting here on—on pilings, around docks and it—it's a panhandler. It sort of hangs around fishing piers and people throw fish to it and etcetera. But their numbers definitely are showing declines. White faced ibis are showing declines. Tri colored herons, snowy egrets, great egrets. A lot of the terns are starting to show some declines. Black skimmers are showing—certainly showing declines and that's an interesting species because not a lot of research has been done on it

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here, on the coast. And I—I have my, sort of, own theory about why their numbers are declining. I've watched the bird for a number of years. The interesting thing is that rarely do I see black skimmers at a colony with large numbers of chicks. Usually we'll see a—a colony of chicks at—at the fledging season, which most of the young birds, when they've moved down to the edge of the beach, maybe one chick per pair. And then, at some point, we'll find a whole series of—a whole bunch of young black skimmers that have died on the island, even though they're about to fledge. And it hasn't just happened on one island, it's happened all along the coast where suddenly, in one day, a wh—a whole mess of the young birds will end up dead. So that's kind of sparked interest in—in some of us, you know, as to how much longer can we continue doing this, first of all, and—and black skimmer adults are not breeding anymore. Or they're—whenever they are breeding, they're not producing young. And what do we do to find out what the

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problems are? And it wasn't until you begin to see that tremendous drop that that triggers a response in you to say we better go back and see what's going on here. My own theory is that, historically, black skimmers nested on the open barrier beaches, on—in sand dunes or right along the edge of the—the sand dunes on the beach. And there were probably few predators there and they didn't have to nest with the laughing gulls and—and maybe black

crowned night herons, which are predators on little, small birds. Laughing gulls love to eat eggs and love to eat little, small, unguarded chicks. And black crowned night herons are the same way. They love to stalk through these tern colonies at night—and they're nighttime feeders, feeding on little, small, unattended chicks. Well, what has happened is now is there—there is not any place for black skimmers to nest that's undisturbed on these barrier beach islands anymore because of raccoons and other predators that are found out on these islands. So, I mean, those big, open expanses,

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they're not finding nesting spots. So they're moving inland—not, essentially, in—into the bay systems and they're having to nest on these islands with, you know, 19 other species of waterbird, which—I'm hypothesizing—historically, that they probably didn't have to do that. Black skimmers are nocturnal feeders. You know, they—they have evolved with that long lower mandible for a reason, not just because it's different. There's a reason why that lower bill is that way and the assumption is is that they are feeding at night on all these bait fish that come to the surface at night when they—when those big fish come up because they know that it's safer. And that there, historically, must have been so many bait fish out there that all the black skimmer had to do was just cruise back and forth along the water and catch these little, small bait fish with that lower mandible. As a fish would hit it, the upper mandible would clamp down on the fish and catch that little fish. So from an evolutionary standpoint, you think, boy, that's pretty spectacular. That that bird evolved to fill a niche, a nighttime, nocturnal niche because

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all of these fish came to the surface and it would—found, for its survivability, it was easier to fish at night than it is during the day. And then it evolved with the long bill and this wonderful flight that it has and, I think, probably waters are a lot calmer at night after the sun goes down. The water gets calm so it's easy to fly along the surface of the water and catch these small fish. But, the—the ramifications of that are that then maybe you're not attending your nest at night. So you're out fishing and now you're on an island with a—you're on an island with a bunch of other birds that possibly are walking around and can see at night. And so, while you're off fishing, there's somebody coming in and nabbing your—either your eggs or your chicks, whereas historically, you've often nest on barrier beach islands where you didn't have predators walking around, stalking around in your colony at night. That's—that's a possibility. I don't—so we're going to do some

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research on that, hopefully this spring and see if we can figure out exactly what's going on. Maybe having some cameras set up on the colonies at night so we can see if there's some sort of activity going on in there that would be taking these young birds and their eggs. Thing is, black skimmers lay three to four eggs, yet they only appear to fledge one chick and, in many cases, none. So you don't evolve to lay four eggs like that unless there's a r—unless there's a reason, you know, for putting all your effort into laying four eggs if you're

just going to raise one chick. Why not just lay one egg and then you wouldn't have to produce these other—all these other eggs, you know. If the chances are you're going to have success in raising one chick, why go through all the process of laying more eggs. Unless that there was more food available, historically, when you were—had the four eggs and you were raising four chicks. You know, you were being

