

**TRANSCRIPT**

**INTERVIEWEE:** Jeffrey Glassberg

**INTERVIEWER:** David Todd

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**David Todd** [00:00:02] Okay. Well, good morning.

**David Todd** [00:00:04] David Todd here and I have the great privilege of being with Dr. Jeffrey Glassberg.

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

**David Todd** [00:00:33] And, I wanted to stress that he would have all rights to use the recording as he sees fit. It is his.

**David Todd** [00:00:41] And, I want to make sure that that's okay with him.

**Jeffrey Glassberg** [00:00:43] Sounds fine.

**David Todd** [00:00:45] Well, great.

**David Todd** [00:00:45] Well, let's get started.

**David Todd** [00:00:47] It is Monday, May 8th, 2023. It's about 9:40 Central Time or 10:40 Eastern Time, where Dr. Glassberg is. And my name, as I said, is David Todd. I am representing the Conservation History Association of Texas, and I'm in Austin, and we are conducting a remote audio interview with, or actually, video in this case, interview with Dr. Jeffrey Glasberg, who is based in the New Jersey area.

**Jeffrey Glassberg** [00:01:17] Dr. Glassberg is a molecular geneticist who pioneered the field of genetic fingerprinting and has then later become one of the nation's leading experts on butterflies. And in that line of work, he has founded the North American Butterfly Association back in 1992, went on to publish nine field guides, and in 2002 organized the National Butterfly Center in Mission, Texas, and many other efforts as well.

**David Todd** [00:01:48] Today, we'll be talking about Dr. Glassberg's life and career, to-date, and especially focus on what he has learned about the history of butterfly study, appreciation, conservation. And we wanted to particularly focus on the monarch butterfly since it's such an iconic species.

**David Todd** [00:02:08] So, let's dive in with some questions.

**David Todd** [00:02:12] I wanted to start with your early years and whether there might have been some experiences in your childhood with people or events that influenced your interest in nature and in insects and butterflies in particular.

**Jeffrey Glassberg** [00:02:28] So, it's hard to know. You know, it's hard to know what triggers one. I spent the first five years of my life in Brooklyn, in Flatbush, in an area, kind of, I don't know how you'd describe it, but it's like, I'd guess they were brownstones, I guess. I'm not 100% sure. But it was all around the block. So, uh, a large block and all of the houses, then their back, the back of the houses, sort of, all faced a courtyard, common courtyard. So all the kids just ran around the courtyard and interacted. But there was no nature there of any sort.

**Jeffrey Glassberg** [00:03:13] And then, when I was five, we moved out to, in 1952, to Long Island to, as did so many people after the war, and into these housing developments that were just being built. And it was really in lots of woods all around it.

**Jeffrey Glassberg** [00:03:32] So, I do have this memory of getting to the house and seeing a chickadee on a fence. I was five. I knew of that. And, of course, there were butterflies around, so I got into butterflies and birds.

**Jeffrey Glassberg** [00:03:47] And, all the little boys there did that. So, we had a group of maybe like 15 of us, maybe it was 12, and they were all boys, whatever. They, these were all people that lived on the block. So it was a very homogeneous area. And so, there were all these young families with kids and there were all these kids that were in my classes. And so there were maybe as I say, 12 of us that went around and collected butterflies. That's what you did then. You had nets and ran around and chased butterflies and then got, and then went and looked at birds.

**Jeffrey Glassberg** [00:04:41] And, I assumed, so, that that's, I assumed that's what all kids did, you know, because that's what we all did. And then it wasn't till I got to college, of course, many years later, that I found that no one else did that, you know. That was, I mean, we all collected baseball cards, and played stickball, and tackle football with no equipment and stuff. So we did all of the other usual, you know, male things, sort of, you know, when we were kids.

**Jeffrey Glassberg** [00:05:15] But, but it turns out nobody else went looking at birds and collecting butterflies. So that was unusual.

**Jeffrey Glassberg** [00:05:23] And then, it turned out that of like people in my first grade class, many of whom I still see. I saw, I stayed at one of their houses in Connecticut yesterday night, actually. Of the people in the class. Of course, I've spent a good part of my life doing butterfly stuff. And then one of the guys in the class, he's curator of Lepidoptera at the Smithsonian - Bob Robinson. And then the third guy in the class, he was the chief lobbyist for National Audubon Society. And then he was on the board of the World Wildlife Fund, and was president, CEO, of Al Gore's Climate Reality Project. So three of the people in this little group of 12 went on to spend their lives really about nature and butterflies and birds. Two of us really do butterflies; the other one is really more of a bird guy.

**David Todd** [00:06:29] Do you have any speculation about why the three of you were particularly interested for your whole careers, but then even the other nine who seemed to have an interest in something that is kind of unusual, it's kind of rare.

**Jeffrey Glassberg** [00:06:42] Exactly. That's what I'm saying. And I didn't realize that till I went to college. And then I found out that, no, there weren't, really, that's not what, you know, most kids, but they didn't. So I don't know. I really don't know. It's something in the water, you know, maybe it was a fluoride thing, you know, a Russian plot or something like that to distract us. So, I don't, I really don't know what it was, but it is pretty, it is unusual that there were, you know, that the three of us were there since first grade.

**Jeffrey Glassberg** [00:07:22] And, but, there were breaks. So, you know, when we got to, when we hit like 13 and puberty, you know, even in those days and of course, I'm sure are still now, you know, running around with a butterfly net was not a cool thing to do. And it's not a cool thing to do now, as it shouldn't be. I mean, that's one of the things I'm trying to do, is change the image of a butterflies from interacting with them with nets, which is ridiculous now. But at that time that was the only way that people knew how to do it.

**Jeffrey Glassberg** [00:07:54] So, get to be around 13, that just wasn't cool. And so basically we stopped that. And binoculars were a lot easier to hide than nets, you know. You know, it wasn't as obviously, you know, terrible. So we continued to go birding, and kind of gave up butterflies. And it wasn't until, you know, I don't know how old we were, it was probably about 19 or so, 20, that we got back into butterflies - two of us. But, the other one stayed with birds.

**David Todd** [00:08:43] Well and you had mentioned college and hitting 18,19, was there an experience or a set of experiences at that point of your life where you're back into Lepidoptera, you know, you're getting more skilled and familiar with birds. Anything that might have contributed to developing that, that kind of side of yourself?

