

Henry Tonnemacher: Good afternoon. My name is Henry Tonnemacher. I'm an environmental biologist by degree and by trade. Moved to St. Croix from St. Martin in 1977 to start up the Hydrolab Program and have been here ever since.

Hilary Lohmann: Can you tell us what is your earliest memory of Great Pond?

HT: Earliest memory of Great Pond would be when we would do the Round Island field trips for the students at the West Indies Laboratory, which was the campus of Fairleigh Dickinson University here in St. Croix. Great Pond was always one of our stops. And it would change over the years, but it was a great place to be able to—in the channel—to be able to look into mangrove roots and even just stick your head in the water. Even the drive in there where you can see the Pond itself. That's my earliest memory. I hadn't been to St. Croix before that. Well once but didn't see Great Pond.

HL: Can you describe the state of Great Pond at that time?

HT: At that time, I remember it as really a classic brackish or saltwater type pond, mangrove area, which are fairly common throughout the Caribbean. We have a lot of them on St. Croix. And that it was pretty healthy, you would see a number of juvenile fish species. One thing that probably stood out most at that time was the number of Cassiopea jellyfish—the upside-down jellyfish. They were all over inside Great Pond, which I thought was unusual at the time. And then as I learned a little more about saltwater ponds—all the different types there were. But at that time, it would appear that it actually flushed pretty regularly from the saltwater from Great Pond Bay.

HL: What stories were you told about Great Pond when you moved here and by whom? Who influenced you with their own history about the place?

HT: Yes, I'm spacing on the names. Otto Tranberg. Some of the people that were still around and maybe even with DPNR [Department of Planning and Natural Resources] or had recently been with DPNR when I first moved here. Because teaching at the West Indies Laboratory—scientific diving was the university course I taught—I would hear their stories. I was most fascinated by the stories of what is now Hovensa and what was Alcoa—or was Hovensa—and other ponds. And how just in their lifetime, the changes. They're seeing less diversity of birds, for example. Flamingos used to be fairly common in Manning Bay as I recall back at that time. I myself have seen ponds change just in the years I've been here. But Great Pond was still sort of a classic that still hadn't filled in. You know, generally over time, they get cut off with a barrier for the ocean. And then of course, they fill up with sediment, and then it's on their way to being new land.

HL: What sort of species of fish or birds or other wildlife would you see around there in the earlier days of Great Pond [inaudible]?

HT: In Great Pond, I don't ever remember seeing flamingos. That was maybe a little too an open area for them. Probably the biggest thing I remember would be as I mentioned before, the Cassiopea jellyfish. But juvenile fish like mangrove snapper—what else would be in there? Probably a number of different species of snapper in amongst the roots there. I don't remember

seeing as many species of classic reef fish like more of the butterfly fish and so forth that you would see for example, in the mangroves in Coral Bay or Hurricane Hole in St. John's—they're a little more open. Great Pond was a more enclosed bay. So, I think the number of species in there were going to be less than those type of environments.

HL: What are some of Great Pond's most important or otherwise interesting uses by the community, either from stories you heard or since your time at St. Croix?

HT: I remember myself, other than as part of the education for the students at West Indies Lab, used to take a kayak there. I don't know if there was a business, but tourists would sometimes get a hold of kayaks—I don't think there was a kayak business back then. And there was what is now still visible the path of where the saltwater tends to flood Great Pond Bay from the ocean. That was totally enclosed by mangrove. Someone actually had gone in with a machete and, not done any serious damage, but trimmed some of the mangrove so that you could actually paddle a kayak—mostly I remember by your hands, not big enough to use the paddles. It was a short distance from there—it ran basically west, and then would open up into the Pond where there was view right to the sky. The mangroves were pretty much surrounding the Bay at that time. That's my most vivid memory of the Pond.

HL: Do you remember how deep it was?

HT: I remember it being at least a meter deep, and maybe a meter and a half. So, four or five feet in places because I remember looking down, couldn't reach one of the Cassiopeias on the bottom but could at least see them clear depending on the tide or time of year—if we'd had a lot of rain or something. Sometimes the visibility was spectacular inside there. And you can see everything on the bottom and of course, fish darting around and so forth and so on.

HL: When you think of Great Pond as it is now what do you picture? What is its state?