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successful. Or you didn't have the predation of the other predators taking your other three eggs or all your four eggs or all of your chicks, so. Anyway, I think that it has something to do with maybe the nocturnal feeding of black skimmers, but long story short, is that we're seeing numbers certainly declining pretty rapidly. That's one. Least tern is another, where there was something like 7000 pairs along the Texas coast in 1973. I think it's down to something like 3 to 400 pairs now along the Texas coast. And what we find is that those birds want to nest on, again, oh, probably barrier beach nesting islands or on clear, unobstructed sand—open, big, soft sand flats. And we have very few of those around today and the birds tend to look—to find those kind of areas today where there aren't predators are more likely to be found in suburban, urban areas along the beach where you have some people activity so you don't have maybe snakes and—and that sort of thing disturbing the birds. But then you have all the other associated human

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caused factors like people walking on the beach or dogs or cats or those sorts of things. And that has a severe impact on least terns. So very, very seldom do you see least terns raising any young birds. And that's probably why we're seeing this tremendous decline in least tern populations. So.

(misc.)

David Todd: Jesse, you've talked about a number of coastland wading birds that are endangered or common, but are suffering different kinds of fates. Many of them, though, are helped and protected by the, I believe it's about 13,000 acres in the coastal sanctuary program along the coasts, a number of barrier islands and dredge spoil islands that Audubon helps manage. Can you talk about how that program got started and what sort of role you think it fills?

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Jesse Grantham: Sure. That's probably one of the great success stories for Audubon, and we have a lot of them, but I—that's one of the more—more interesting and—and appealing conservation stories that I think Audubon has been involved in. We actually hired our first warden; I think it was in 1905, for the Texas coast. I mean, that was a long, long time ago and ever since 1905, there has been a paid Audubon staff person, or persons, in the state of Texas. And so, Audubon has had a long, long commitment. Longer than any other, certainly, conservation organization in the U.S. And it—it's fascinating to go back and look at the

history of some of these early wardens and the kinds of things that they had to deal with back in the 1900's. The primary reason that we got involved in—in spending time on the Texas coast was the decline in—in colonial waterbirds, the long legged waders like the herons and egrets and some of the terns. And those birds were

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being shot and used for decoration on—of course, everybody knows that story, decoration on women's hats. The long plumes were being used for decoration and the time that you collected those birds was in the spring when they were at their nests and they had these beautiful, nuptial feathers. And those were the highly prized feathers that all of the feather traders wanted. But in addition, young chicks in the nest were used for crab bait and the eggs were used for food and there were a lot of other issues impacting colonial waterbirds at that time. And so, as I said, as early as 1909, Audubon actually hired its first warden and had them working on the coast and, actually, it was right around the coastal bend here of Texas. In 1922, we hired our first warden for Green Island and that was the island in the lower Laguna Madre that had the largest reddish egret colony on it in the world. And there has been a paid Audubon staff person managing Green Island ever since 1922. We had a f—tremendous experience a number of years ago. We

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were over in Florida at one of Audubon's research stations—and that used to be the—the headquarters for Audubon's ornithological research work. So all of the original field notes all ended up in Florida over time, from all over the country, because they were all—all these wardens were underneath one department. Even in the 20's, there was a department. And rummaging through some of these old files that had silverfish and cockroaches running through them were the original field notes from R.D. Camp, who was one of the first wardens on the—on Green Island. And his original handwritten notes, which were three or four pages long, about what he was seeing on Green Island in the 1920's and—and, of course, right up through the 1930's and then there were a series of wardens. And they all were required to keep detailed records of everything that they saw and everything that they did on all of these islands. So, it's fascinating to look back and see that these guys had to take horses and donkeys and burros to get out to the, sort of—as close as they could to Green Island and they would have to take a sailboat and sail

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across the Laguna Madre and up to Green Island. And they actually lived on these islands because it was too much time to go back and forth. So you took all of your provisions over. They built cabin—a cabin on Green Island and actually lived there. And some of the wardens that were married actually brought their families and children out there to live on the island in the summer months during the breeding season to protect these colonial waterbirds. So, these are some really tough, tough people in those days. They had to be. You didn't have these, you know, 90-horsepower, Evinrude boats that were slicing back and forth across the—the bays and estuaries to get to these islands. And it was a tremendous

amount of work. And, for a lot of them, it was life threatening because you were actually faced with protecting these birds from eggers and from plume traders who had been doing this for years and years and years, killing these birds during