**Jeffrey Glassberg** [00:09:05] Well, birds, I mean, I continued to bird. So, like I was an undergraduate at Tufts. I was a civil engineer, although I knew from the first day that I wasn't going to be a civil engineer. First day of class, they had a course called, I think then it was called mechanical drawing. I think it's called something else now. I don't know. And I remember in the first day the assignment was to design a wheelchair that goes up stairs. And I scored the lowest 1% of the country in mechanical aptitude. And I can't see things in three dimensions. I didn't realize it at the time, but I do know now, I can't envision anything in three dimensions.

**Jeffrey Glassberg** [00:09:48] And so, there were all these guys in the class (and it was all guys), and there they are, they're drawing gears and sprockets and stuff like that and designing wheelchairs that go upstairs.

**Jeffrey Glassberg** [00:10:01] I hadn't a clue. So I walked out of the class, never went back. It was a requirement to graduate, but they waived it for me. But so I knew I wasn't going to be an engineer.

**Jeffrey Glassberg** [00:10:14] But anyway, the other thing that happened was the first day I moved into the dorm. So this all happened within a few days of each other. I moved into the dorm and it was a new dorm and it was overlooking, it was facing north, overlooking a hillside. And I could look out the dorm and we were on a sort of high floor. And it was a hillside. And I could look in the distance and I see this green space way in the distance.

**Jeffrey Glassberg** [00:10:45] So I immediately went out and started walking. And I walked (it was, you know, quite a few miles) to this green space, which was called Middlesex Fells

Reservation. And so I would go out there a lot, by myself, actually, and, you know, look for birds and stuff, and eventually butterflies.

**Jeffrey Glassberg** [00:11:06] But the way we got back into butterflies ... I don't know ... this is a story that cuts a number of ways. This was the sixties. And, you know, that was a time, and so it was probably around, probably '68 or something like that. And so, my friend, who's the guy, who's now curator of Lepidoptera at the Smithsonian. And we decided we were going to take psilocybin, which is this hallucinogenic mushroom. So we decided, well, we wanted some nice, safe, big, flat open area (I don't know what our thinking was, really), where we would do this. And, you know, in other words, we wouldn't be falling down a hill or off a cliff or something like that, you know, if something untoward happened.

**Jeffrey Glassberg** [00:12:09] So, we search around for spots. And this was, we were, I guess it was summertime. So, and so we were on Long Island. And we were in Rockville Center, Long Island. And we find a field, a nice big open field that looks like a good candidate to do this. And we start looking around the field and it's filled with skippers. Now, skippers are a kind of butterfly, a family of butterflies, and it's filled with all these skippers, and different kinds, and lots of them, and everything. And so it gets us pretty excited.

**Jeffrey Glassberg** [00:12:47] And we run home and we get our old butterfly nets that we hadn't touched since we were 12 years old. And we come back and we start looking to see how many kinds of skippers there are. And so that's what got us back into butterflies, was looking to take psilocybin.

**David Todd** [00:13:04] That's great. That's great. Well, what a wonderful way to return to something that you were passionate about as a child. There's so many things that sort of become uncool and we abandon them. But it sounds like you were able to return to those early enthusiasms.

**Jeffrey Glassberg** [00:13:21] Yeah, well, that was it, you know, and it was it was it was looking to take a hallucinogen that brought us back to reality.

**David Todd** [00:13:28] A good reality. Well, wonderful. You know, you mentioned this classmate and childhood friend. Were there others who, you know, encouraged this interest - teachers, other colleagues at Tufts?

**Jeffrey Glassberg** [00:13:48] No, I would say my parents mildly discouraged me. They didn't see any point in any of this kind of activity to get, you know, didn't see where that would lead to, you know, in a positive way for my life, I guess. But they weren't, they were, I would say they were not encouraging, but they were not draconianly opposed, you know, And they would, you know, when I would ask for a pair of binoculars or something, I would get it. But it would be like, it wouldn't be like, as I say, it was, you know, they went along with it, but they certainly weren't encouraging.

**Jeffrey Glassberg** [00:14:31] So, you know, I wouldn't I mean, I would say, I just, starting when I was 13, around when, I guess I was 13. I belonged to a, there was a group called Linnaean Society in New York City. It was basically a birding group. It still exists, still there. And I don't know if they still meet there, but they used to meet at the American Museum, and they may still do that, I don't know. They used to meet at the American Museum of Natural History.

**Jeffrey Glassberg** [00:15:02] So, I lived on Long Island when I was thirteen. So I would take, and they met like, I don't remember now what it was, but it was like the first Thursday of every month or something. So I would take the train into the city by myself. I was like 12 or 13. And then I would take the subway up to the American Museum and I would go to the meetings. So I was pretty much into this stuff all along on my own really. I don't, there weren't any outside.

**Jeffrey Glassberg** [00:15:33] I mean, I knew, I did. Of course, we ran into people, you know? I mean, they, I mean, there was a guy, he was actually the pediatrician of the guy who, Ken Berlin, who was head of, the CEO of, the Climate Reality Project and stuff. His pediatrician, Ben Berlina, was a big birder, also a very big orchid guy. He was president of the American Orchid Association or something like that. And so, you know, he was encouraging, but, you know, I didn't see him that often. But we knew him. We would go around with him, and some other, you know, older males, a guy named Dick Sloss, who was a big birder. And so, you know, sometimes we would go birding with them and so forth.

**Jeffrey Glassberg** [00:16:33] But in those days, it wasn't, there weren't that many people. So, in those days, like if I'd go someplace like Jamaica Bay National Wildlife Refuge there would be... Which was a fantastic place, much better than it is now. I mean, not just because the world has changed for the worse in the way of nature out there, really. But, you'd go out there and you wouldn't meet many people, you know. And whoever you would meet, you would say hi and talk to because it wasn't like there were many. And it was, you know, sort of stereotypically little old ladies, not that I have anything whatsoever against little old ladies. My late wife, she was not little, but she was an old lady.

**Jeffrey Glassberg** [00:17:26] So, so, but you know, now there's a lot more people into birds. I mean, this was in the fifties, I'm talking about in the fifties. There were just, you know, I mean, there were people, but it wasn't, it was not a common thing. And you didn't see people looking at birds in advertisements like you do now or, you know, or sometimes.

**David Todd** [00:17:52] Well, that's interesting. So it sounds like maybe you were sort of an autodidact with some support from just a few mentors and then your childhood friends who shared this interest.

**Jeffrey Glassberg** [00:18:04] Exactly. It was just what we like doing. It wasn't, there wasn't an adult that got us into it, you know, at least that I know about, for me. I mean, I can't speak for every, you know, you know, everybody else, you know, whether there was somebody in their life, an adult that did. But it certainly wasn't true in my case. It was just it was like I say, it's like no adult got us into collecting baseball cards or playing stickball. It was just what we did. And that's what we did. And I don't know why.

