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Ann B. Hodgson (AH): This is Ann Hodgson with the Tampa Bay Oral History Program, and I’m here today with Frank or Dusty Dunstan. Dusty was the sanctuaries’ manager for the National Audubon Society¹ at Hillsborough Bay for the Florida Coastal Island Sanctuaries² or the Tampa Bay sanctuaries³ in the early 1970s. And Dusty, we’re very pleased to have you with us today. I want to see if we could start by—could you tell us: How did you get interested in science as a child?

Frank “Dusty” Dunstan (FD): Well, I’m not so sure I can answer science as a child, but I had an interest in the outdoors. My family had a home up in the Poconos on a lake, and so I was outside a lot up there. My mother was bird watcher, and I watched birds with her. My father was a hunter; I hunted with him. And my grandfathers were fishermen, one a fly fisherman and the other a lake fisherman. So I learned all about that from them.

I had a general interest in wildlife, so to speak. Originally, I had worked for a veterinarian from ninth grade on through high school. And I had the idea of being a veterinarian when I went off to school. But clearly chemistry and I were not meant for each other, so I shifted to biology, which I also enjoyed in high school. And the other big event that happened to me when I was in college was Earth Day in 1970. And I had been the

¹The National Audubon Society is a conservation group mainly focused on birds and wildlife.

²The Florida Coastal Islands Sanctuaries is a project established by the Audubon chapter in Florida to protect the colonial waterbird populations of the Florida coast and the natural systems that support them.

³Tampa Bay’s sanctuary islands originally included Green Key and Whiskey Stump Key but several more islands have been added over the years, including: Alafia Bank islands, Pine Island, Terra Ceia Bird Key (now Washburn Sanctuary), Cortez Key, Whale Key, and the Town Islands of Sarasota Bay.

president of the natural history club at East Stroudsburg State College, and it all started happening. And we developed—or we hosted a rally, and a march, and ended up creating a chapter of ZPG⁴, which is zero population growth, and espoused the mantra of those days.

That shifted me into interest in field biology, I suppose. I had a mentor, who was Dr. Larry Rymon⁵, who had a big influence on me at that time of my life. So when I graduated, I applied—in fact, my wife and I got a conservation directory and we went through and all of the state agencies and nonprofit groups and so on, we set out letters saying, Hey, I'm here. And I think we sent out over 100 letters and received only two or three replies, but one of which was the National Audubon Society and Frosty Anderson who was the sanctuary director at the time.

And he had an opening for a warden-biologist, what we were called, at the Tampa Bay sanctuaries which, he came down to my house in Pennsylvania—well, I should mention, I went in the Navy after high school, was married, and had children, and then came back and went to college, worked at the same time. But he came down to my house in Pennsylvania and believed in interviewing me on where I lived because he wanted to meet my wife. He wanted to see if he thought I would be capable of living, working, in a fairly independent situation, that I wasn't just a biologist, but I was skilled. I could knock some wood together, I could run a boat, and do the other kinds of things that sanctuary managers did at that time.

So it was successful, and I came down to Tampa in March of 1973, and I located in Ruskin. The Tampa Bay sanctuaries, at that time, were nine islands, the two most famous ones at the mouth of the Alafia River, and Green Key, and Whiskey Stump over near Port Redwing, used to be The Kitchen until they ruined half of it or part of it. Then the Washburn Sanctuary in Terra Ceia Bay, and then there was, let's see, four islands down in Saratoga Bay, off of Longboat Key, the Town Islands and Whale Key, I believe. And there was some nesting down there. There wasn't a tremendous amount in those days, but some. I'd get down there maybe once a month.

When I got down to Florida, my wife and children stayed back in Pennsylvania and sell our house. I lived in a mobile home over in Sun City Center—no, not Sun City, Old Sun City on the south shore of the Manatee River, Little Manatee River. And the assistant

⁴In the late 1960s, ZPG became a prominent political movement in the US and was associated with environmentalism and feminism.

⁵Dr. Larry Rymon was a professor at East Stroudsburg University that in 1980 noticed that ospreys were gone from Pennsylvania due to the pesticide DDT and undertook a then-controversial plan to reintroduce ospreys to the Poconos.

warden, Jack and Jenny Pulsifer, his wife Jenny, had worked for Bob Canamen, then Audubon wardens for quite a few years.

They originally came down in the early '50s, I think, from Michigan and just lived in Gibsonton and fished in The Kitchen and throughout Hillsborough Bay and were crab trappers, and they kind of showed me the ropes, I mean, they showed me the way around and the—I was used to running boats but in freshwater lakes. Here I had tides and so on, and so it was little bit different but picked it up pretty quick with their tutelage.

It was a very exciting for me because, as a biologist, I was up in the Northeast and I—we got Brigantine and we got Chincoteague and Assateague National Wildlife Refuge, so I was aware of shore birds and I was aware of herons and egrets and so on, but, I mean, they weren't just in your face all the time. When I got to Florida it was a whole group of birds that I was working with day in and day—getting to see and learning to identify in a different environment. Learning about it and trying to figure out how it kind of worked.

So it was exciting, I felt, and that's one of the things that's always excited me. Later in my career as assistant director and director with sanctuaries, I would get all over the country and it always fascinated me to try understand how a sanctuary system, what environment it was in, and how that system functioned, and what influenced what we were trying to accomplish there. But, anyhow, I recall and I—in the time I had been hired for the job I had a few months before I actually went down there. And I, at that time, I subscribed to *National Geographic* and, lo and behold, here came a copy of the magazine and it featured brown pelicans and Ralph Schreiber in Tampa Bay. And so I went, Wow, look at that! Boy, that's where I'm going.

And shortly after I got down there, I made an appointment to visit Ralph and met him at USF and that began a relationship with him that lasted really after he moved to California and then, unfortunately, passed away. But we contributed to some of the work they did with the Army Corps of Engineers'⁶ contracts because he was out there we continued the monitoring of the Boca Ciega pelican colony and did some shore bird, I mean, some gull counts and other stuff. Let's see, not too long after I got down there, I don't know if it's when I went to an Audubon meeting or exactly how. It could have been Robin Lewis looked me up.

But we met early on, and we hit it off and began to collaborate. He was teaching at Hillsborough Community College and active in environmental issues in the bay, and so I began to learn about what those issues were. He also was a tremendous teacher in the

⁶The United States Army Corps of Engineers is a federal agency that is one of the world's largest public engineering, design, and construction management agencies. They are commonly associated with public works projects.

sense that I gleaned a lot of what I was to learn about the bay from him. And he also set me up with, I mentioned to you earlier there was a photographer from, I think, for the Tampa Tribune—Bill, Bill his first name was, but I can't think of his last name. He lived on a houseboat on the Pinellas Bay side or Old Tampa Bay side of MacDill peninsula, the inter-bay peninsula there.

So, anyhow, he arranged for him to take me up in the plane, and we got some aerial photographs of the colonies and so on and—his modus operandi was to see if he could make you sick when he took you up. He'd give you a bag and then he'd begin to do all kinds of aerial stunts like rollovers and deep dives. And I think I passed his test because I didn't get sick. But that was my first exposure to seeing the bay system. I can still remember the—it gives you a totally different perspective when you get up in the air and are able to take a look at things.