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the breeding season and—and not being confronted by anybody. I mean, there was nobody that was stopping them, so suddenly, here is this—this old warden, or young warden, from the Audubon Society telling you you couldn't do that anymore. And many of them were threatened. And, of course, the story of Guy Bradley, over in Florida, 1905, one of our first wardens being shot by plume hunters because he was trying to stop them from egging the islands and shooting the birds. Well, you have to admit that back in 1905, or even the 1920's, for somebody to feel that strongly that they would put their life on the line for protection of these birds, sort of, probably—almost goes beyond where many people—what many people would do today, knowing, well, why is that? That—you know, I guess we do it in different ways today, you know. Maybe we go through the legal means, but there was no alternative in those days. That you had to do that to protect

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those birds. So, 1922, Green Island and all along the Texas coast, 20's, 30's, 40's, we had wardens. It was Robert Porter Allen and, I believe it was 1941, that we came down to Texas and started doing the work on—the research work on whooping cranes, looking at their foraging behavior, what they were feeding on. And it was Robert Porter Allen, Audubon biologist, that wrote one of the definitive works on whooping cranes and where they were spending their wintering time here and what they were feeding on, created an education program to try and protect whooping cranes during migration. Of course, that was the time when nobody knew where whooping cranes nested. All they knew was that they left Texas and flew north and nobody knew where the breeding grounds were, which is in Wood Buffalo, Canada. So, that's just continued on. It was really 1971, Audubon hired a warden in the Corpus Christi area to protect the brown cow—pelicans when the

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number got down to 40 individuals, no breeding and then there were one or two pairs that were—tried to nest. And then we focused all of our efforts on those islands where the birds were trying to nest and we protected them. And as I say now, we've got 3200 pairs of—of birds. So, yes, we do lease about 13,000 acres along the Texas coast. You could say that at any point when you go out on the Texas coast to look at birds or go fishing or whatever, almost every bird that you see that flies by has probably been raised on an Audubon island. There's nobody else that's really doing the—that type of work to the extent that we have for such a long period of time. And I think that certainly gives credit to the organization for sticking with this protection effort for such a long period of time. We're almost up to 100 years of Audubon consistently having paid staff in Texas. What that does say is that we've seen that as a—Texas is a really important state and there are some really important issues here that we need to be involved in.

David Todd: Can you describe what some of these places are like? The rookery islands, perhaps give Bird Island as an example or maybe one of the others, Green or...?

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Jesse Grantham: Well, I think one of the most—well, they're all fascinating. You know, they're all interesting to go to. Probably Sundown Island in Matagorda Bay is—it's on the central coast—one of the most—one of the most interesting. It is not a natural island, it was an island that was formed during the construction of the Intracoastal Waterway. It's right out in the middle of Matagorda Bay so it—it gets beat on all sides by wave action. Not being a natural island, it's—it's—it's pretty loose in its foundation because it doesn't have a—a good, solid clay foundation so it wouldn't, and doesn't, take much to reduce the size of that island in size. No—but as an example of—of our ability here on the coast, we have a—a warden there, Chuck Smith, who's, I think, 82 years old this year. He was hired when he was 70 years old and didn't know a lot about birds but is now considered an authority so there is hope for all of us. And he has been able to work with all of the agency folks along the Texas coast, Fish and Wildlife Service, Corps of Engineers—

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particularly the Corps of Engineers, to continue to have this island reinforced and protected and have, what we call, beneficial material put on the island now from dredging the Intracoastal Waterway. And those waterways have to be dredged, probably in some cases, two times a year, depending on what the currents are like. So, Chester's been able to always have new material put on his island and—and when we started managing it in about 1986, it was eroding rapidly and it was down to probably about 30 acres. Now, it's up to about 72 acres and it is one of the largest colonial waterbird colonies on the Texas coast with, I think, we have about 18, 19 species of birds that nest on that island. The reason that they're there, obviously, is when Chester's creating these islands, he's—he's creating habitat for specific species of birds. Like habitat for skimmers, habitat for royal and sandwich terns, habitat for Caspian terns. He's planting trees for all of the long legged wading birds that like to nest up off the ground. He's got habitat for brown

