

Karl Lessard: I would say we really didn't notice the grass downhill till [19]85, where we started talking about it. Where we first started seeing it is around the Johnson's Pier. We've noticed it in a few other places, in [inaudible] because we aren't allowed to be in that area. Around east of Bahia Honda, we noticed it, too, at one time.

Karen DeMaria: [inaudible] just this one that you were just talking about?

KL: Oh, this is where we started seeing it laid out right in here. We're seeing it these days. We started seeing it at the side of the First National Bank. This is the ground stack, [inaudible] Rossi Key, and the algae just pour right out through this stack.

KDM: Rossi Channel cut right through this?

KL: Yes. It's dirty water. Right here, between Oxford and Sand Key, to us, this is where we saw the worst red moss. It would be rolling right along the park boundary right there.

KDM: When were you all kicked out of the park?

KL: Oh, gosh. Karen, I'd have to look that up. I can't [inaudible].

KDM: I can always check that.

KL: I think maybe it was in the mid-[19]80s, [19]85, [19]86.

KDM: You have told me, I guess, since 1981, there are several blooms going on here.

KL: Right.

KDM: What and where?

KL: Oh, they've occurred everywhere. Right here on the East Cape, down the Sand Key, it's been one of the main areas. It's coming right here between [inaudible] and another one.

KDM: What is which bloom?

KL: What is which? Well, see they've changed. They change from year to year. Sometimes it could be ulva. One time, it'll be the red algae. But sometimes it'll be the green filament. That's what we call gumbo which is [inaudible].

KDM: It is this area right here?

KL: [inaudible] I would say, that area.

KDM: That is that one that kind of hangs out right there?

KL: Yes. That's probably one. It's probably right off the chart.

KDM: You said there was one that comes through here?

KL: Right through here.

KDM: So, you have got all kinds of different – what kinds? But those two areas seem to be the key points.

KL: Yes.

KDM: Ulva, gumbo. Gumbo is that green.

KL: Right.

KDM: Ulva, [inaudible]?

KL: Yes.

KDM: What else?

KL: I've got it written down. So, [inaudible].

KDM: Is there any rhyme or reason as to what, when, which ones are going to be of peak?

KL: It's just like Florida Bay, as it deteriorates and the temperatures are right, whichever is the prevailing one at that time. The red macroalgae is the predominant one.

KDM: You have this all written down and documented and stuff like that. I am just going to make a note of it. Because the other thing is I am identifying who has what kind of written stuff. So, if I cannot get into details, then I have a list of, "Okay. These are sources that people can go and talk to."

KL: Well, I've got it showing how it's grown. The south edge of it has expanded. Half of the west edge would have expanded because I fish off the edge of it.

KDM: Do you have 1982 algae bloom off of Sandy Key, those species?

KL: Most of it has always been the macroalgae that we fish down here in the south, the red macroalgae [inaudible]. We can't get near that green gumbo. It starts pulling the buoys down and rolls the ropes up [inaudible].

KDM: Is it slimy?

KL: Yes, long filament strands up to like 15 or 20 feet long.

KDM: That kind of siphons.

KL: Oh, my gosh.

KDM: I do not want [inaudible].

KL: I've seen so many of these.

KDM: [laughter]

KL: My net was so bad.

KDM: [inaudible] Is it Chaetomorpha? I actually said that right too.

KL: That's one of the main ones right there.

KDM: Nice snap.

KL: Thanks.

KDM: [inaudible] Who identified this for you? You did?

KL: Carol did. That could be it.

KDM: The other one? This is the red macroalgae that you said is the dominant?

KL: Yes.

KDM: [inaudible] definitely not one of my favorite things. Did you ever have any of that green slimy gumbo, what you called gumbo algae, before 1981?

KL: I'm sure there were small areas of formation when the water got real hot, small parts.

KDM: But it was not something that was ever a problem?

KL: No. They would never be in an area of more than, probably, 10 square miles.

KDM: What else do you want to tell me about what is going on in Florida Bay?

KL: Well, there's the turbidity of the suspended silt. This place is in Florida Bay that traditionally, I've seen the bottom for most of my life. But since 1987, I've never seen the bottom.

KDM: Since 1981, there has been a gradual decline. Then you are saying like 1987, it is just like someone shut the door?

KL: That's when it started really collapsing. Each year it's been –

KDM: Drastic.

KL: – drastic and multiplying in direct proportion upon itself and constantly moving west and east at the same time.

KDM: East up into?

KL: Into the Bay. [inaudible] All the guys say, "It's coming up." They have it in the east, and they see it moving west. But we see it in the west moving east.