I got a side story, a little side story, I'll tell you about. And you, being the manager there for a few years, recall there was a cabin out on Alafia banks. Well, historically the wardens had cabins. The original one was over on Whiskey Stump, and then when the birds moved over to the Alafia east bank, they had a wood shack there that was their warden cabin, and sometimes they would stay overnight, you know, to keep an eye on the colony and used it as place of refuge if they got caught in bad weather and so on. Well, it was pretty well dilapidated. In fact, it was all collapsed when I got there. The tin roof was on top of everything. But I wanted to have a place out there, so I decided I was going to build something more durable. And I decided we were going to build a concrete block building and have a concrete floor, and that would kind of try to keep the ravages from the insects and the rot and all that happened.

So, okay, well it sounds pretty easy until you figure out, how do I get this material out there? Because, as you recall, it wasn't very deep, the water and the tides would go out on the mud flat, you could easily be 100 yards from the shore. Well, my assistant warden, Jack Pulsifer, knew an old fisherman trapper, a crab trapper, that—well, back then they used to use a line on a roll, and they'd run it. And then somebody would sit in the front of the boat and the crab line would lift the crabs up, and they would just bend them like that. But this fella's name, I'm pretty sure, was Jinx. And he lived in a shack right on the south side of [Interstate] 41 where Bullfrog Creek comes under. There was some fishermen's wharfs there and lived in a shack there.

He later got killed on 41, crossing the road; he got hit. I don't know how much later, but in any event, he had these skiffs and he had a little one-lunger⁷, and he loaded five ton of stone, we put it in sacks; he brought that out. We brought the cement, we brought all the concrete blocks, we brought all the lumber and the tin for the roof, and we rigged up—do

⁷A one-lunger can refer to a single-cylinder engine or the vehicle driven by the single-cylinder engine.

you remember the old lawnmowers that with the reel-type of the engine sitting on top of them? They had a clutch?

AH: I do.

FD: Well, we took the reel off, but the clutch is what we wanted, and ran a big belt up to a portable mixer. And so we had a way of, rather than by hand, we can run this old lawnmower. And we poured our concrete floor, and it took us two days so we could only—if there was a seam down through the floor I would try to cover up, but by the time we had gotten the stone and concrete block out, we said, Well, I'm not going to bring sand.

So he said, "Well, I'm bringing the sand off the beach. If there's salt in it, there's salt in it." And then we said, We're not going to bring fresh water, so we used salt water. And it worked. It held up. And I think that cabin is still up there today, although it's probably not used anymore; we put jalousie windows⁸ in it. Then I had steel, my neighbor worked in a steel fabricating place, and he made me up steel shutters and a steel door so, when we weren't there, people weren't breaking in all the time. And it was used as not only a warden's patrol camp, my family would come out, and we'd spend particularly weekends because that's when a lot of the potential disturbance would happen. And the kids loved it; they were little then, four and six.

But also, Jim Rodgers, he completed his doctorate dissertation there with Little Blue Heron breeding behavior, courtship behavior. And he used to get up before light, go in the blind, come out back after dark not as to disturb the colony, and it was nice to have that place there. And I did the same with ibis and snow egrets. And Phil Kahl, the noted stork biologist and photographer, spent a week there photographing. And we had a British broadcasting crew one time that photographed out there and used that as a little base of operations for there. So we used it. It got used quite a bit. And built a little latrine back under the cabbage palms. Actually, I built a tower out there too that you might run across in the slides I gave you that we used, but it was kind of scary getting up there, and it only lasted one season. It had a blind on top of it. Lightning strikes in Tampa are pretty frequent, and you didn't want to be up there when it was lightning, for sure.

When I got there, I could pretty much write my own agenda. And what I saw, the reason for me being there was to provide physical protection to the colony from human disturbance. I also saw, maybe the biologist in me, or the biologist part of my title, was how many birds are there; what's there; how well they're doing, or what's their nest success; and so on. So we instituted bird counts, not only—for instance, pelicans we

⁸A jalousie window is a window composed of parallel glass, acrylic, or wooden blinds with horizontal slats that keep out rain, direct sunlight, and noise but allow ventilation and light set in a frame. This type of construction is seen commonly in locales with mild winters.

could see them from the boat fairly easy or at least a percentage, couldn't see all of them. Herons and other were more difficult, and we realized that we just had too big an impact when we tried to go it through the colony and do anything.

So we started doing flight counts and on certain corridors, and, while it didn't give us exact numbers or even good guestimate numbers, it gave us a means of a trend from year to year. We could compare years and get an idea if populations were going up or down. We could also have an idea of what their nest success was and the timing of when all that was happening by the frequency. For example, after when they were incubating the nest, the flight counts were down, but once the young were up at a certain age that flight path would increase because you have both adults out there. And John Ogden and others down at the research department were, I think, being grappling with trying to get at a more scientific approach in using bird flight path counts to actually come up with numbers. I wasn't there long enough to get that perfected. And I think we would have had to extrapolate to maybe smaller, smaller areas where we actually knew the number of birds and get some idea.

But there were, sort of, other important things that I quickly—well, I digress, okay, so monitoring the birds and their success. And then the third was to get involved in issues that would have the potential in Tampa Bay, the potential it could have an impact on those birds. So those were the three, I think, primary goals for me when I took that job. And then a lot happened. I mean, when I got down there, we were talking earlier about the algal blooms and certainly the lesser scaup populations, and actually we wrote a paper⁹ when there was a die off of scaup, Ralph Schreiber, Jim Dinsmore, and I. And there's some numbers there that talked about the number of birds there in that year. But you would, when the tide was out, you had *ulva* [*lactuca*] which was a lettuce-type of algae, just layers of it across. There'd be crab traps and they'd just be over top of the crab traps. Then, of course, when it all died it stunk and was a major black, gooey crap.

AH: So Dusty, let's frame the time for our listeners. You got there—

DF: I got there in 1973.

AH: In the—

DF: March.

⁹Schreiber, R.W., Dunstan, F.M., & Dinsmore, J.J. (1975) Lesser scaup mortality in Tampa Bay Florida, 1974. *Florida Field Naturalist*, 3, 13-15.

AH: In March in 1973. And you were the warden-biologist for Tampa Bay sanctuaries until?

DF: It would have been, I think, the summer. I think June of 1977.

AH: So about four years.

DF: Right.

AH: And after you got settled you mentioned your family stayed behind for a while, but they—

DF: They were down within about three months. Yeah.

AH: Right after you transferred down there.

DF: Right.

AH: Now, when you first started out that would have been the first nesting season that you were there. Can you give us a little bit of flavor about, you know, how that impressed you, what your experiences were?

DF: Well, the ibis numbers were up, much higher than they were even towards the end of my time.

AH: And that—and we're in the thousands now, right?

DF: Yeah.

AH: How many do you think?

DF: I don't know.

AH: Just ballpark?