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pelicans. He's creating, actually, nesting platforms for brown pelicans and there—there were never—no records of brown pelicans ever nesting on manmade structures before and now he's got all of his brown pelicans nesting on these manmade structures. Of course, they're safer. It's cooler up there when you're up off the ground and they're very successful. I think this year there were probably close to 18,000 pairs of birds nested on Sundown Island, a truly spectacular, natural history event to go and witness, to see all of these birds carrying on all of this process of the last 10,000 years that they've been going through to try to sustain themselves. And you can get right up fairly close to these islands and see the birds bringing in food to their young. I think one of the most interesting things is to take people out there and at the time when the royal and sandwich terns all bring their chicks down to the edge of the beach. And there may be two to three thousand little, small chicks

and they're all—all together. The adults form this large cresh of chicks and it's probably for protection that all these little chicks get together. And they're not capable of flight yet. Some of them are only this high and some of them

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are many three-quarters grown, but they come down to the edge of the water where it's cool and few people realize that those adults don't just come in and feed any chick that happens to be sitting there with its mouth open. That out of those two to three thousand chicks all crammed in together, the adults can and will find their own chick and they will only feed their own chicks. So it's interesting, when you get people—talk about observers and teaching people how to be good observers, just to watch an adult royal tern come in off the Gulf of Mexico, through the pass and come toward the island. And that adult starts calling to its chick. And its chick knows its parent's call and the parent knows the chick's—that own specific chick's call out of three thousand other little chicks that are also all calling at the same time. Because parents are coming and going so they

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are chicks calling everywhere. And that adult will cruise back and forth, back and forth over this creche of little terns, all with their heads up, all calling because they—of course, other parents are coming in doing the exact same thing. And that parent can back and forth and back and forth and then drop right down next to its chick and give its chick the fish and then take off. Now, you say well, how does it—maybe it's just any chick and maybe the parent just finally gets tired of holding the fish and is just feeding somebody else. But that wouldn't be from a genetic standpoint and all that we know about animal survivability that adults are not going to feed somebody else's chick. They're only going to feed—they're only going to take care of their chick. Not too many animals are altruistic that, sort of, take care of somebody else's offspring. You want your offspring to survive and, sort of, your genetic lineage to survive, not somebody else's, so nature

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doesn't really have space in there, in most cases, for any altruistic behavior. I think, maybe elephants might—might do that, but.

David Todd: You've told us about the spectacular refuge out on Sundown Island and I guess it's replicated at other sanctuary sites that Audubon manages. But I'm wondering if you could also tell us about some of the spots on shore, some of the Live oak mottes, in particular, High Island or some of the ones onshore, such as those in Rockport area?

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Jesse Grantham: Rockport area. Well, yeah, Rockport, I'm—I'm most familiar with. Of course, High Island is also a great place for songbirds coming in off the Gulf of Mexico in the spring. Rockport, I'm more familiar with and it—it is truly of a spectacular ecosystem of

these large oaks—with windswept oaks right on the coast that obviously provide a lot of food and cover for neotropical migrants coming off the Gulf of Mexico in the spring. It's—but as it turns out, it's not just spring. It's also in the fall that a lot of birds use this coastal Oakmont habitat for food and cover and protection. It's ironic that—that we don't appreciate those oak mottes and, to a great extent here along the coast, because there are so many of them and I always have a—sort of a running battle with the—with the community over destroying some of these oak mottes to put in chip and putt golf courses and used storage units. And you'd destroy the aesthetic value of the community for some

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short-term economic benefit, which those kinds of facilities, in your most aesthetically attractive parts of the community, aren't going to support the community over the long haul. People are going to come to these communities because of the aesthetic values, not because of the chip and putt golf courses and the used storage units, which are put up and which don't last that long anyway because of the hot, humid, salty air that's blowing on them and you soon discover that there's this huge maintenance cost, but trying to keep all these things going. But the oak trees have survived over thousands of years to be able to cope with that and—and certainly, from an aesthetic standpoint, as I said, that's what people really come to and enjoy. And that—that sort of takes us into the whole hummingbird celebration event and how that got started. I was living in Corpus Christi and—but spending some time up here in Rockport and we were driving around one day,