**David Todd** [00:18:37] So, we talked about people and personal experiences. Were there any sort of general-interest books, TV shows, movies, you know, things out in the culture that you might have sort of picked up through osmosis that would have encouraged an interest in nature?

**Jeffrey Glassberg** [00:18:54] Yes, I would see things. I mean, I would read you know, I read books. I mean, by the time I graduated, by the time I was in sixth grade (my elementary school went to sixth grade), and I had read literally every single book in the library. I mean, you know, that's what I did. I read books, you know. And now I don't read books, but I did then. But that's what I did all the time.

**Jeffrey Glassberg** [00:19:16] And so, I read everything and I read, you know, I read nature books and collected them. I mean, I had them, you know. And science books - there was a little series called "All About ...", you know, All About Butterflies and Moths, All About Birds, All About, you know, Astronomy or something. You know, there was a whole series, I think they were called, "All About ...". I had all those and tons, tons of other things.

**Jeffrey Glassberg** [00:19:44] And so I would read them on my own and I would get things like National Geographic and there was an artist in there, a guy, and I'm embarrassed to say I'm forgetting his name, which is horrible. And he did lots of the wonderful nature paintings. You know, he would be painting, you know, grizzly bears getting salmon in Alaska and stuff. And so, I would try to copy them and stuff like that.

**Jeffrey Glassberg** [00:20:18] You know, so I got exposed to lots of things that way, you know, but just through reading stuff.

**Jeffrey Glassberg** [00:20:32] And I started, you know, when I was young, I'd go to an orthodontist, which didn't, wasn't very good - you know, my teeth are a disaster. And then, but he would have like science magazines in his office. And so, I would borrow them all. He would let me borrow them, and take them home. And so I would read through all of those science magazines. I mean, that was what it was called, Science. Science is one of the two big science magazines in the world, science journals in the world. This wasn't, it was this was not like a popular magazine. I mean, this was the real thing. A journal called Science, as a journal called Nature: these are preeminent. Articles of the most widespread scientific importance, often are published in Science and Nature. Not always. They're also published in other things, too. But so it's a real magazine. It's not like Scientific American, which I used to read also, but it's not like that.

**Jeffrey Glassberg** [00:21:38] So I used to borrow all of these things and he'd give them to me. And, you know, when I was a young teenager and read them. But again, you know, there wasn't anybody so much. It was more internal, whatever it was.

**David Todd** [00:21:55] So, we've talked about people and experiences and books and magazines and so on. Tell me about experiences with creatures. Do you remember your first encounter with a butterfly of any kind?

**Jeffrey Glassberg** [00:22:12] I don't know if I remember my first. I remember, I mean, I remember ones before we had nets. I mean, you know, what we used to do, again, this is you're talking about when I'd be like, let's say, six years old. And we would run around the field and I would use like a baseball cap or sometimes a shirt to try to capture the butterfly. So I remember that with, you know, all sorts of things, Black Swallowtails.

**Jeffrey Glassberg** [00:22:47] And then, later, we had a net. I do remember getting a, I do remember, next door to me was my aunt and uncle, lived next door to me. But they weren't on speaking terms with my parents, actually. But they were with me. And their backyard, unlike almost all backyards there, you know, which, you know, normal people have, you know, cut green lawns and stuff. And their backyard wasn't like that. It was just whatever was there - natural. So it was much more interesting and there was stuff there.

**Jeffrey Glassberg** [00:23:25] And, I do remember getting when, you know, when I was I was probably about nine or something, a swarthy skipper, which is a really, you know, I thought

this was the most amazing thing ever. And, you know, it's rare and, you know, whatever. And it's completely indistinct. It's hard to imagine another butterfly more indistinct than a swarthy skipper, I can tell you. It's about, oh, I don't know, you know, just less than half an inch long. And it's just a dull, gray brown with almost no markings on it at all. But I was very excited about that, so I do remember that one.

**David Todd** [00:24:11] Well, so what do you think the appeal was in those early days? Was it just, you know, that these, you had to hunt them and capture them and bring them home and identify them? Or was it the beauty of it?

**Jeffrey Glassberg** [00:24:22] You know, you know, it's hard to say because we did bird. So here's the thing. We did both. Because, you know, I get this all the time. I get this all the time from people that still kill butterflies, collect them, and they say, "Well, you know, you started that way. And, you know, how would we get new lepidopterists if we didn't do that?"

**Jeffrey Glassberg** [00:24:40] But, you know, at the same time we were doing butterflies with nets, because that was the only way you could do it, we were looking at birds. And we weren't shooting the birds. You know, we were learning to identify all the birds and so forth. And you know, we did it with binoculars and just ears and binoculars and stuff.

**Jeffrey Glassberg** [00:25:04] And, you know, I would say essentially all of the, you know, even if you care about this, if you think, oh, it's important that we have ornithologists and lepidopterists (I'm not so sure it's so critical), but if you think it is, as opposed to ecologists and evolutionary biologists. So, ecologists is good and evolutionary biologists, people that, what they're interested in is the bird rather than the evolution or the ecology, I find less interesting, but that's a different issue.

**Jeffrey Glassberg** [00:25:43] So, so people often say, well, how are we going to get a new ornithologist? But, you know, the guys that are ornithologists now didn't grow up shooting birds, most of them. You know, they grew up with binoculars and still they became ornithologists. And sometimes now they do shoot a bird, you know, get a bird to do whatever they have to do to study some kind of physical thing or something.

**Jeffrey Glassberg** [00:26:07] So, I'm saying the fact that, at that time, the only way you could interact if it was now, I mean, like at the butterfly center, we have thousands and thousands of schoolkids come and we show them how they can look at butterflies with their eyes and with binoculars and so forth.

**Jeffrey Glassberg** [00:26:24] So, you know, there's no reason why they can't grow up to, if they're interested, to study butterflies or be interested in butterflies.

**Jeffrey Glassberg** [00:26:31] So, I think, you know, this whole thing about, as I say, the world changes. I mean, people used to always, the only way they interacted with birds to study them was pretty much shooting them in, you know, until about the 1890s.

**Jeffrey Glassberg** [00:26:56] And what I always say is this, is that, I mean, if you look at the history of people's interaction with birds and butterflies, I mean, this way, you know, it wasn't radically different, the number of people interested in birds and butterflies through the 1800s, let's say, in the United States. And there were, you know, a few people that were really well known and famous for this in both fields.

**Jeffrey Glassberg** [00:27:22] And then, in the late 1890s, people realized you could start identifying birds with binoculars. There was advances in optics. And then after World War Two, World War One, rather, optics became a lot less expensive and there were a lot of war surplus and everything. And so that led to more and more people having access to these things and led to this great increase of people looking at birds in the twenties. And that led to people writing the first bird guides and so forth.