DF: Maybe 15, 20,000 pairs or more. I don't know. It was a lot of birds. In fact they, I think the first year, it's a little fuzzy, but I think the first year there were still ibis nesting on Alafia east bank. And I think they nested into the western shrub areas, now it's probably in cabbage palm¹⁰, but back then it was still shrubby there. Over on east bank, where the majority were, there were two rock sort of humps on the island. And the easterly hump still had heavy, heavy lantana with the schinus was just starting to come in and there was an occasional cabbage palm, but there was still a lot of lantana, and so you could see a lot of the ibis nest from the boat, actually.

On the western one there, I think the Brazilian pepper¹¹ was bigger, and the birds were nesting, in part, under the canopy. Again, you know, it was for me a big learning curve. And Terra Ceia was mostly a mangrove key with, for all practical purposes, no uplands. There was a little bit on the, a little bit of a spit, but very, very small. There we censused mostly from the boat, pelicans, cormorants, herons. And we also had a roost of frigate birds there in the summer. I think they were in the summer, there around maybe. Well, I don't know.

AH: How about down at the Town Islands and—

DF: Yeah, there were a few birds but not much. I don't know if it was Town Isles or Whale Key, as I recall, it was few pelicans and cormorants and herons. We—little known I guess, just thought of this when I—but we worked with the Bermuda, the country of Bermuda, and David Wingate, who was a sanctuary manager there, was on a mission to restore yellow-crown night herons to Bermuda, in part to try to predate on land crabs which were having a major erosion problem.

And I don't know who set us up, but David came down and stayed with me. And we went out and we trapped—we took immature night herons before they fledged out of the nest, and we built crates that transported them back to Bermuda. We did that, I think, two

¹⁰Cabbage palms are a species of palmetto palm native to the subtropical Gulf coast and south Atlantic coast of the United States, as well as Cuba, the Turks and Caicos Islands, and the Bahamas.

¹¹Brazilian peppers are a flowering plant from the cashew family. The plant is native to subtropical and tropical South America but has been introduced into several states, including Florida. Planted originally as an ornamental plant, it has become associated as an invasive species because of its abundant seed production dispersed by ants and birds along with its difficulty to control.

years. And, although I never got over there to see it, and I don't know what happened to David, I understand that that restoration of yellow crowns was successful.

AH: So they were endemic to Bermuda? They had been hunted down?

DF: Yeah, they had been extirpated. Evidently, the number of birds that make that passage isn't frequent, I mean, Bermuda is out there. So there was no transient population that would potentially been able recolonize it. But that was an aside; it just dawned on me, a little thing. Another early on episode that might be of interest was the—shortly after I got down there, I recognized the amount of the—the nature of hunting on Tampa Bay, with waterfowl hunting, the abuses and the problems that were happening. And my boss, Frosty Anderson, was a close friend of the US Fish and Wildlife Service special agent in Miami.

And he contacted me and said, “You know, you ought to get some law enforcement up on Tampa Bay. Dusty's been saying there's been quite a lot of horrendous abuse.” So, we did a joint operation with Florida fish and game and the federal agents who I took around in my boat. And together we concentrated on Tampa Bay for about a week and unbelievable, the numbers of arrests from rallying ducks with airboats, to sky busting, to taking way over limits. But also, what was disturbing, we caught hunters with loads of ibis, numbers of ibis—actually, even some with pelicans, which was an endangered species at the time. So it was clear that Tampa had sort of been a wild west for hunting for a while there and we did that in, I think that was probably in '74 maybe.

AH: About how many hunters do you think were hunting, typically, on the bay?

DF: Well, there really weren't a whole lot. There were some along the little bays, the coastal bays—I mean in the mangrove areas—some of the spoil islands¹² occasionally, and up in McKay Bay they had layout boats that, it was a sunken, a partly sunken boat. And then they'd rally the ducks back, and then they'd shoot them. I remember we got a—

AH: Oh, they'd drive them with an airboat?

¹²A spoil island is an island created by dredge spoil material resulting from the construction of navigation channels. Many of these islands have developed into valuable and distinct habitats for plants and animals.

DF: Yeah, which is illegal, and they did that. Actually, those were members of DU¹³ that were caught at the time, I recall. Anyhow, that's an aside. The other environmental issue that was going on, I might just briefly mention, early on when I got there, were the shell dredges¹⁴. And there was one or two operating in Hillsborough Bay almost daily. And you could see the plumes, I mean, from the air especially, but we could see them and depending on the tide and the wind they went pretty long distances. And also, you could see the terns and the gulls that would be there where the discharge of the dredge was, you know. Finally, that got stopped while I was down there, actually, I think probably in '76 or so, maybe '77. I don't remember the exact dates but that finally was stopped.

AH: A lot of our listeners won't be familiar with that history of the shell dredging. Can you explain that in a little bit more detail for folks?

DF: Well, they were sort of a tug-type boat with a barge. It had a long extension dredge on it, and, basically, they would ruck the bottom, and keep the shell material, and discharge the sand and sediment. And the shell was used in the construction business, so they'd bring the barges back.

AH: And where was most of that dredging going on at that time?

DF: In Hillsborough Bay. Not in the very shallow but out between the channel and the—

AH: The shipping channel?

DF: Yeah, and I would say maybe a half mile on either side of those channels.

AH: So sort of half mile either side of the intersection of the Alafia channel?

DF: Out from Alafia, above it. On the other side towards Davis Island and—not Davis Island, but MacDill Air Force, you know, what peninsula? What's the name of that peninsula that comes down from Tampa that separates Pinellas Bay, I mean, Old Tampa Bay and Hillsborough Bay?

¹³DU is short for Ducks Unlimited, an organization that assists in conserving waterfowl habitat in the United States.

¹⁴Shell dredging is a type of dredging that relies on a clamshell bucket that hangs from a crane barge to pick up seabed material. This type of dredging is seen commonly with bay mud excavation.

AH: Right, right, where MacDill Air Force Base¹⁵ is now.

DF: Yeah, right, and further south they were operating. But I came in '73, and they were still operating for a few years until they were finally shut down.

AH: What was the impetus for shutting them down?

DF: The sedimentation, the plumes of sediment, and also the disruption of the bottom, I think, but I think it probably was the water pollution laws that finally caught up with them.

AH: So the Clean Water Act¹⁶ would have been—

DF: Seventy-two.

AH: —passed fairly early before that, just a few years before that.

DF: That's right, because the mangrove work that we did again—I think that was '74, '75—there was about 300 acres of mangroves that were bulldozed to bare ground, south of Apollo Beach, and then I believe Wolf Creek. And then they were planning to go further because that was going to be the next big dredge and fill project. And that 300 acres—they were taken to court and fined and that was related to the Clean Water Act, the strengthening in laws, pretty much the end of dredging in the bay in the '70s there. Unfortunately, Port Redwing and Apollo Beach, even though I understand you live there—and I used to keep a boat there, and it was a nice place—but, those canals and that dredging, I think, will have a lasting impact on the bay and its productivity and so.

AH: Let me ask you a few questions about some of the geography of the bay in the early '70s. We can kind of explore that for a minute. You've mentioned Port Redwing a couple of times. My understanding is that it was dredged in the early '60s. Was the dredging finished by the time you were there?