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lamenting the fact of this loss of these oak mottes for all of these little, small businesses that, certainly in the long run, are not going to sustain the community and that there were great losses in them, in many ways. Aesthetic, as I said, and economic, from destroying that which makes your community great. And why wouldn't you recognize that which makes your community great? Why would you want to be cutting out the very thing that people come there to enjoy? Only from the—the economic aspect was what was attractive to people. They missed the whole aesthetic value, which really was the thing that brought the economy to where it is in these little towns to begin with. People coming here to visit and spend money. And so, we were riding around, thinking, you know, what can we do? How can we get people in this community interested in protecting the resources of the community and we drove into a—a driveway to turn around, over in a little town called Bayside, which is on the west side of Copano Bay and in front of us,

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there were some hummingbird feeders and there were about 200 hummingbirds around these feeders, feeding at these—the sugar water that had been in there. So we sat looking at this event because I had never seen anything like this before, and this was in September, during the height of migration—hummingbird migration. I didn't know that at the time, but—and I said boy, you know. That is absolutely amazing thing to see. That's a natural history phenomena taking place, you can't see anything like that on the Discovery Channel

on TV and here it is, live and up front and right in your face. What an experience for people to be able to witness this kind of thing going on. And I said we ought to create some kind of an event out of this, using the hummingbird as—as a vehicle, as a leverage to—to bring awareness to that bird and—and the habitat needs of that bird. And that maybe there would be some economic spin off from this. And I was

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sitting in the front seat of the car and there was a friend of mine, Betty Baker, sitting in the back seat and we were all watching this and I said somehow or another, we need to put together some kind of a festival. And I said, Betty, you're the one to do this. You could really put together this festival and—and make it happen. I'm not a good planner like that. And so, we kind of rolled that idea and laughed about it and talked about parades and people dressed up as hummingbirds and everything. But, in the—but in—in reality, we all knew that what we wanted to do was to take this little hummingbird and use it as a vehicle to stimulate interest and protection in the community.

(misc.)

David Todd: Jesse, earlier we were talking about—of the origins of the Hummer Festival. Can you—Hummer Bird Festival, I guess it is.

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Jesse Grantham: Right. And the idea was called Hummer Bird Festival was because it—there were really—we were interested in other birds, other than just hummingbirds and it—I wanted to make sure that we all know it wasn't just because we had an interest in hummingbirds, that any one of the three of us that were in that car that day had any specific interest in hummingbirds. We immediately saw the—the impact that that hummingbird could have. It's a very charismatic species. It's one of the—what I call, one of the three most charismatic birds in North America, purple martin, eastern bluebird and hummingbirds are the three most charismatic species. And you can do a lot with those species, organizations and books and whatever have been written and programs and videos have been done on all three of those species. For whatever reason, those three species get a lot of attention. So we knew that the hummingbird could really have a tremendous impact.

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Not very many people see hummingbirds up close and to be able to bring children and adults to come down and see a hundred hummingbirds at a time, up close would be a—a real draw in a lot of ways. So that first year, and we kind of mulled this idea around, we never really let it go to sleep. We kept pushing on it and that was in September—I think it was September of '87 and so the next year, I think it was in July, we went to the Chamber of Commerce. Betty was actually very effective at working with people in the community and she brought together people from the local bank and the Chamber of Commerce and the

Tourism Development Council. And we had a meeting and I gave a program about hummingbirds and how I thought that they could impact this community and that was sort of the beginning of a little seed of ecotourism, that people would come to Rockport to see hummingbirds in the fall, after Labor Day when most of the

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restaurants and—and bed and breakfasts and motels really go into a slump or close down altogether. It's the end of the tourism season. That you could have people coming back into the community, pump up the economy again and—and take advantage of a natural history phenomena that you have in the community. So Betty's approach was we would give this talk and then we would ask the Chamber for some financial help to get the event going. And I think that they gave us 250 dollars to sort of help us that first year. And we were going to put this event on in September. This was July. So, immediately started scrambling. Betty contacted the Terrell's out in California who have written a number of books on hummingbirds and they agreed to come. And we got the—the Women's Club building in downtown Rockport, which wasn't air-conditioned and was just a one little single building, sitting on the corner lot. And we did a lot of advertising in the