KDM: [laughter] So, you are talking about guys that go up in here or guys that are right here?

KL: Guys that go up in here. This is what Mike Collins has told me and everything. They say Rankin Key was the center of the seagrass that died off. But we've seen the blooms under each cape.

KDM: Do you think this is all totally two different things going on? Is it so many different things going on?

KL: No. I think they feed upon each other. I think the blooms get bigger from the nutrients released by the grass. When they die, the grasses are carried by the tides, and then they get to change.

KDM: But you do start seeing the, "What came first, the chicken or the egg?"

KL: Well, that's something I can't say.

KDM: Did you notice the water park and the clarity before the seagrass died off?

KL: Yes. That's what we noticed first. But that doesn't mean that's the way it happened. It's because a lot of the seagrass at that time was dying off in areas that we weren't allowed to go.

KDM: That is a good point.

KL: So, naturally, outside of the park, we saw the water changing first, and then we saw the bloom starting to develop before we started seeing the seagrass die-off to the west area.

KDM: Where and when did you first notice the seagrass die-off in the area that you could fish in?

KL: Basically, these areas.

KDM: The ones that were blocked off?

KL: Right. I used to love to fish around Sand Key. It was great for fishing. Some of the best

lobster in the round. I haven't put a lobster trap around Sand Key now for five years.

KDM: Where do you put your little artificial reef things?

KL: [laughter] Everywhere.

KDM: In this area here or out –

KL: Well, I used to build them up into here, but now I no longer build a draft and pile east of twenty-two feet. Where before I used to build them all the way up into probably up to that in here. Now they're just off of the chart.

KDM: The water went from clear to what color would you describe in [19]81?

KL: Green.

KDM: Green? As in what kind of green?

KL: Sea green.

KDM: Sea green. Any of these colors?

KL: No.

KDM: What color is it now?

KL: Depends on what part of the Bay you're on. Right now, it's mostly a dark green.

KDM: Darker than sea green?

KL: Just a dark green. If you're in the middle of the cyanic bloom, it's almost black. It's actually olive brown.

KDM: The cyanic bloom, is that the bloom that everyone is talking about now?

KL: The one that's killing the sponges. But just to the west of the cyanic bloom, we have the diatomaceous bloom which...

KDM: Is that the dead zone? No?

KL: Yes.

KDM: That is the dead zone bloom?

KL: Yes. Well, the cyanic bloom also goes out into the dead zone. But the bloom from the dead zone west is the diatomaceous bloom. The diatom's structure changes about every five

miles. When it blooms, it's not just one certain type of diatom.

KDM: Really?

KL: Yes.

KDM: That is weird.

KL: Yes, it is.

KDM: [laughter]

KL: Out of five collections, we have five different basic make-ups of the diatoms.

KDM: Different colonies. Are there any other kinds? You have got cyanic bloom. You have got diatom bloom. What else is there?

KL: Macroalgae. Well, I think that covers...

KDM: Macroalgae?

KL: Yes.

KDM: What is that?

KL: That's your rolling moss, your –

KDM: Gumbo.

KL: – gumbo.

KDM: Are these year-round or?

KL: Well, they never used to be.

KDM: [laughter]

KL: They never used to be. They used to be when the water got cool, they were gone. Used to find the red moss would leave – I don't know – probably around the beginning of December. This year they never left.

KDM: Is this the first year that it has never left? You say or?

KL: No. I'd say last year was the first year that it never left.

KDM: [19]92?

KL: [19]92.

KDM: So, usually these blooms are mainly due to warm weather blooms?

KL: Right. Normally, they would leave in January, February, March, April, and part of May.

KDM: Then come back the next...

KL: But last year we had a mass of all the blooms up here during this period. But this bloom on the Ulva was so thick, it was clogging up people's sea strainers on their boats. People's heaters are blowing up from overheating.

KDM: Now where was it from? From all over?

KL: It ended up going out the Long Key bridge out into the ocean. It went all the way up to Shark River, following the park line. Then it went from the park line out to the west of the park line, and out for about twenty-five miles.

KDM: This one just dissipated or left?

KL: It finally left. It dissipated.

KDM: Dissipated.

KL: It was gone. It took about four months. This year we haven't seen a bit of Ulva out there instead, we've seen the cyanic and the diatomaceous bloom. This diatomaceous bloom, the water may not be as thick as it is up off – close to the cape, but I've still seen the same green water from the diatomaceous bloom as far as fifty miles west of the cape site.

KDM: What kind of [inaudible]?

KL: Fifty feet. The Bay's roughly a quarter mile from the land.