¹⁵MacDill Air Force Base is an active United States Air Force base located in downtown Tampa, Florida.

¹⁶The Clean Water Act (CWA) is a key federal law in the United States governing water pollution.

DF: Yeah, the dredging was finished. Except for the power plant, there was no development on Port Redwing, you know, that canal came down the center and then, which I guess there is now, but there was none at the time. So that area, people would drive out and shoot guns, and sometimes beach. Whiskey Stump was a stone's throw from the shoreline, of the north shoreline, of that. And actually, the erosion always looked like it was going to take it but, fortunately, it was deep enough channel that washed it out. But, still, it was very easy to get across and onto the beach.

When that occurred, there was a major siltation around Whiskey Stump and maybe even connected it to it. And, as part of the mitigation or settlement Audubon got with whoever the dredger of the government was, they went and they dug deep basins out on either side of Whiskey Stump, and the idea was that the silt would fill that back up. I would say that it did certainly remove a lot of the silt. Whether the basins had to be as deep as they were, I don't know because they are pretty good, and they could have contributed then to some erosion at Whiskey Stump itself.

I remember when I would anchor out there, I think we were doing Secchi disk¹⁷ stuff for water clarity, and through the years it got better. I also first saw root beer growing out there on the flats near Whiskey Stump, not in the basin, but that probably would have been in the—you know, there was only four years there, and I can't keep them totally separate.

AH: Sure. Now, when we look at old air photos at the south end of The Kitchen¹⁸ there, off shore of Port Redwing, they show a string of spoil islands going out to what's now called Pine Island or Beer Can Island. When you were there in the '70s were those above water level?

DF: Yes, they were. There was four of them.

AH: And was there nesting at that time?

DF: There was. Fishhook was the closest one in and that had an intertidal basin—

¹⁷The Secchi disk is a black and white, circular disk that measures 30 cm in diameter. It is used to measure the Secchi depth to determine water transparency in bodies of water.

¹⁸The Kitchen is a 3-mile area of Hillsborough Bay that lies between the Big Bend power plant and the Cargill phosphate plant. In spite of surrounding industrialization, it is known for its abundant mangroves, seagrasses, wading birds, and other wildlife.

AH: And it's still there.

DF: I don't know. It's probably shrunk some but—

AH: Probably.

DF: That had black thick stilts. It might have been a green heron too, but there no colonial bird nesting there that I recall. I don't remember much about the next one out. I think it was the third one out, which I don't think is there anymore. That was a low island. That had Caspian tern—I mean, laughing gulls, and that's where I found, I believe, the Caspian tern colony. We'd have to check the paper I gave you, but I think that was on it. There may have been some nesting on the second one out.

I'll tell you, all of my notes I either left or were left there. I know I didn't bring them with me. I know I didn't throw them away, so where they are, I don't know, but I know Ralph Schreiber, in the dredge material study that Robin did the vegetation, Ralph did the birds. We provided a lot of that information. Also, in the paper we did on spoil islands, the Tampa Port Authority and coastal zone management has a report, it was probably never published, but wherever they did might have taken that information. It should have had what birds was associated with those islands, but I can't recall.

AH: I think there are details in some of those publications.

DF: Yeah, on Beer Can, or Pine Island we called it; there was never any nesting that I'm aware of. But all those island were very important as roost sites and that gets underplayed because birds need undisturbed areas where they can rest. And, when you think about it, with recreation and utilization of the bay, those areas become fewer and far between. So whether it's people having to go to the bathroom, or out boating, or they had their dog with them and they let their dog go, or you name it, these birds get moved around. And they don't just rest at low tide, you know, when there's a lot of places to rest, it's also high tide. And, anyhow, spoil islands were important and then one other quick quicky, I was thinking of issues.

One of the other issues that didn't get solved while I was there but was ongoing was the Tampa Bay incinerator. And, although I was never involved directly with that, the amount of dredging and filling in McKay Bay was tremendous, and, at that time, it was kind of fresh. And so there were least terns and black skimmers nesting on those areas and we were up doing banding, and counting nests, and reproduction—those areas were very susceptible to cats, dogs, and people because they were connected to the mainland. That's

just an aside. And I did that, that was early, that was in maybe in the first, second year. I started graduate school at USF in 1974 and dropped out in '78 when I went back to Pennsylvania, not completing my thesis.

But the big issue, the big issue for me and, I think, Robin, at the time, was the Tampa Harbor Deepening Project¹⁹. And, at that time, by volume it was going to be largest dredge and fill project in the United States, I believe. And there were a lot of questions, I mean, there was major issues of people, and I think a guy by the name of Taft²⁰ up at USF, and there was a marine biologist, Joe, his name, I can't think of his last name, not a very tall fellow. He was a marine—

AH: Joe Simon?

DF: Simon, yeah, they were active in issues related to the bay. I mean Joe was involved in not just the Tampa Harbor Deepening Project but in the Tampa treatment plant and other things, I think, and he had a lot of students that were involved. They worked with Ernie Estevez²¹ quite a bit. I still send Christmas cards. He just retired from Mote²². And he knew a lot about mangroves and isopods that were feeding on the mangrove roots, but a neat guy. But our big project, and Robin and I worked together on it, was the Tampa Harbor Deepening Project. We had funding from the Port Authority to look at spoil islands, saving and utilization of them, and plant distribution and succession. And so we started out that way, and then I think we began to expand a little bit.

We did that Florida mangrove study. And, by looking at those spoil islands, Robin came up with the idea of, Hey, look at *Spartina*²³ and there's mangrove seedlings. And came up with an idea of how that successional pattern seemed to be working for the bay. And these are in low-energy sites. When you get to the high-energy side of spoil islands, it's

19The Tampa Bay Deepening Project was proposed in 1976 as a way to address environmental concerns of landfill dredging and maintenance dredging. The project entailed deepening of new channels and open water disposal of dredged material in the bay.

20Dr. William H. Taft.

21Dr. Ernest Estevez received his PhD in biology at the University of South Florida. He joined Mote Marine Laboratory in 1979 and became their director of the Center for Coastal Ecology. His research is focused on invertebrate zoology and benthic ecology.

22Mote, also known as the Marine Laboratory, is a marine research institution that began in Sarasota, Florida. Originally focusing on sharks, their research has expanded to conservation and sustainable use of oceans as a whole.

23*Spartina alterniflora* (saltmarsh cordgrass) is a type of deciduous grass found in intertidal wetlands and saltmarsh estuaries.

pretty well impossible to keep the erosion from happening. But we look—and it began then with the restoration. Okay, how can we reintroduce and restore these intertidal communities? Because, not only are they important to the ecology of the bay but, Hey, birds nest in these things. And so it's back to my original mission.

AH: What was the condition of the two Alafia Bank spoil islands? And then were there the two offshore 2D and 3D? Were those in place when you were there?