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newspaper and on the radio and a little bit on TV and 200 people showed up that first year, 1988. And we went back to the Chamber after that event was over and the Tourism Development Board and said we had this successful year, we want to do this again. Would they be willing to support us again? And I think they gave us 1500 dollars or 2500 dollars, something like—they saw that there was potential there. They weren't convinced yet because this was still an oil, fishing and gas community and to put an event on and put money into a hummingbird celebration was, I think, beyond the scope of most of the people in the community. They hadn't seen anything like this function. So the next year, we had the celebration again. I think we moved to another building, I'm not sure that that was air-conditioned yet and this is in September, so it was pretty uncomfortable. But we had, I think, 800 people show up the next year. Went back to the

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Chamber the next year and I think they gave us 5000 dollars to do it and I think that next year, we had 1500 people show up and the next year, the Chamber gave us a blank check. You know, 10,000 dollars or whatever it takes, because everybody in the community now saw the advantage of having all of these visitors come in. And, unlike a circus, the money stays in the community. A circus comes to town, when the circus leaves, your dollars are going out of town with the circus. They're not staying in the community, whereas in this particular case, money's going to motels and restaurants and gas stations and all the amenities that people have. Grocery stores, etcetera. And the estimated number of people that visit the hummingbird celebration now is about four to five thousand people during a four and a half day event in Rockport. And it's estimated about a million dollars comes into

the community in one or other, directly associated with the hummingbird—Hummer Bird Celebration. So it definitely had—it definitely had an

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impact on the community. You know, lots of people are planting gardens for hummingbirds. There's a whole tour in the community now during September, when you can go visit homes where people have planted native—native plants that are beneficial to hummingbirds and other birds. And birding brochures have been produced and birding guides and land has been acquired. You know, we acquired the Connie Hagar Sanctuary, which was Connie Hagar's old home site and—and the city has really focused a lot of their attention on trying to be more—more friendly to bird watchers and provide them with more information about places to go birding, since birding is the—one of the most popular hobbies in the U.S. right now and it's growing. The spin-offs again from—from this particular celebration are that there were a number of other festivals that were then

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produced around the country. And they're innumerable festivals, all experiencing great economic benefit from having these bird festivals in their communities. Long story short is, though, however, you're not going to have a successful festival unless you have habitat for—for the birds. And so that's the bottom line is that the community has to understand that to continue to reap the success of this economic input in the community, you have to continue to protect resources, the natural resources, which watch—what brings the birds here to begin with. I'm not sure that that's quite made the—quite impressed the city fathers in most of these communities yet. I still think that, in—in many of the festivals that I've been to, and I think, to some extent in Rockport, it's assumed that the hummingbirds will always be here and that, in reality, you don't really have to do too much to protect that. Your—you leave it up to the individuals.

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Essentially, that's what happened here and, certainly at Rockport, is that the city doesn't really have to do an awful lot to make sure that there are hummingbirds because volunteers and home—local homeowners are the ones that are bringing the hummingbirds in to—to their yards for people to see. Which, on one hand, that's great. You don't have to build a civic center or any other structure facility to ha—to house people. All you need to do is have the natural habitat and then you will have that. But, as I said on the other hand, the real purpose behind us wanting to create this festival was the conservation spin-offs that would come from it. If you go back when I said we saw the hummingbird and said that's what we're going to—that's the animal that we'll use as the vehicle to drive a conservation ethic, maybe, in Rockport and attempt to change people's behavior so that they begin to appreciate what they have here from a natural resource standpoint. That was the hope and that every speaker in the early years always

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had a conservation message in their program. I'm—I'm not sure that that—that that has continued. Or that what we had hoped for really has happened yet, where there is really a conservation ethic or change in behavior has come out of the hummingbird celebration. And I think from an ecotourism standpoint, that's what—that's what kind of initially drove that whole ecotourism agenda across the state and across the country. Is that if we could people to come to our community and spend money, that it would—it would, in some way, change people's behavior so that they would want to protect the habitat?

(misc.)

David Todd: Jesse, could we resume? We were talking about ecotourism and the kind of effects that it's had.