**Jeffrey Glassberg** [00:28:02] So, until the late 1890s, birds and butterflies were the same. After 1890s, birding started to grow bigger and bigger and bigger and butterflies stayed the same.

**Jeffrey Glassberg** [00:28:13] When I started in the late 1980s, there were no more than maybe a hundred serious people that, let's say, would go out in the field like, let's say, every week looking for birds, right, for butterflies, rather. Maybe 100 over the whole country, where there were tens of thousands of bird people doing that at that time.

**Jeffrey Glassberg** [00:28:45] So, there was this juncture, junction, I guess, in the 1890s, bifurcation, where birds went to optics, butterflies stayed with nets and killing and, and the result was radically different in terms of involving the public.

**Jeffrey Glassberg** [00:29:05] And so, my interest is butterfly conservation. And to conserve butterflies, you have to have a public that cares about them. To have a public that cares about them, I believe you have to have them involved with it, which means not running around with nets, which just is dysfunctional.

**David Todd** [00:29:30] So, I think you mentioned running around with nets and using binoculars in Long Island, and I guess in those distant green spots outside of Tufts. I understand that butterflies also took you down to Latin America, South America. Can you talk about any of those early trips that you took to explore the world of Lepidoptera down there?

**Jeffrey Glassberg** [00:29:58] So, we did. So, once Bob and I got back into butterflies, then, so it was interesting. It's kind of weird. So we got back into butterflies and initially, you know, for a short while we were collecting everything, butterflies. But, then within a few years we just focused on hairstreaks, which is (both of us) a subfamily of butterflies, a small group of butterflies. I mean, small physically. There's, I don't know, I think maybe there's something like 1500 species in the New World and more worldwide, of course.

**Jeffrey Glassberg** [00:30:57] So, we would sort of go farther and farther afield looking for butterflies. And then, as I say, as we went on, it was more and more we were just only looking for hairstreaks, and we didn't ... because hairstreaks were extremely, were very poorly known, were one of the, if not the most poorly known group of butterflies at that time. Like, they were all, like most of these 1500 species were all lumped into one genus, which people knew was ridiculous, you know, but they didn't know, you know, have a, know how to sort them out.

**Jeffrey Glassberg** [00:31:34] So, we were interested in that.

**Jeffrey Glassberg** [00:31:36] But we would go further and further afield. So, you know, we would go to Florida. We had a field trip to Florida. Lots of, we don't have the time, but and this may not be the place, but there were a lot of interesting things that happened on these trips. And so, we would go to Florida and then then we went to the Rio Grande Valley because so we

had, there was a book written by Alexander Klots in the Petersen Field Guide series. I don't know if you're familiar with that. You are.

**Jeffrey Glassberg** [00:32:21] Okay, so there was these guides, and by the way, so I interviewed Petersen one time, and one of the things I talked to him about and asked him was, well, you know, he'd written these books about field identification of birds. When they expanded the series, you know, he was doing this for Houghton Mifflin, and they did a bird guide in 1951 that Klots wrote. Well, why didn't he, you know, insist that it be a, you know, a field guide rather than a guide to dead butterflies, which is which is what it was. And, you know, so again, a funny misnomer the way everybody calls these things field guides, but most of them aren't field guides. They're a guide to dead things and they're not to identify things in the field.

**Jeffrey Glassberg** [00:33:13] But anyhow, so I asked him how come? And he said, Well, Klots told him that it wasn't possible. And at that time Klots was probably right. I mean, you know, it wasn't just, you know, I mean, there wasn't, you know, at that time any reasonable way because just with your eyes, I mean, I mean now, the vast majority of butterflies - I see. I can just see. But, but, you know, I've done this for so long that you know. But and it's, you know, and that's, let's say, here.

**Jeffrey Glassberg** [00:33:52] But if you're in a new area and things like that just with your eyes, you know, the butterflies, many of them, as I say, are only a half an inch big, and they're moving around so that just with your eyes, it's very difficult to do it. As it is with birds. You know, warblers up in treetops, with your eyes, it's hopeless.

**Jeffrey Glassberg** [00:34:13] So, so you need the right optics, right optical equipment. And that was ... it didn't exist. It did not exist in the fifties. There was nothing that would work, really, in terms of binoculars. That's the key to get this. Because at that time, all of the binoculars, the closest they would focus would be, most of them, would be like 20 feet. And the best ones maybe would be 12 feet or 15 feet. So, in other words, you'd have to be that far away. And then a half-inch butterfly, you're not close enough to see it, even with that.

**Jeffrey Glassberg** [00:34:52] So anyway, so what was I saying? So I had this book. I want to know how I got into Klots. So that was the book we had. And a lot of the, and it would label where the specimens and that's what it shows - dead butterflies. That's why I say it wasn't a guide to live butterflies.

**Jeffrey Glassberg** [00:35:14] And, by the way, dead butterflies look very different. When you have a museum spread-out dead butterfly, it looks very different from a live butterfly. It holds its wings differently. So, and a lot of the things that are on the live butterfly go away. So like eye color goes away, you know, changes.

**Jeffrey Glassberg** [00:35:42] [Here, let me. That'll stop in a second.]

**Jeffrey Glassberg** [00:35:48] But the eye color changes, things on the body, whatever.

**Jeffrey Glassberg** [00:35:53] So anyway, a lot of these specimens, they were labeled Pharr, Texas - P-H-A-R-R. Actually, I should go check that. I have, I saw the book sitting there. I think it was Pharr, they were labeled. And that was really from where, I don't even know if it existed as a thing yet, but it became Santa Ana National Wildlife Refuge.

**Jeffrey Glassberg** [00:36:18] So, I don't know, I'm not sure of that, actually. I'm not sure when Santa Ana was started. I should look for that.

**Jeffrey Glassberg** [00:36:25] But anyway, that was here, so we decided we'd go too Pharr, Texas, you know, that's how. And we went down there and looking for butterflies. And then the first time we were there, and this was in again, the sixties. It was cold. It was December. And it was cold and overcast and we didn't see much. So, we just continued on to Mexico. And so, we drove down to see your Ciudad Victoria, and saw all sorts of things, you know, incredibly exciting for us, you know.

[00:37:03] You know, we'd see ... there was, there's a butterfly (didn't have an English name then, but now Superb Cycadian), which is *Eumaeus childrenae*. And this is a hairstreak. But, as I told you, most hairstreaks are small. They're only like half an inch big. But this guy is like maybe more like two inches big. It's like the biggest hairstreak around. You know, it's like a giant and it's got iridescent green and gold on it. It's just incredible. And it doesn't even fly like a hairstreak or anything like that. So it was pretty amazing. And all sorts of other stuff we would, we would see.