DF: No, they were done after I left. Rich was there. And I would get back there because of my job with Audubon and his department administration. So I was able to follow along with what was going on. No, it was in the—I left in '77. The dredges hadn't actually started building those islands. We tried to have an influence. I think, as I started to say, I think when Robin and I realized that we couldn't, we weren't going to be able to be part of stopping the project, we began to try and influence some of the placement of spoil and thought about trying to use spoil material in a way that could create habitat. Certainly those big island were not ones that we thought would provide habitat. We were more concerned about them being adequately buffered so they didn't erode, especially since they were going to be used for maintenance inside and, you know, have those dykes breached and then, all of a sudden, that muck come back in the bay.

Did they provide habitat? I think they did for a lot of shore-nesting birds and others, and maybe the inside served as basins for stilts, and avocets, and maybe other things, but, as far as I know of, there was no nesting. Maybe ground nesters but no heron nesting, at least, or pelican that I'm aware of. At least—that was after. Robin then went off into the consulting world, and I left Tampa Bay in '77 to become the regional director for the mid-Atlantic region for Audubon. Four years later became assistant director and got to come back and see—I'll show you some of, I have them hanging on my wall in the back, of Tampa Bay, before I leave.

AH: Let's talk for a minute about what the water quality was like. Let's talk in a little bit more detail about the water quality because that was, you know, such a big issue with the sewage discharge.

DF: Best I can, in my opinion, and this was a short time and I'm not sure if it was there yet by the time I left or I started really noticing it when I'd come back on other visits, but it definitely improved as the tertiary treatment plant came online. I don't think it was too much longer that the ulva or at least the levels of ulva. It pretty much left quickly, I think. I don't recall when that tertiary treatment plant came online, whether it was the end of when I was there or not. Like I said, shell dredging did stop. The nutrient load then, usually, it'll have a quick effect because of the nature of the healing of estuaries, if you

will, so I remember Robin showing me root beer coming back in The Kitchen, but it was probably on a visit that I came back down to Tampa Bay on.

AH: So when you were there in The Kitchen, let's focus on The Kitchen for a minute, do you remember any sea grass at all, or was the water clarity so bad it was all shaded out?

DF: Well, it was a combination of that and the algae, I mean, it was a tough place to grow because those algal mats would sink down and, you know, shade out the stuff. Plus, the turbidity was pretty high, you know. You could be knee deep in water and not see your feet.

AH: Do you remember was there any shoal grass or turtle grass²⁴?

DF: I don't—certainly not turtle grass, but, like I said, it wasn't anything that was prevalent because I can remember Robin showing me widgeon grass, little areas of widgeon grass, off Whiskey Stump. And it was a big thing.

AH: And then, of course, the Bay Study Group, they've donated all of their archives to the university and to this collection.

DF: That would probably show a better light.

AH: And, you know, they spent 25 years tracking that, the changes in sea grass distribution.

DF: Yeah, when I was active down there, I was focused mainly on the spoil islands and the Mangrove Community Study. And we did, we did some attempts at planting. We tried to plant red mangrove out on Fishhook Spoil, the one I mentioned that had the inner coastal or that lagoon. When I was there, we had been in the planning stages or trying to coordinate with the Corps on the extension for a sunken island. But that didn't happen until Rich was there, or maybe Jim, I can't, but that was after I had left. And I can remember coming back in the beginning and the *Spartina* being planted. Jim, Rich had planted *Spartina* in that inner hook, which was the concept we had when we came up with models for that, it was to create an island that was allowed to erode or create a sheltered cove similar to Bird Island or Alafia East.

²⁴Turtle grass is the common name for *Thalassia*, a genus of marine sea grass that includes two species: *T. hemprichii* and *T. testudinum*.

And then Rich also had a rototiller, and he would rototill the extension for terns and others. But the big challenge that I, you know, may be still ongoing there, I visited, when I was down a year or two ago, and Ann's assistant took me out and I saw concrete revetments that staggered along the western part of Sunken Island that, again, trying to prevent that erosion. Well, back when Rich was there was the tire trick, and I know there was a lot of tires floating around in there for a while, you know, and I don't know if there is a way to reduce that energy or whether we should worry about it and maybe just being a situation where we can re-spoil. I don't know.

I do know that where Alafia banks, where those mounds from the original deepening of that channel, Alafia channel, got in to limestone or calcium carbonate and there were chunks of it like this. And now that's not going to erode away very quickly. And I think if you had some of that in those key places you could provide a buffer against that. But if you start looking at Alafia banks and the configuration of it, if you didn't have that erosion to the front end, you wouldn't have those extension of the arms in that area, so it's dynamic and I think the nature of the beast. I want to take a break.

AH: Sure, let's take a break for a moment, and we'll be back with Dusty in just a second.

Track 1 ends; track 2 begins.

AH: This is Ann Hodgson with the Tampa Bay Oral History Project, and we're back again with Dusty Dunstan. Dusty was the Tampa Bay sanctuaries' manager in 1973 through '77. Dusty, welcome back. Thanks so much for being with us.

DF: You're welcome, and I'm thoroughly enjoying it, reminiscing. We'd talked about—part of the function I thought my job was as monitoring the birds that were utilizing the islands in Alafia. And I talked about trying to use flight paths and birds in the flight paths and measuring, you know, for periods of time. But there was other important thing that flight path work became evident to me. As important as the mangrove intertidal systems and the Tampa Bay itself was, it was the freshwater wetlands that were in Hillsborough County as you went up the Alafia or the Little Manatee or Hillsborough Bay, those wetlands associated with those river systems and elsewhere, those were critical to the nesting success of ibis, and herons, and egrets.

And, although I'm not sure, I could see the decrease in population in the short time I was there. It clearly—we were dealing with fewer birds than what had been reported 20 and 30 and 40 years before that. And, to the extent I understand it, as we continue on, there are fewer birds nesting on Alafia banks even though I understand it's the largest colony

and most diverse, which it was then, still a very diverse colony. But that number's dropped, and I suspect that one of the real problems has been the continued destruction of freshwater wetlands even with the Clean Water Act and the wetland's protection. So while we saw a rebounding in the bay systems, I don't know what the situation is in the wetlands. Those birds are great indicators and you can draw a lot from them. I want to mention that because when I looked at my whole, like an island like a clock, the vast majority of those birds were going out to the east, northeast, northeast and southeast, that way.

AH: Well, when you were there, managing the Alafia bank, that was a time when we also had reports of a couple species that had been absent from Tampa Bay for decades.

DF: Right.

AH: Let's tell that story.

DF: Okay. Yeah, I began noticing reddish egrets in breeding plumage. And my understanding was that those breeding plumage birds had been showing up out by the mouth of the bay and other places on occasion, but I perked my interest through a red phase. And I kept watching and was able to find out, you know, I saw courtship. And then well, Rich Paul, who was later sanctuary manager, he was a research biologist down in Tampa—I mean in Devon Aire. And he'd also been studying reddish egrets, both in Texas and in Florida. So I called Rich and I said, "I think we have some nesting going on here in the Alafia Banks, and come on up." So we did and we got in the colony, and we verified the nesting reddish egrets.

AH: The first year—

DF: And then—

AH:—one pair, the first year?