KDM: Really?

KL: Yes.

KDM: I need to remember that.

KL: Once you get above the parallel, this is the twenty-fifth parallel. Once you get above the parallel, your middle number on your longitude, like this 8105 – well, not from here, but once you get out to like fifteen, it actually corresponds to the depth of the water. If you're in 8115, you're in 15 feet. If you're in 8130, you're in 30 feet.

KDM: That is neat.

KL: Not everybody knows that.

KDM: Hell, I did not. That is a neat story. [laughter]

KL: It is true.

KDM: Oh, I believe you. I have never spent time back here. You have. Now, all these different blooms, are they doing the same type of thing to the different species? Maybe invertebrates, seagrass, sponges, or any fish?

KL: No. No. The cyanic bloom's the only one that's killed any sponges. All of them drive the fish away. The cyanic bloom's the only one that's been killing that has a count.

KDM: That is the one that is basically just really occurred, right?

KL: Right. The macroalgae have changed the bottom. They've taken what was normally healthy seagrass pollen underneath the gorgonia, here [inaudible] bottom until they covered it with calcium carbonate.

KDM: What is that?

KL: White.

KDM: White, refined silt?

KL: Yes.

KDM: Anything else you want to tell me about the algae blooming stuff right now? Well, probably, after I finish talking more to other people and stuff, I will probably end up having to come back and sit down with you to get more of – if you have a lot more information on that. So, I will definitely come back to you for that.

KL: There's not a whole lot of us that know what a bloom is. They keep saying the bloom, and how they've done it. A lot of people, when they look at the green in the water, they don't even realize that it is a bloom.

KDM: I know. I know. Who else besides yourself has got good, accurate information about the blooms?

KL: Tony [inaudible], (Albert Fox, Dale Koser, Richard Stiegler?).

KDM: I guess it is something that you all have been talking about on the radios and on the docks and stuff, right? What are you hearing from other people? What is the word out on the docks?

KL: About these blooms?



KDM: Yes.

KL: Most people just complain about how the fishing's gone down the tubes because of it. Like always, just more and more laws passed to stop us from fishing when it's not us that's driving the fish away.

KDM: What do you think is going on out here?

KL: What do I think is going on?

KDM: Yes.

KL: I think [inaudible] the collapse of Florida...

KDM: I know, but why? What is going on? What is triggering it? Do you have any gut feelings?

KL: I'm sure the hypersalinity has had a major effect on it. My uncle, he had his boat rattling and the water stopped coming through Taylor Slough, and it dug to C-111. He said to me, he said, "Karl, you've seen the beginning of the end of Florida Bay." It took roughly eleven years for it to start to really happen.

KDM: When did he say that to you?

KL: He said that to me in 1968. They dug Canal C-111, that's how it rocketed.

KDM: I never used it.

KL: No?

KDM: [laughter]

KL: It's used to be when you drove on the eighteen-mile stretch, look over the side, and you can see the water – during the rainy season – the water flowing all the way from across that grass going into the water there by Gilberts [inaudible] Creek and as far west as you could see. Since they dug C-111, we no longer – we've never seen that since. So, we've got a shallow area that used to get fresh water delivered to it. It's no longer getting the fresh water so the evaporation, such that the salt content's gotten out of hand. Then when it started dying, I think it's what's happened. My own personal opinion is that what contributes so much to these blooms, since we have phosphates coming down the west coast of Florida, and when all these blooms, the seagrass dies off, then their nutrients and their nitrates, get right there under each cape, or where these – possibly even in Sand Key because – I can show you where the current flows from – I'm going to get right under each cape. This is a northwest-southeast flow of water. So, you get right here, and then it turns to the east and west. So, the nutrients are coming down here.

KDM: That is right just above Oxford Bank.

KL: Right. Then it swings like this. You've got your phosphate and your nitrates mixing right there with sunlight. That's all you need, P, N, H, and sun.

KDM: What about this one here?

KL: Well, when it gets down here, the water changes, and it's running southwest, northeast coming through here. It brings these massive amounts of nitrates out through the largest tidal cap in the flats. Again, the same thing happens.

KDM: Talking about this part in Florida Bay, where is the swimming hole?

KL: Right...

KDM: Here? Okay.

KL: Right here.

KDM: Okay. Here it goes. [inaudible] It is too funny. Have you noticed a change, or I do not know, when is the last time you have been up into this area?

KL: A few years ago.

KDM: Has there been a change in the composition of what seagrass beds were there or just that one? The reason I am trying to get at is I have heard different things about the composition of the seagrasses and what Florida Bay used to look like before all this happened. What I am trying to get is information on what was Florida Bay like before...