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Jesse Grantham: I was—I was talking about the—the long-term goal, or what we had all hoped would be the goal of ecotourism, bringing money into a community and that the communities would see the importance of—of their natural resources from an economic standpoint. That that would bring the birds in and that I had some concerns that that was actually—that—that ecotourism was not continuing to drive that conservation ethic, that it has become more of an economic focus and we'll just—we'll take advantage of the birds while they're here. We'll take advantage of the economic stimulation. But my concern would be that if the birds disappeared, that probably these festivals would—would probably just curl up and fade away. I'm not sure that that kind of—I'm not sure that—that this is the way to get people to protect habitat. I'm not sure that ecotourism is going to change people's behavior. It'll have an economic impact, and even at that point,

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it's questionable how much. I think we're seeing in some cases that some communities and some individuals have found that it's—it's not bringing the economic stimulus that they thought it would or the—the—the large amount of revenue that they expected would come them either individually or to their communities. And it may be just misinterpretation. I think that, in a lot of cases, ecotourism has—tourism has been presented that if you have people come to your ranch or to your community, there'll be this huge windfall of dollars that will spill out of the tube of cornucopia into your—into the community coffers or into your bank account. But I think what we're finding out is that it doesn't actually happen that way. You don't get something for nothing, either. You

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do have to put some effort into it. It's not just like you're going to suddenly say, you know, we're part of an ecotourism event here in Corpus Christi or Brownsville or whatever and suddenly, dollars will come flowing in. You do have to put something into it. With regard to organizing, obviously, but also to protecting the resources so they'll be something there to see.

David Todd: Can you give an example of what people can do to make their homes and gardens attractive to wildlife?

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Jesse Grantham: Well, it's always been an interest of mine is, certainly, how do we get to average homeowners? How do you get this message across that—that plants are an important part of the ecosystem, not just for birds and wildlife, but also for you, also. And—and—and that's been an interest of mine ever since I was in horticulture, learning about plants and finding out how interesting they are and—and excited about plants and the role that they play in the much bigger picture. And I think we all need to realize that without plants, we're—we're not going to survive. And without a functioning ecosystem that functions properly with all the right compliment of plants in it, we're also not going to function. And we're starting to see, in some cases, where that's starting to break down because of invasive species of plants that are moving into natural ecosystems. So one of the things that we thought about doing with Audubon was creating a—sort of a backyard habitat program and encouraging people to start thinking about the kinds of plants that they could put in their yard, and thinking about it from an ecological standpoint. That you provide plants that provide nectar, food or cover for—for birds and—and other

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animals. And—and the plants that are native to your particular area because you've got insects that feed on those plants, you've got birds that feed on those plants. And—and also plants that are aesthetically attractive, that's the little compromise that we made, so that people would be willing to put these plants in their—your yards so that they wouldn't look like a weedy, overgrown patch of ground, which is what many people are concerned about. You have to fit into this little cultural niche that we've all put ourselves into with the lawns and the neatly manicured grasses and. So, we've had some—some, actually, really great experience with the people really getting excited about doing this sort of thing and Rockport is a—is an example where people have really begun to plant their yards with native species of plants. And—and it's not necessarily species of plants that are—are more drought-tolerant than others, it's nay—species of plants that have—have evolved over time to grow well in here and along, say, as an example, on the coastal

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bend of Texas, where they don't require water during drought periods. They're able to sustain long periods of no water, which is fairly typical of—of this part of the Texas coast. And so, these are plants that have evolved over thousands of years to work really well here. And—and the wildlife that uses them have evolved to use these plants for food and shelter and cover. So, the point is is to try and to educate people about plants and give them the names of plants so that they feel comfortable with talking about plants and understanding their role. And when they go to buy plants at the nursery, they feel comfortable about going in there and saying this is the species of plant I want. I—I've seen it work. I've—I've seen—heard experts tell me about how these plants work in this environment and they're native

and the—the much bigger impact they have on the ecosystem and I want to help. I want to be a part of that. It's obviously a very simple

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thing to do once you learn some of the basic names of plants. But there's even a greater spin-off from that, at least from my standpoint, is that when people become familiar with plants, they're not intimidated by the names of plants and many people are intimidated by plants and plant names. It's Latin; it's too much, you know. Maybe it's way beyond—they think it's way beyond them. It's really not that difficult. And you become comfortable because you've got those plants in your backyard. Are you more likely to—to want to protect the lot that's next to you that's has these plants, or plants that you're familiar with, to protect that from a conservation standpoint? Or someplace in your community that's going to be lost to highways or some other development? Do you feel more comfortable about going out there now and—and being an activist in your community because you feel comfortable and knowledgeable about those parts of that

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ecosystem that are so important. And you're growing them; you've touched them with your hands. You know them intimately and now you see them over here in their natural setting and you're more interested and feel more comfortable in being willing to be an advocate for their protection. That's the whole point of it.