DF: Yeah, I think so. And then they became more frequent and, of course, we wrote the paper. He wrote the paper, which sort of documented that. And we saw increased numbers of breeding pair. The reddish egrets like sailing, foraging conditions, so they would forage oftentimes right along the shore in the shallow water around Alafia banks and other shoreline areas. So it was really easy to kind of see them and get an idea of the numbers of them. And you could tell their breeding plumage for they get very pink in the

bill and the lores area. And we saw additions and then the young, the immature birds, but we didn't go into the colony to try to verify numbers or anything after that. We did that first time to verify their nesting.

And then the other—that was in '75, I believe. And then in 1976, we began to see spoonbills in breeding plumage and, once again, we, I, with the help of the Helen Cruickshank who was a noted—Helen and Allan [Cruickshank] work for Audubon many years at the main camp and retired in Florida, but they were renowned bird photographers. And Helen, I think was in her eighties when I took her out there and set her up in blind²⁵, and she photographed the spoonbills nesting on Alafia. And I understand that that's continued. And since they've expanded somewhat, like to Terra Ceia; Washburn has them. And those were kind of novelties, but they documented the expansion of birds that have been really decimated there in the plume days, and their range shrunk to basically the Florida Keys up until that time or maybe they had been at Charlotte Harbor, but certainly it was quite a jump from (inaudible).

AH: Yeah, I think in the 1950s, you know, they were described—reddish egrets were described as being limited to Florida Bay at that point.

DF: Yeah.

AH: Because of, they had been extirpated up the rest of the coast.

DF: I mean they'd come when they were done breeding. They would come up, and you'd see them occasionally in the non-breeding times. But I think the—we could get the paper and read it. Rich documented it pretty well. And same way with the spoonbills we—you know, Robert Porter Allen down in the research department, he really set up the research department in the Keys. He worked with spoonbills down there quite extensively.

AH: Let's go back for a minute. You said that you had repo—you'd been hearing reports of breeding plumage, reddish egrets, what, down around Egmont Key? You said the mouth of the bay.

DF: No. Yes, Passage Key, out in around where the Skyway²⁶ goes.

²⁵A blind or bird blind is a camouflaged shelter that is used to observe wildlife, particularly birds, at close quarters.

²⁶The Sunshine Skyway Bridge is a cable-stayed main span bridge located in Tampa Bay, Florida that connects with St. Petersburg, Florida and Terra Ceia, Florida.

AH: And at that—in the '70s, Passage Key was above water, right?

DF: Yes, it was.

AH: Yeah, because it's completely submerged now.

DF: Is it? Yes, it was. I didn't get out there very often. It was really out past the Skyway and mouth of the bridge. But—

AH: Where were those reports coming from? Who were you hearing that from? In general, do you remember?

DF: I don't. I mean, I just, maybe, saw them myself along the Skyway, but out towards the mouth of the bay we'd—I remember, you know, sometimes you think you remember stuff and maybe you're wrong, but it was in my mind, it came out, so I think I heard it or saw it at the time. But they weren't in breeding plumage and that was the issue. Did I say they were in breeding plumage?

AH: Well, that's what I was curious about.

DF: Oh, no, no, no. They were just out there.

AH: You know what? Besides the reddish egret and the roseate spoonbills and, since that first observation at the Alafia Bank, roseate spoonbills now breed at a number of colonies throughout the Tampa Bay area and into Sarasota Bay, so they have come back.

DF: They're another—

AH: They recolonized—

DF: —bird that is—

AH: —many areas.

DF: You know, depending on the estuarine situation, so, hey, the estuary improves and the birds start responding. That's pretty good.

AH: Another iconic species in Tampa Bay is the American oystercatcher. Do you have many recollections of them in the bay?

DF: Yeah, just about every spoil island had a least one pair nesting on it, and quite of few of them had more than one pair. And I had the records of those birds when we were doing those studies, on what islands they were found, so they—I don't recall any noticeable change from when I was down there, and then like a drop or increase they seem to be there. And the Alafia East Banks had oystercatchers on it when I was there in the beginning—not east, west bank. Sunken Island.

AH: Sunken Island did, yeah. I think it was in about 2008, Ann Paul and I did a study for, it was funded by the Tampa Port Authority, and worked up about 15 years of oystercatcher data. You know, they're amazingly persistent. They occupy the same territory within a few feet, year after year. So I would guess that some of the territories you saw in the '70s—

DF: Were, if the island were still there, yeah.

AH: If the island were still there, you know. The territories were still occupied.

DF: And the other place, we did a few bird surveys down at the island off of Port Manatee. And I seem to think, recall, seeing oystercatchers there too.

AH: What was that island called?

DF: I just used to call it Port Manatee Island, I think. Or it was S14, I think, in our study.

AH: And that was a dredge spoil island there?

DF: Yeah, it was to the right of the channel, south of the channel off—it's a fairly big island. And I don't know if they've used it for maintenance or not. Like I said, I didn't do a heck of a lot there.

AH: Now, that island was actually reconfigured about 2000 as part of the Gulfstream Pipeline program. They ran the pipeline through there on a directional drill and reconfigured it, and there's actually a tidal channel through the middle. And about four years ago, the first reddish egret nested there.

DF: Is that right?

AH: Enough mangrove cover developed.

DF: Yeah.

AH: So.

DF: Good, cool.

AH: So you saw it in the '70s?

DF: Yeah. Well, it wasn't, it didn't have a channel through it, it was more of a rectangular island as I recall but the other—there was one other thing going on that I don't think we were able to have an impact on it while I was still there, but Audubon continued to press and I think we got it under control. But that was the tropical fish farms in Hillsborough County and the impact on wading birds, particularly little blues, and herons, and other egrets, although it had impact on cormorants and other things too, but that was—and they were shot incessantly. And what I came to find out was there was something like 300 registered fish farms in southern Hillsborough County, so you can imagine the potential impact that could have on those nesting birds, and we started raising hell about that.

But even though those birds are protected under the Migratory Bird Act²⁷ it just wasn't rising up to the level of attention with the Fish and Wildlife Service. We pushed them and we got some, getting it exposed somewhat, but it wasn't probably another decade or so

²⁷The Migratory Bird Treaty Act is federal act that implements protections for migratory birds in North America.

until they began to shut it down. And part of that might have been the economy for fish farms, I don't know, but they had to go to netting and so on. And then the small guys couldn't afford it and dropped out or whatever happened, but I think the impact was decreased, as I recall.

AH: So they netted the raceways so the birds couldn't get in there.

DF: Yeah, the ponds. That's what they had to do, but it was expensive and there was other techniques. They would drop, put wires across with things, but those were mainly to deter ospreys and some of the other kinds of birds. Hartz Mountain had a place right off of [US Route] 41 when I was there that very secretive. They had it boarded up, I mean, enclosed behind walls that you couldn't see in and so on. But they were all doing it. I mean, you could hear the, you know, just the whole mom and pop guys would hire a kid to ride around and shoot birds, I mean, that was so. Hopefully, that's not, that's a thing of the past anyhow.

AH: What kind of equipment did you have when you were the sanctuaries' manager? You had a boat or two?