**Jeffrey Glassberg** [00:37:47] So that's, and so then, we would, we both, we both took jobs. So it was the sixties, it was the late sixties and we took jobs and graduated from, both of us graduated. He graduated from Brown. He was a math major. And I eventually graduated from Tufts as a civil engineer, although as I said, that was kind of absurd.

**Jeffrey Glassberg** [00:38:10] And, we both took jobs teaching. And I took a job out at Greenport, New York, which was a federal poverty area. And it was like another world. It was mainly potato farms. This was 1969. Most of the kids you, probably, I'm sure, coming from where you are, you're not familiar with Long Island, but Long Island, it's shaped like a fish and the head is like Brooklyn and Queens. And then out at the tail, it splits. There's the North Fork and the South Fork. It looks like, you know, a fish tail. And Greenport's the North Fork. The South Fork is where the wealthy summer thing, you know, the Hamptons, you hear about the Hamptons and stuff.

**Jeffrey Glassberg** [00:39:20] The North, the North Fork was a federal poverty area. It was potato fields. And no one lived out there then.

**Jeffrey Glassberg** [00:39:27] And, most of the kids in the class had never been west of Riverhead, which was where the two parts of the tail came together. So it was like 30 miles or something: that was as far west as they'd ever gone in their life, most of the kids. No one had ever gone to college, kind of thing. So it was pretty, pretty interesting there.

**Jeffrey Glassberg** [00:39:53] And it was, I won't go into it, but it was a strange place in a number of ways.

**Jeffrey Glassberg** [00:40:03] But anyway, so I taught there. I taught seventh grade general science, eighth grade general science, ninth grade general science, tenth grade regents' biology and 11th grade local biology. So five different courses. So, I never taught before. So, each day I'd have to prepare class, five completely separate classes each day.

**Jeffrey Glassberg** [00:40:23] So, but, but they paid me a fortune. So, it was like, it was \$10,000 a year, in '69. And that was like so much money. And I say with no sarcasm, I say, for real. It was so much money that we had money to do whatever we wanted.

**Jeffrey Glassberg** [00:40:44] So Bob and I, every vacation, whether it be, you know, Easter or Christmas or the summer, we would take off and we would go, you know, we would fly to, Puerto Rico looking for butterflies or, you know, we would go to Mexico. And so, as I say, we would progressively go farther and farther afield, you know, there and we'd go to Venezuela. We went to Venezuela and all sorts of things happened there. And people thought we were marrying them and stuff like that.

**Jeffrey Glassberg** [00:41:25] And then, we eventually, we made it to Colombia. We picked, the first time we went, it was because actually we looked at a National Geographic map and I don't remember, but they used to have maps all the time. They were big on maps. And they'd have all these maps and they would have red stars where they were airports. And in Colombia, there was an airport in the town of Leticia in Colombia. And so we said, "Okay, that's where we're going to go." So we did. So that's all we knew, really. And we flew into Leticia.

**Jeffrey Glassberg** [00:42:15] And I don't know if you want to know these stories or not. Honestly, I mean, I don't know, because it was kind of an amazing thing in a number of ways.

**Jeffrey Glassberg** [00:42:31] But anyway, so that was our first time on the Amazon and all sorts of things happened there. And we got birds.

**Jeffrey Glassberg** [00:42:41] And then we went back for an entire summer and we would go, I would go and we stayed in the center of Colombia, in a town called Villavicencio. It was on the very edge of the Andes overlooking the Llanos, and I would go up. Bob was sick for a lot of the time when he was there. We had all sorts of parasites and other things. And I would go up. In the town, they had a statue of Christ overlooking the town. And I would go up there every day, because there'd be, the area all around there was filled with this kind of plant called cordia. C-O-R-D-I-A is the genus.

**Jeffrey Glassberg** [00:43:41] And that, cordia plants, are like catnip to hairstreaks. They're just incredibly attractive to hairstreaks. And so, I would go up there and spend all day, every day, for months collecting hairstreaks on these cordia flowers. And I guess got about, and by the end I was pretty good at it. So you would, you know, something'd fly in, and I would know what it was immediately. No, I wouldn't know its name because nobody, I mean, I wouldn't know, you know, the name of it, but I would know what it was, you know what I mean? And so, there were, well, like 150 species of hairstreaks on this one little hilltop.

**Jeffrey Glassberg** [00:44:30] And then, all sorts of other things happened that ... Whatever. So, that's how we started going, you know, traveling around looking for butterflies, further and further afield.

**David Todd** [00:44:51] Well, it's interesting to me that the search for butterflies or birds often seems to be packaged in with a whole context of exploring the world. So, thanks for for sharing that with us.

**David Todd** [00:45:05] So, I know you've studied many, many different kinds of butterflies - hairstreaks you mentioned. Today, we're hoping that you might be able to touch on a little bit about the monarch butterfly, which is such an iconic, easily recognized butterfly that a lot of people can maybe relate to. I was hoping you could give us a little bit of an idea of the life history and ecological niche that a monarch might fill.

**Jeffrey Glassberg** [00:45:34] Well, sure. A life history: that's easy. But, I'm assuming that you mean not just of an individual, but maybe of just an overview of the whole of this thing. So let me let me say also, you're talking to someone who has views that are different than the vast majority of people here or say. Okay? So, I'm going to preface that with that.

**Jeffrey Glassberg** [00:46:03] But, in terms of the straightforward information, I'll say that monarchs are found throughout Central America, North and South America. They probably evolved in Central America or southern Mexico, and probably evolved with a plant called tropical milkweed, which is an asclepias currasavica.

**Jeffrey Glassberg** [00:46:38] And, but, monarchs move around a lot, and so because of that, they've colonized many places in the world. So, they originated, as I say, in Central America. But there's these populations all throughout North and South America. And of course, we'll get to the North American ones in a minute. But they've gone overseas. They've colonized the Canary Islands, the Hawaiian Islands, New Zealand. They are going everywhere.

**Jeffrey Glassberg** [00:47:17] So, one thing I'll say is there is no chance, no chance, monarchs are going extinct no matter what you've heard. That's one thing. There is no chance monarchs are going extinct.

**Jeffrey Glassberg** [00:47:30] So, but then the group of monarchs developed, evolved a behavior where so, so one thing to know about monarchs is, at least up to now, all life stages are sensitive to freezing. So, they can't survive a real strong, a strong frost, you know, a strong freeze, I should say. So, they can't.