(misc.)

David Todd: Jesse, for many people, their conservation work is driven by a love of the outdoors and a love of place and I was wondering if there was some way that you could explain what landscape means to you?

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Jesse Grantham: Right. Well, I've been asked that question a lot about where my favorite places—and I've lived in a lot of different places in the U.S., on the west coast and the east coast and the South and Florida and Texas and Midwest. And I have to say that all of the places that I've lived, I've really liked a lot because I've always found something that was—was fascinating or interesting. Well, I think if you're interested in nature and natural history and—and ecosystems and what drives them, every place has something really unique about it. One example of—I had to drive my daughter across country one time, from Sacramento to Massachusetts. And she said to me, one of the—one of the worst places is going to be Nevada. We're not going to like Nevada. I've heard all about it. It's dry and desert and I'm just going to sleep through Nevada. And I said, no, are you kidding? Nevada is absolutely spectacular. We're going to go through Reno and there are these beautiful riparian airs, but there's a mountains and thunderstorms and sage

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and the smell is terrific and I went on and on about how great it was. And she kept saying, no, everybody's told me it's really—really a terrible state. Well, we drove through Nevada and we had all of those things, the thunderstorms and the sage blowing up from the creek bottoms and the beautiful cottonwoods along the stream and cattle grazing and yellow-headed blackbirds and up into the desert and the low humidity and the breezes and the flowers and everything. By the time we got to Massachusetts, she was telling people what a great state Nevada was. And not in front of me, but I heard her telling others, you know, when they said what was your most favorite place? Well, it was Nevada, you know.

David Todd: Was that like the tidelands? The tidal flats, that there is no such thing as a wasteland?

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Jesse Grantham: Maybe so. Yeah. There is no place is a—a wasteland. That—that—that everything has a place and that everything that we see out there has evolved to—to fill a niche. You know, the way a bird's bill is shaped or the color that it has, it's—it's evolved that way to maximize its survivability in the world. So all of these places that we go and visit and every place that I've always lived, I've looked at it from that standpoint. That everything that's there evolved to be able to survive and sustain itself in that particular part of the world, whether it's the Sierra Nevada's or the Everglades or the Texas coast. Everything that's here has gone through this tremendous process of—of making sure that they can survive in this particular type of climate. So, for me, that's what's always made it interesting is looking at all of these pieces of this puzzle and how they evolved and—and here they are. They're functioning and working and producing some things that are aesthetically attractive, but just stimulating intellectually, too.

David Todd: Is there anything you'd like to add?

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Jesse Grantham: Oh, boy. We sure covered a lot of ground today. You know, I—I guess—I guess there's so many other issues. You know, water issues and—and, of course, one of my other issues is insect populations and I noticed that in Texas Parks and Wildlife, they had an—an issue on pollinators and the importance of insects. And that really gets us back to the whole issue of plants and—and the importance of plants in the environment and it's even—I think what is more critical is the importance of insects in the environment. And we have an all-out onslaught in North American on insects. You know, every store, hardware; everything is just reaped with—heaped with shelves full of pesticides and herbicides—something like 80 billion pounds of herbicides or pesticides are dumped on the earth every year in North America. And yet, what's going to happen is it's going to turn out that insects are absolutely critical to our survival. When you open your refrigerator drawer and open the re—vegetable drawer and look down in there and those squash and tomatoes and broccoli were all a direct result of an insect pollinating a plant, you begin to realize the importance of insects in the environment. Without insects, we're—we're screwed. So we need to be protecting insects, too.

David Todd: Thanks for helping us appreciate how these interactions that make the world survive.

Jesse Grantham: Thank you.

[End of reel 2290]

[End of interview with Jesse Grantham]