HT: Impact by humans and natural causes as well. But the two together aren't necessarily the best thing. As we know the natural progression would be, over time, for that pond to probably fill up, get sedimented in, closed off from the ocean—as has happened and is still happening to a number of ponds on St. Croix, salt ponds. The trouble there is now we have less and less, if you want to call them fish hatcheries, or areas for juvenile fish to grow out and get big enough to be able to make it in the ocean. On top of that, we also have a situation with the lionfish—the invasive lionfish, which consume a pretty large amount of juveniles of commercially important species. Again, the watershed for Great Pond is not the same as it would have been. For me to even say that perhaps the natural progression of Great Pond is to eventually silt up, that may not have happened without impact on the watershed. Hard to say.

HL: What ecological state and its related community uses would you like to see improved or restored or even added at Great Pond?

HT: I think, one step at a time. What my understanding is what DPNR would like to do is to at least open up the channel to the ocean as the first step. Kind of see how that goes. I suspect it will probably go pretty well, as it's been successful in other areas. And perhaps if that shows

promise, to stabilize the sediment runoff from the watershed and maybe even deepen the Pond itself. At least in areas that we historically can remember—might even have and probably have documentation of what the depth was forty years ago or so. And the goal would be to increase nursery for commercially important fish species.

HL: What are some of the things that you think have contributed to the change and the ultimate degradation at Great Pond over time?

HT: Ah, variety. One could argue climate change. Are we having more of and more severe hurricanes? Is that hastening the natural progression of many ponds' development in the watershed? I would also think that we know with historical records that we don't have the rainfall on St. Croix that was here even fifteen, twenty years ago. And so that's going to be quite different. We don't have the vegetation and the soil consistency to hold more water. I would imagine, and I think data will show, that more sediment has been coming down into Great Pond than historically was in the past.

HL: What are some things that could be done maybe to slow down or stop this degradation of Great Pond?

HT: The other half?

HL: To slow down or stop these changes?

HT: Well, I think they can be addressed. What I've noticed in success stories in places that are similar—to first of all stabilize the watershed, that would be one of the most important things to do. That shouldn't be too difficult with maybe even different berms and keeping maybe a better record of rainfall and how much water—fresh water—comes into the watershed. And as I mentioned before, opening up the channel and seeing if that will stabilize with the freshwater coming in from the area. But I think those are all doable projects to reverse perhaps negative impacts humans have done. We see that all over the world where they think oh, the environment's been ruined. It's sort of cliché-ish, but Mother Nature's pretty good at fixing things if the impacts are stopped.

HL: Do you remember any of the impacts from major hurricanes? Hugo? Marilyn? [inaudible]

HT: Oh yes, I was here for all of them. And quite a few others. Hugo in particular. Irma and Marilyn. For example, one of the salt pond bays actually in Salt River was closed off or almost closed off—I believe it was in Irma or might have been Maria, one of the two. And now it is completely closed off. A berm is built up, and it'll be interesting to see the progression of that, which is what may or may not happen to Great Pond. My only knowledge of impacts of those hurricanes on Great Pond would be from satellite images or—I use Google Earth myself, and I always like to go back in time and see the images from back then and how much it's changed. The mangroves are practically gone. Mangroves were severely impacted in Salt River in Hugo also as it was in Great Pond.

HL: What is the story about Green Pond that you would hope to see endure over time and as things change?

HT: Number one would be as a fish habitat. Juvenile fish habitat because that has a lot of effects. And also, with proper I guess rules and regulations, as a tourist destination. It was a wonderful place to take a kayak. A lot of times when it was rough in the ocean, you could still take people there. You'd be in calm water and still see some tremendous animal life. And as [inaudible] education also—a lot of people don't realize the importance of mangroves; how incredibly important they are. Krause Lagoon being our biggest example, which is where the refinery is now and the aluminum plant, former aluminum plant. Tourism and education and fish habitat.

HL: Who else should we ask to talk to about the history of Great Pond?

HT: I would think most importantly, any person who's lived here thirty, forty years or more. And just to ask them. I think it's exceedingly important to have that information. Because we sort of take it for granted that anytime we see something interesting, we just whip out our cell phone, we get a picture of it. Fifty years ago, no one had a camera with them and then it took a weaker—unless you had your own darkroom to see the results. So, we don't have the data from back then. Whereas it's in a lot of people's heads—and they're not going to be around forever, so a project like this, I think is very important.

HL: Is there anything else you would like to tell us about your experience with Great Pond? Things we didn't ask that you think are important to share?