**Jeffrey Glassberg** [00:48:06] So most of the butterflies, for example, that live over most of North America, most of them, are resident where they live. So where I am in New Jersey, here, for example, the vast, the largest percentage of butterflies, they spend the entire year here in some life stage or another. And so at least one of their life stages is able to survive freezing. So, some of them overwinter as eggs, and some overwinter as caterpillars, and some overwinter as a chrysalis or pupa, and some overwinter as adults, like mourning cloaks overwinter as adults.

**Jeffrey Glassberg** [00:48:58] But monarchs can't do that. So, they can't be, so they're not resident butterflies. But they evolved, as I say, with their caterpillars. So butterflies, most butterfly species again, or their caterpillars, will eat only a limited range of plants, and some butterfly species are extremely limited, so they might eat only one species of plant. So like Harris's checkerspot, so far as it's known, I think the caterpillars only eat flat top white asters. So, you know, northern metalmarks, the caterpillars only feed on roundleaf ragworts that are that are growing on limestone that are in partial shade.

**Jeffrey Glassberg** [00:49:54] So, many species of butterflies are limited. And monarchs are limited also, but not to one species, but pretty much to one genus - asclepius, milkweeds. So there are a lot of milkweed species in North America. And, but again, monarchs can't survive the winter. So there's this resource that goes. So monarchs evolved the behavior where they would fly up out of Mexico in the summer and expand into North America. And then this whole resource is now available - milkweeds, all through North America. And but they can't survive the winter there, here, and so ( any of their life stages), so in the fall, they evolved behavior where they fly back to Mexico.

**Jeffrey Glassberg** [00:50:59] So that, I don't think it's known exactly when that behavior evolved, but it's a while ago. And, it is the phenomenon, and I will say, so most of the monarchs that undergo this kind of behavior spend the winter in only a very few, very localized areas of Mexico - generally very high up, like 10,000 feet, in fir forests, a kind of, it's called the oyamel tree. It's kind of a fir.

**Jeffrey Glassberg** [00:51:45] And they spend the winter there in what used to be, you know, millions and millions and millions, umpteen millions and millions of monarchs. So there's so many, there are so many monarchs in these areas that they completely clothe the fir trees in orange. And you can see them from space and so forth. You know, I mean, it's orange in space when you have a satellite going over and take a picture.

**Jeffrey Glassberg** [00:52:15] And, it has been, I would say, one of the great natural spectacles of the planet. I'd been there a couple of times. I was there a couple of times in the '90s when they were good years. And it's just, it is amazing. And actually today the truth is just as amazing as the butterflies is to see, was to see, the thousands of overwhelmingly local Mexican people, you know, being wowed by all of this, and having a great time, and enjoying it and so forth. That was about just as good as seeing the monarchs themselves.

**Jeffrey Glassberg** [00:52:53] And so, it's like, you know, the migrations of the herd animals in Africa. You know, that's another amazing natural spectacle on this planet. And this was one, too.

**Jeffrey Glassberg** [00:53:08] So, it is the phenomenon of this mass migration of the monarchs from these Mexican overwintering sites back and forth that has taken a serious hit in the last, you know, 30 years. And, the numbers of monarchs that undergo this migration is seriously down, you know, from what it was. And so the migration isn't as incredibly impressive as it was and so forth.

**Jeffrey Glassberg** [00:53:46] So, I will say a couple of things about that, though. So, probably the lead cause of this, and this is well known. Well, so, it's well known that these monarch overwintering sites have suffered very serious degradation, for a couple of reasons. The main reason being that they've been heavily logged.

**Jeffrey Glassberg** [00:54:12] So, in Mexico, the ownership of land is very different than it is in the United States, mainly, where people here own their, most people, you know, or not most people, most land is owned by a person or, you know, or maybe it's a small group of people, or maybe it's, you know, a government entity or a corporation or, you know. Whereas, in Mexico, a lot of the land is owned, is community-owned by these ejidos, which is like a community. And so it's a very different ownership structure.

**Jeffrey Glassberg** [00:55:00] And that's the case with these overwintering sites, is that they were really owned by these ejidos, etc. And, the logging is one way they got money.

**Jeffrey Glassberg** [00:55:11] Now the government, you know, outlawed it and so forth. But again, the interaction with government in Mexico is very different than it is here. And the power of the federal government is ... it essentially has none in many areas of Mexico, to tell you the truth.

**Jeffrey Glassberg** [00:55:32] So, these areas have been degraded. Lots of the trees were cut down. So, the areas where the mines can be is smaller and the trees are less dense. This leads

to less buffering when it gets cold. You remember they're up at 10,000 feet and it does get cold. There's hailstorms in summer. So this is probably the main reason.

**Jeffrey Glassberg [00:55:58]** And then, you can throw in climate change, which is hurting the fir trees at 10,000 feet. It's getting too warm for them.

**Jeffrey Glassberg [00:56:09]** So the changes in the overwintering sites is probably the main reason for the degradation, for the decline of the monarchs.

**Jeffrey Glassberg [00:56:20]** But the truth of the matter is, the truth of the matter is, no one really, really knows. People have put out their hypotheses. I mean, it is known about this degradation of the overwintering sites. And it's hard to believe that that isn't a big factor. And I think most people, I think the great majority of people would say that.

**Jeffrey Glassberg [00:56:40]** But there are other things going on. And the two other things are: I'll start with the one that's less talked about, is pesticides, which is, the use of pesticides continues to increase and pesticides that are really toxic to butterflies - these neonicotinoids that are long-lasting pesticides that are used all over the place.

**Jeffrey Glassberg [00:57:09]** And monarchs migrate. So when they migrate and they go from flower to flower, you know, they get probably maybe exposed to a greater variety of things. And the chance that they're going to run into a place where it's treated with these pesticides that is going to kill them is perhaps greater.

**Jeffrey Glassberg [00:57:28]** So, I think this widespread use of these toxic pesticides, which, by the way, are almost all certainly toxic to human beings as well. People are just fools. They think all of this stuff has no effect on them. You know, somebody says, like they said, "Oh, DDT, that doesn't affect you, you know", whatever, all of this stuff. And, you know, you know, the fact that all of this stuff affects you. I mean, you know, if you look at, you know, male fertility. It's like half of what it was, you know, 50 years ago or 70 years ago or something like that. And it's almost certainly due to all of the horrible environmental crap that you're exposed to. Whatever.