DF: Yeah, when I first went down there we had 14-foot fiberglass rowboat types and with an 18-horsepower motor on it. It was a high wall. Actually, when we moved onto different boats, Robin bought that boat from the sanctuary and used it for his mangrove restoration. You might have even seen it, for all I know. But they exposed you to the elements when you were out there in March and some of those months where you had the high winds; it was challenging, if you wanted to be out there. In the past, I think a lot of the wardens said, Well, those days nobody's going to be out there, so we don't have to worry about it, we don't have to be out there either. But I was more interested in, maybe I wasn't worried that people were going to disturb the birds, but I wanted to be out there anyhow.

So we then bought, well, my assistant, Jack Pulsifer, he bought another boat. We ended up with two boats, but he bought a boat that was a 14-foot little runabout, which was way under, again, underpowered and wasn't all that. It was good for him because he went out on good days, but it wasn't good for me. At that time, our Rookery Bay sanctuary was getting rid of a boat, a 23-foot Penn Yan cuddy cabin, inboard tunnel drive, and they gave me that boat. We put a new engine in it, and I used that until it crapped out. It was towards the end of its days, but it was a great boat. I could be out there, I could actually sleep in the cuddy cabin if I wanted to, offshore, and, plus, with that tunnel drive, I could get in 18 inches of water as long as I was up on top going, you know. If I had to cut the throttle and I was down then I—

AH: You were grounded.

DF: Well, I was worried at 15 inches for sure. Put it this way, when I didn't have it out far enough, when we'd be at the camp, I didn't have it anchored out far enough and the tide went out, you waited for the next tide to come in, you didn't push that boat. And then Sandy Sprung was getting rid of his tunnel drive, Penn Yan, but his was a 20-footer, v-hull instead of tri-hull and a little smaller. And I had that for a while until pretty much the same thing happened. These were boats that were donated to Audubon quite a few years before, and had been used hard, and were on their last legs, but for us boys in Tampa Bay, they were great, you know.

Then the final boat I got was an open fisherman, 19-foot with a 70-horsepower engine, outboard engine and tilt. And it was similar to the ones that Rich had, except Rich's was a little heavier boat; this was a lighter boat, easier to get around in the flats. But I got that, I think, I had it for two—probably got it in '76, and it was there. Rich, I'm sure; Jim, at least, used it in '77, '78. Yeah, we had evolved in boats down there, the ability to get around. Plus, in the summer, sometimes those thunderstorms would come up and you'd needed a boat to get you out of there. And when I first got down, you better learn the water or be aware quick because you weren't, couldn't outrun much, if otherwise.

AH: Now, where did you keep the boats? What marina?

DF: Different places. Originally, I was at the Alafia Marina up on Alafia River, and then, for a while, I was over at Apollo Beach Marina, and then, once I got that 19-foot open fisherman, I had a trailer, and I just trailered that. I lived in Ruskin, so most of the time I would go up to Gibsonton and put in at the little county boat ramp there by the bridge and go out, but I also would go to Terra Ceia, and there was a place you could put in right off of [US Route] 19, I guess it was. I can't remember the—I guess it's the road that, it might have been the road that went to, over the Skyway. I can't recall exactly, but there was a little—it wasn't a marina, but it was little pull off we'd put in. And then when I'd go down to Whale Key and the Town Islands, I would put in off Anna Maria somewhere. I can't recall exactly, public launch, and then we'd go down the Intracoastal probably a couple of miles or more, down there.

AH: Now, one of the activities that, for most sanctuary managers has taken a lot time, has been managing people, keeping the sanctuaries signed so that it's a deterrent. How did you guys approach that? How did you approach that?

DF: We did. We had a lot of signs. I had stencils, we made them up, or we bring them in and refurbish them and stencil them, and used two-by-fours. Yeah, I have, I used to have pictures of all that, but I don't think I could find them. I must not have them anymore. Used my carport and Jack, when he was working there in the beginning, he had them. So, yeah, we had them signed pretty well; they were four-by-four plywood.

AH: And you dug the posts into the beach? And then—

DF: Some of the slides I'm giving you will show those signs from the boat looking in. And even with those signs we had people that would put up right next to it, and throw the anchor out, and get out, and walk around, or leave their dog out to go to the bathroom. But the more presence you had out there and the more explanation you gave them, the vast majority kind of got what you were trying to say and didn't give you a hard time. There were a few that, when I first got there, and the whole time—well, the beginning time I was there, first couple of years, I guess it was—there were some mullet fishermen that, not commercial but recreational mullet fishermen, that used air boats and they would come in the cove on the east side of the Alafia Banks, and they used to try and circle the mullet, and they'd throw cast nets, and circle, and that. We got into tussles trying to tell them that they better not do it.

And then we got together with the fish and game, and I talked to them about the importance of boats staying so far off the banks. They agreed and so we made up signs that said it was illegal to go past this between, you know, I forget if it was 100 feet or a couple of 100 feet from the shore, and we put posts up. But it was very short lived before the Navigable Water Act; somebody complained that it was illegal for us to do that. I still think that there could have been a way to provide a restricted zone, but I don't know what it was. That concept—I was towards the end of the time I was there. It didn't last.

AH: Predator management has also been a problem on the sanctuary islands off and on.

DF: Yeah, when I was there, it's interesting you brought that up. When I was there, there certainly were raccoons and other things. I always thought there was a rat community up on, in those cabbage palms. I don't know if it was a black rat, I think. But they were in there, but yet the yellow-crown—I mean grey blues also nested up in there. I never felt that it was as significant as, I think, Rich Paul demonstrated. Now, thinking back on it, I can't recall finding something ripped apart or where teeth coons, but yet I remember seeing tracks along the beach where foraging, so I never got into predator control or raccoon control.

What I did know we had on the Alafia Banks was a healthy diamondback rattlesnake population. And the way I knew that was, you know, by seeing them. And I mentioned that there was an old warden's camp. The rummage of that—I remember one time Jim Rodgers and I lifted up part of the old thing, there were seven rattlesnakes hibernating under that; we just set it back down. And another time when I was in the blind looking at white ibis on Sunken Island, I was in the blind, and, all of sudden, I'm looking at these ibis and incubating and there all, heads go down, they're looking at the forest floor and I thought, Here's this eastern diamondback just nosing along, coming. Now, I have a burlap blind right on the ground, and the snake was kind of poking under pond fronds and stuff, and you know, I'm thinking, Oh my god, what if he comes, you know, pokes under the blind? What am I going to do?

Well, I worried, worried, worried and he never came by, you know, close to the blind, he just kept moving on. But that night, when I went out, I buried the bottom of the burlap because then I got thinking, What if he decides to come in there, and I'm in the dark? So, the other thing, we always checked our outhouse under the lid to make sure there wasn't a snake under there. But I always thought the snakes were having little impact. They probably took chicks that got dumped out of the nest. I don't doubt that, but I don't think they're very good climbers, so I don't think they were taking eggs or anything. And, if anything, maybe it was deterrent to the raccoons that might have been out there.