HT: Just what a classic salt pond it used to be. And Great Pond Bay, also a classic bay with what we would probably call a fringing reef on the outside with really only—well, the main opening is to the west off the Boy Scout camp, there's a couple channels to the east. Just a beautiful area for everything from birds—nesting birds—to juvenile fish, that provided a lot to the area. These ponds are dwindling rapidly all over the Caribbean, and St. Croix is no exception.

HL: So similarly, any final thought about the ongoing planning conversation around restoration at Great Pond?

HT: From what I've read and seen, the plans that DPNR and their contractors have, it's a good plan. Not trying to reinvent the wheel or do too much at one time, but to take it a step at a time, learn from other projects—very similar projects that have done the same thing. And that can then be monitored. And then we can see, as they say sort of baby steps—it keeps working keeps working, we can go a little farther, a little farther each time.

HL: With that in mind, how do we plan for climate change? Which elements of climate change are most important in our restoration planning?

HT: The three things I think are most important with climate change. Well, four things actually. Number one would be sea level rise. We shouldn't have as great an impact—St. Croix being pretty well surrounded by deep water; we don't have much of a tide. But still, if we add to that, the continuing decline of coral reefs. So, will the reef that's in front of Great Pond Bay—if it

starts to get less and less, it's not going to break down the waves as much, we could get more shore erosion. And then depending on climate change, are we going to have maybe a little more rain are we going to have maybe a little less rain? That's why I think the plan of taking it a step at a time is a good one. So, I think we can plan for it and predict it, and then by following the data, see which of these comes to fruition or perhaps it might not.

Unknown Speaker: One question. So, this project is to design a solution that [inaudible]. To go with that, is there anything that you think that should accompany something like that to help ensure the success not only of say, [inaudible] project, but something to help kind of as a guiding path to even further recruitment later on? Is your experience, coming here in 1977, with doing tours in the area, things like that—the educational outreach, do you think there are things that are lacking that accompany that to help bring this to the next step beyond that?

HT: Yes, definitely education without—it's sort of the cliché thing: if you don't learn to love something, you won't protect it. We have a great situation with the East End Marine Park being practically next door to Great Pond and Great Pond Bay, which is also really an unusual, fantastic environment. Seen everything in there from well, dying whales to tiger sharks. Over the years, just about everything. There are becoming fewer and fewer of those environments in the Caribbean. The decline of coral reefs is well documented. Will it continue? Hard to say. My guess is that coral reefs (would?) survive, but we won't see the diversity that we see now. I've been involved in projects where we take cores out of the coral reefs all over the Caribbean back to about fifteen thousand years. About every fifteen hundred years, the Elkhorn Coral disappears. Gone. And then comes back. Why that is, nobody knows. A lot of theories. So, if we see a decline in Elkhorn Coral—which we already have, severe decline. Just bleached for the first time in my lifetime in the Caribbean, and we lost a lot of it. About fifty percent of our coral that was here when I moved here is gone, forever. It's more than likely not coming back. So that's a consideration of how we are going to deal with climate change and all these other things. But I'm still optimistic. I think it's doable, I think education is important, and the proximity of East End Marine Park is a great, great addition to that. It's a short walk, or maybe even adding to the ability—I know East End Marine Park's working on this already to make maybe the road down there more accessible. But then there has to be some sort of monitoring of that so it isn't used as a dumping ground or anything. But still, I think a lot of the negatives we see are all reversible, which is hopeful.

HL: So are you excited about prospects to restore Great Pond Lagoon?

HT: Yes, when I when I heard about it for the first time, I thought, great idea. Again, not coming in with a giant crane and trying to dredge. In other words, not trying to do too much at one time. We've seen a lot of that. For example, some of the developments on St. Croix itself—like even in Salt River or even the refinery, that may be a little too much too soon. We've learned a lot since then, scientists have. These nasty swamps that a lot of mangroves were considered or salt ponds, we realize how important they are now. So we've learned as humans, what maybe we should be a little more cautious of. But I think I think it's doable. That's why I'm excited to hear it. And again, the plans that I've heard, seem to be well thought out. In other words, again, not trying to do too much at one time. One step at a time and see how it goes. And then maybe my grandkids who

grew up here—two of them, will be able to see some of the things similar to what I saw when I was their age, or a little bit older to them.

HL: Thank you.

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