**Jeffrey Glassberg [00:58:17]** So, that's the other thing that's affecting monarchs.

**Jeffrey Glassberg [00:58:21]** And then, the other thing is, is people point to is less milkweeds available for them. And there's just, then there's a couple of people, and really it is a very small number, that you know, have sounded this alarm that the reason that the monarchs are declining is because there's less milkweeds in the Midwest. And they say it's because farmers in the Midwest are now using Roundup-resistant corn so that they spray higher levels of Roundup and there's fewer, that results in fewer milkweeds on their farms and there's less milkweeds in the Midwest. And that's why monarchs are declining.

**Jeffrey Glassberg [00:59:23]** So, my own sense is I really doubt that that's the major factor there. I can't swear that it isn't. There's huge numbers, milkweeds haven't changed here in the Northeast. The egg load on milkweeds in the Midwest doesn't seem to have increased. You'd think if there were fewer milkweeds, that the ones that are left would have more eggs on them or something or whatever. I don't know. You know, doesn't seem to.

**Jeffrey Glassberg** [00:59:53] Well, look, I'm not telling you that for sure it has no effect. I mean, it certainly can't be good for monarchs if there's fewer milkweeds around, but I will address something about that also in a second.

**Jeffrey Glassberg** [01:00:03] And then, for a while, people got angry at the farmers (you know, the GMOs), the same way people get angry at the Mexicans for cutting down the trees.

**Jeffrey Glassberg** [01:00:11] And this is all misplaced, misplaced in my view, because I mean, if you believe that that was important, then the people in the U.S. should be paying millions of dollars to the ejido to do this and, you know, care of it because these people are dirt poor. They're trying to survive, you know, with their kids.

**Jeffrey Glassberg** [01:00:31] And, the same thing for the farmers. I don't know why people think it's the farmer's job to grow milkweed, to support monarchs that someone in New York wants is a thing, you know. I mean, if you think that, then then you ought to pay the farmers to grow the milkweeds. That's my thinking on that one.

**Jeffrey Glassberg** [01:00:50] I mean, I'm for having the milkweed.

**Jeffrey Glassberg** [01:00:53] And the other thing to keep in mind here is, is this, and I want to first again say that, as I said, the overwintering sites, it's one of the, to me, one of the great natural spectacles in the world. So, I am all for having these fantastic monarch migrations and everything.

**Jeffrey Glassberg** [01:01:13] But, I will say, a lot of the monarch stuff I think is pretty recent. I mean, you know, people, you know, okay, so I'll tell you, it's like people go on about this.

**Jeffrey Glassberg** [01:01:22] Monarchs, also, by the way, and we didn't talk about California. There's monarchs that overwinter on the California coast. It's a very, it's a pretty small percentage of the total. But, I think it is very extremely probable that that is a very recent phenomenon. Essentially, all of them - monarchs that overwinter on the California coast - overwinter in eucalyptus trees, which are non-native trees introduced from Australia.

**Jeffrey Glassberg** [01:01:53] And so, I think it's quite likely that before the eucalyptus trees were there, there were no large overwintering populations of monarchs in California. Whatever. So, they weren't there before. They are now. I'm not saying you won't want to keep them now, but okay. And then they're there on this non-native eucalyptus.

**Jeffrey Glassberg** [01:02:12] And, the other thing, it's the same kind of idea in a way, about the monarchs in the Midwest is that there's lots and lots of species of milkweeds in the United States. Many, many species. I love milkweeds. They're great plants. All of them. I mean, seriously. I mean, I'm being serious. I love milkweeds. Nothing to do with monarchs. I like the milkweeds.

**Jeffrey Glassberg** [01:02:31] So, but the main milkweed that monarchs use in eastern North America is common milkweed, *Asclepius syriaca*. And *Asclepius syriaca* is a very weedy plant. By that I mean, it thrives, it does best, in disturbed habitats. And the best information I've seen, that I can find, people have published about this and, you know, (and this is not my field of expertise if I even have a field of expertise, but this is not it), but the best information I can see is that people say that, prior to human beings... That's the wrong thing. Prior to Europeans' converting large areas of the Midwestern prairies to agriculture, prior to that, there was little,

if any *Asclepius syriaca*, a common milkweed in these prairies. And that's the main caterpillar food plant now for monarchs.

**Jeffrey Glassberg [01:03:52]** There are other milkweeds. There certainly are other prairie milkweeds, but I don't think their density is any, is, you know, is all that great. So, I don't have any doubt there were monarchs that were there, you know, before Europeans did that. But, I do suspect that there weren't the kind of huge, huge millions that we've got, you know, that we had, what, 30 years ago, before that. I think that the Europeans, by converting it to agriculture, greatly increased the number of monarchs.

**Jeffrey Glassberg [01:04:28]** I think it just raises questions. I mean, that doesn't mean, so, I think that's what happened. You know, that doesn't, how you end up feeling about it, whether you feel like, well, even though we created the situation, we want to perpetuate it, you know, because it's spectacular or whatever.

**Jeffrey Glassberg [01:04:45]** But, the world is a complicated place, that's all. For most people, it's either black or white. That's the only thing that they get. You know, monarchs are going out and we have to save them and we have to plant milkweeds or whatever, you know. And the real world is more complicated.

**Jeffrey Glassberg [01:05:03]** And so, so the other thing to finish up on the monarchs that is sort of interesting: so it was thought, so for a long time people didn't know where the monarchs went. I mean, Americans didn't know where the monarchs went. There were people that lived in these Mexican towns that knew the monarchs came back there every year. Of course, I don't think they knew where they were during the summer.

**Jeffrey Glassberg [01:05:30]** And then, people, you know, tracked them and found these overwintering sites. And then it was thought for a long time that the monarchs ... so monarchs make it all the way, let's say, to Canada. There are monarchs in Canada in the summer. So people would think, "Okay, well, here's the way it works. The monarch in Canada is born in Canada. And then it flies all the way down thousands of miles to these, to the mountains in central Mexico, to these oyamel trees. And then it spends the winter there. So it gets there, let's say December or November, and then it spends the winter there."

**Jeffrey Glassberg [01:06:28]** "And then in March, it starts flying north. And it starts flying north, and then when it gets to some milkweeds, it lays some eggs, and not long afterwards it dies. And then its offspring fly further north, and maybe it's even the next generation that comes and goes up to Canada." Right?

**Jeffrey Glassberg [01:06:51]** So that most people thought that an individual didn't do the migration the way a bird, many birds .... it's the same individual that flies out and then goes back north. Right? People thought that was not what happened with these monarchs, that it was like a generational thing.