What I did find was ibis that were dead on a nest with the heads off and some of their breasts, the back part around up, but not the rest of it. I suspected that might have been an owl, but I don't know. But I do know that Rich felt very strongly and he had seen it, I think, maybe in Texas and other places that coons were having an impact so I know he was trapping for a while later on. But again, I'm not saying it wasn't happening, I just didn't notice it.

AH: So when you think about the public's attitude in Tampa Bay at the time, how would you characterize that? What did they think about the bay?

DF: You know that was a very dynamic time. There was really a cultural change, the environmental impacts, or the environmental movement, I should say, the blossoming of it had, I think, impacts, and it was right at that time when a lot of that stuff was happening. And I think you had the groups that were used to doing things where the environment wasn't a consideration, and I think they were very sensitive to the fact that here were these people trying to change the way they do business.

On the other hand, there was more and more people beginning to understand that what was happening out there had its consequences, and seeing the results of a cleaner bay and an improvement. But certainly dredge and filling was something that a lot of people were

upset when they had to stop it. The Marco Island case that Audubon was involved in down on Rookery Bay, down below Naples, was clearly something that went on while I was there, and it had started much earlier when I stopped it. The big-time developers were feeling the impact. The guys that made their living off of the bay, except for a few, they were really dying out when I was there. Joe Harris was one of my assistant wardens for a time, and he and his dad did some shrimping, but I don't think that was their major livelihood.

The mullet fishing kind of stopped. When I first got there, the mullet boats were still operating, but, by the time I left, they were gone. I think the sea trout and the red fish, commercial red fishing and so on, was also—I think they were, it was at that time or shortly after that, that they stopped that, tried to improve those populations. You know, a little bit of the time is since I did get back there, and I did keep up with things. It could have been a decade later and I'm thinking—it's hard for me to exactly pinpoint some of these times to the exact thing.

AH: Well, let me ask you just a—I'm going to ask you one more species specific question and then, you know, start to wind down the interview. I was talking with Jimmy Youngman; his family pioneered on the bay in the late 1800s. So they've been there, you know, over 100 years, and he commented about how plentiful horseshoe crabs used to be and fiddler crabs used to be, and he linked them to the availability of the salt terns that used to border the edge of the bay.

DF: The what?

AH: The salt terns, the salt flats.

DF: Salt flats?

AH: That used to border the edge of the bay? The ones, you know, created on the super tides?

DF: Yeah, they would have been inland of the mangrove communities.

AH: Right.

DF: Salt flats. Yeah, in fact, when we did that mangrove study there were salt flats between that and what were orange orchards further, a little further in, some of those agricultural land.

AH: Do you—

DF: I don't know, I'm just trying to think. When I was there, there was a good population of fiddler crabs on the flat by Whiskey Stump, between Whiskey Stump and Redwing fill. That's the one that always comes to mind because they were all over there. I didn't associate fiddler crabs at the back of the system, the salt flats part of the system. Whenever I saw them down there they were associated with the mud flats in and around those islands.

Horseshoe crabs were definitely there, and they used to come up on the beaches of Sunken Island and Bird Island. And, in fact, I think I have some pictures of them; I'll look then and where I had, you know, taken them. And what I've since learned is how important horseshoe crabs are to—shorebird migration in Delaware Bay is the classic—but there were good numbers of horseshoe crabs. I don't know if they were in the numbers that Jim remembers them because I'm sure everything was a lot more. The Kitchen didn't get named The Kitchen in the '70s. It was named The Kitchen back in the early 1900s, probably, because it was a kitchen, you went and got your food there. And I don't know if you could say the same in the '70s or even now, just by sheer volume.

They also talk when José Gaspar and his clan came into Tampa Bay they were afraid they couldn't get in through because of the masses of fish were out—for that is, I don't know, but it sure indicates there were major fisheries in the bay. And, of course, with the changes that have occurred, I don't think they can ever come back to that level of productivity, but it's still important that they save what's there and that they can restore what they can.

AH: Well, as we close out our interview, it's been great. We've covered a lot of history.

DF: Good.

AH: What would your message be for the residents of Tampa Bay for now and the future?

DF: I think a recognition that the quality of the outdoor life they have there and the quality of life that they can have there is really going to be, continue to be, dependent on

the bay, and the water quality of the bay, and the wildlife and fisheries of the bay, and that those aren't singular entities, as I mentioned with the herons, and egrets, and ibis going inland to feed on the freshwater areas. I don't know what development is occurring down there now. You know, when I was there, it was rampant, and you can't continue to affect or destroy those kinds of areas if you want to have a Tampa Bay worth recreating in, or worth living on, or by.

Vigilance, you know, I think we've all seen through time that without strong supporters of the environmental quality that slips can be made and fallbacks can happen. And, as we've fight over fewer and fewer resources, we tend to sacrifice things. I think that's why it's so important for somebody like Audubon and its commitment to the birds in Tampa Bay over as many years, approaching 100 years, that they be given the support to continue and to monitor those populations as indicators of the future.

Clearly, take advantage and require restoration where you can. I mean, there are so many opportunities there that we could do a better job at. I don't know if there's anything else. I haven't been there. I'm sure there are issues that have arisen since we were there, since I lived there. It was a fun time in my life, I can tell you. I enjoyed it, and I think it was a time in my life where I could see that my efforts were having an impact as well. And there were so many people that were—there was a movement at the time and so many people were involved from college professors and students. And I was involved at Save Our Bay²⁸ and, thinking back, Sally Casper and Tom Casper, Sally Thompson and Robin, the advisory committee on Cockroach Bay, I was involved in that. And Cockroach Bay is protected and an environmental ed[ucation] center is there and, hopefully, espousing appreciation, or gaining, or influencing appreciation of those qualities.

So much of the habitat I recall on the inland peninsula down through the ridge area, the highlands area, is destroyed now and, you know, many of the species are endangered, and the rampant development that's occurred there. I see on the television sinkholes that are occurring in Northern Hillsborough County, I guess, and elsewhere, so, I know the water table is being reduced and what impact that's going to have on wetlands and those river systems that are so important to continue to create the estuarine conditions in Tampa Bay.

It was great time. I enjoyed it. Thought of going back, thought of missed opportunities. I was invited by Robin when he created his mangrove restoration, to join. It would have been Caroline, he, and I. And I almost did it but decided to stay with Audubon, and looking back, glad I did, but, yeah.

²⁸Save Our Bay is an activist organization created to bring attention to the harmful effects of removing mangroves and sea grasses from Sarasota Bay for the purpose of land development in high-risk coastal zones.

AH: Well, Dusty, thanks so much.

DF: You're welcome, and thank you for thinking of me. There are so many worthy candidates, I don't know how you could get to them all, but, just for curiosity, how many people have you interviewed?

AH: In our project that we've had underway this year, we've interviewed about 20.

DF: That's great.

AH: So, all right, well, we've been speaking with Dusty Dunstan. Dusty was the Tampa Bay sanctuaries' manager for the National Audubon Society from 1973 to 1977. Dusty, thanks so much for all of your memories, your insights to the bay's management.

DF: You're welcome.

AH: We really enjoyed the conversation.

DF: So have I.

End of Interview