KL: There were three main grasses in Florida Bay for years, especially in the east part. Now, there's not. The Halodule's gone.

KDM: Did the Halodule use to be so thick?

KL: Yes, it did. I would say I started seeing a decline probably in the late [19]70s.

KDM: Was it a gradual decline or something that was all of a sudden, they were gone? The turtle grass was there, or they were gone. It was sediment?

KL: Karen, I can't honestly say. I'd rather pass that one up because it wouldn't be accurate on what I'd say.

KDM: So, late [19]70s. Was it all wild Halodule up in here or?

KL: Oh, there was definitely a lot of halodule up there, and there was...

KDM: Rupia?

KL: Yes.

KDM: Where was Rupia? Was it intermixed all throughout or were there areas that it seemed to be more at?

KL: It was intermixed. I think that was affected a little bit more by the tide. There used to be large patches of calcareous algae out there too, and a lot of them have just died.

KDM: The macroalgae.

KL: The one that sits on the bottom, the green calcareous algae, looks like little tiny here that makes...

KDM: Halimeda.

KL: Yes. So, there were large patches of that. But it supports large amounts of fish life, too. That went down the tubes pretty quick.

KDM: This is all in areas that are really shallow, too, right?

KL: Right.

KDM: When did you notice the Rupia and the Halimeda? At the same time or before that or after?

KL: I think that I've noticed more of that in the early [19]80s, falling by the wayside, up until maybe – and around [19]85 is when I saw a drastic change in that.

KDM: In just Halimeda or both Halimeda and Rupia?

KL: Both of them. But again, I spent more of my time after the mid-[19]80s outside this area.

KDM: I am trying to build up for, anyway, where it was like a [inaudible]. Anything else you can tell me about the historically – what this area looked like? What about the mangroves?

KL: Oh, you definitely didn't see the interiors of the islands dying off. That's how I used to collect old bottles or look for old bottles in some of these places. Years back, I used to go with friends over there, alligator observing.

KDM: Observing or wrestling or what?

KL: Just observing them. It was illegal to do anything with them at that time. There was a major change. We used to see crawfish right up in the mangroves along the shore when I was a kid there. I can honestly say that I haven't seen a crawfish along the shoreline in Florida for –

[laughter] gosh, how long, twelve, thirteen years. I still have seen a few crawfish around some of these mangrove islands out in the Bay.

KDM: Are there areas that you have noticed that mangroves died off in the islands or stuff of that sort? Have you noticed it yourself?

KL: Just from flying over it, basically. I've watched it go from bright green in the middle to where you can definitely see it's on the decline drastically. There's no one area that I could probably put my finger on, but I'd hazard to guess where it was. I'm sure it's up in the same place as where the seagrasses died off.

KDM: So, a change in the life?

KL: Well, there's definitely a whole change in bird life in all of Florida Bay. When we had a few schools of fish out here, we had a few schools with lots of birds. As Florida Bay has gotten sicker, the bird life is drastically affected.

KDM: They are down there. [laughter] They are in [inaudible] Key West and Dry Tortugas now.

KL: I'm starting to see a lot of gannets that are dying, sitting dead on the water running down. Because I used to see the gannets about twenty to twenty-five miles off the cape. They're still in that same fly pattern, but the schools of fish aren't there for them. The six-, eight-inch fish that they normally ate. I had never in my life before had them lying on the boat where they stay to rest. This last year, I had them lying on the boat and just take a break.

KDM: Where are they coming from? Are they in their migration season right now

KL: Every year we see them up.

KDM: They come through and then they...

KL: They get back. But they're an ocean-going seabird, so I don't know exactly where they're going. But I've always looked for them because they've always helped me catch a fish.

KDM: But there is no fish to catch. It is just that your point earlier about how the fish are on the edge of the bloom and how they are all being pushed towards the Key West area now. Comments about hearing about fishing in Key West and a lot of comments on the bird life, that people have never seen so many birds in the Key West, Marquesas, the Tortugas area. It is just like a field day down there right now. It goes hand-in-hand.

KL: Last Sunday, I went out with a film crew. We went out to Marquesas. We spent the whole day out there. They were reeling the rest of the bird line.

KDM: or *Life* magazine?

KL: No. This was for the nature program in public.

KDM: Oh, that is the other...

KL: We saw two dead birds floating in the water.

KDM: Gannets or?

KL: No. Both of them were (tomarins?), maybe two seagulls, about six (tomarins?), and that was all the birds we saw for the day.

KDM: This is your park.

[end of transcript]