**Jeffrey Glassberg [01:07:11]** And apparently, I mean, that's probably still true largely.

**Jeffrey Glassberg [01:07:20]** However, it turns out there are individual monarchs who make it all the way back. So, people have looked at isotopes and so forth that are in the butterfly and they can get a handle on where they were born, by, you know, seeing the isotope mix in them and kind of signature for different areas.

**Jeffrey Glassberg** [01:07:47] And so, apparently, some that are, you know, born in the northern U.S. and even southern Canada, some individuals do make it back the whole way.

**Jeffrey Glassberg** [01:07:59] So, I'm just saying that's another wrinkle, although probably for most of them, it still is a multiple generation.

**David Todd** [01:08:11] That's fascinating. So some part of the population may take four or five generations, but then there are some that may be just one generation to make the trip from Canada to Mexico and back again?

**Jeffrey Glassberg** [01:08:23] Yeah, I don't think it's four or five, you know, maybe two or three. Okay. But not maybe not four or five, but two or three, maybe.

**Jeffrey Glassberg** [01:08:36] So, but, but yes, but then a smaller percentage, and I don't think anyone knows exactly what, but a small but not completely trivial percentage probably makes it back all the way.

**Jeffrey Glassberg** [01:08:49] So, I mean, you've learned a great deal about butterflies, and have passion and knowledge about them. I think it's interesting that you've worked to share this interest of yours through creating a, you know, multinational group, the North American Butterfly Association. I was hoping you could tell us a little bit about the origins of that group.

**Jeffrey Glassberg** [01:09:12] Sure. Well, you know it, as I say, so we got back into butterflies. And Bob and I did, and we were doing that, and I was collecting butterflies. And then I was in, I was a graduate student. After I went to Tufts and then taught, as I say, a little bit of high school.

**Jeffrey Glassberg** [01:09:37] And then, I went back and then I went to Rice as a graduate student in Houston. And I was doing hairstreaks there back in the lab where I was doing I mean, that's not what I was doing in lab. I was doing molecular genetics. But my thesis advisor was kind enough to allow me to keep my butterfly collection in the lab, for example, and stuff.

**Jeffrey Glassberg** [01:10:00] And then, from there I went to Stanford Medical School. And then from there, my wife and I went back, not back, certainly not in her case. Went to Rockefeller University in Manhattan, New York.

**Jeffrey Glassberg** [01:10:21] And so, when we got to Manhattan, I started looking at birds again in Central Park, and so forth. And then I started going to Linnean Society meetings again. Well, remember I told you they met, and at that time, and I say, maybe they still do. They met still at the Museum of Natural History. And I would go there.

**Jeffrey Glassberg** [01:10:55] And then, so, at one of these meetings, I met, one of the guys that went to them is a guy named Guy Tudor, and Guy is, was one of the preeminent bird artists illustrators in the world. And many of the, many of the South American bird guides and so forth, he did the illustrations for.

**Jeffrey Glassberg** [01:11:30] And so, we would get to talking and stuff. And I was interested in his art. I like things like that. And he was interested in my knowledge about butterflies. And so we got to talking. We shared a cab and stuff. And then, so, we ended up starting this New York City Butterfly Club. So that was 1984, I guess, or '3. So we met. Yeah, and that was it. And I'm trying to think: we started the club in '84. Or we may have started the club, actually, we

must have a little before that, I think. I think it was a little before that. I remember the date is the first...

**Jeffrey Glassberg** [01:12:28] One of the things the North American Butterfly Association does is we run the biggest monarch butterfly monitoring program in the world, actually, which is the North American Butterfly Association butterfly counts. And I run, still, a local one in Westchester, New York, because I used to live in Westchester. So after, I was at Rockefeller, but then I started a company and I moved to Westchester, New York.

**Jeffrey Glassberg** [01:13:04] And so, the first one that we ran there was 1984. And then, Guy and his wife, Michelle LeMarchont, who was the, she was the operations manager probably for one of the biggest art dealers in the world, the Wildensteins, who, if you look them up, were quite famous. The wife was quite notorious. And so we used to go there and she'd bring out Monets and Magrittes and stuff and that never would normally be seen. So, that was great.

**Jeffrey Glassberg** [01:13:45] Anyway, so the first year, it was just the four of us. But anyway, so, so we started this New York City Butterfly Club, and then about a year into it or so, someone in the group found that a company called Minolta made these pocket binoculars that focused like to six feet, and you could use for butterflies.

**Jeffrey Glassberg** [01:14:16] So, that was it. And we soon realized that, you know, basically I could identify every single butterfly using these binoculars. And there was absolutely no need to have a net. So that was the transition in '84.

**Jeffrey Glassberg** [01:14:37] And, you know, so we kept doing this and through the eighties. And then, in the early nineties, I guess, they were going to write a new book, a new update, you know, I told you Klotz had written this field guide, but it wasn't a field guide, but a guide to butterflies in '51. And by the way, that's not to cast any aspersions on Klotz, who was competent and a good guy. It's just that that's the way it was.

**Jeffrey Glassberg** [01:15:22] But then, they were going to do a new series, and a new book, and it was by a guy named Paul Appel, who was going to do it. And so I talked to Opler there and I said, "Listen, you need to do the illustrations of live butterflies, you know, not the illustrations of dead butterflies." And he said "No, it was already that way. Couldn't do it. Couldn't do it."

**Jeffrey Glassberg** [01:15:44] So, that's, you know, again, we tried to get other people to do it. No one would. So basically decided to do it myself. And that's been the true.

**Jeffrey Glassberg** [01:15:58] Well, that's true how I did the DNA fingerprinting stuff also. I had no interest in doing that either, actually. It's just that I couldn't get anybody else to do it.

**Jeffrey Glassberg** [01:16:09] And so, nobody else was doing it. So I basically, by default, had to write, our own guide, you know, to butterflies and so forth.

**Jeffrey Glassberg** [01:16:23] And, between that and, you know, the realization that we needed to get people into butterflies in a different way and so forth. There was no there was no home for butterflyers. It was all collectors.

**Jeffrey Glassberg** [01:16:41] So, basically, those two things together, you know, led me to say, "Okay, look, we're going to start a, you know, a place where, that's for people who are

interested in butterflies, the way people are interested in birds and with binoculars, and so forth. And so that's what I did.

**Jeffrey Glassberg** [01:17:02] Well, I was actually in law school at the time. I was at Columbia Law School. So I started, I was in Columbia Law School in '90 to '93. I actually do have a law degree and I am a member of the New York bar. But I've never practiced law. But it was while I was in law school, so I had a lot of time, because I was in law school.

**David Todd** [01:17:33] That's unusual. Most law students don't have a lot of extra time.

**Jeffrey Glassberg** [01:17:38] But, the difference was I had realized, again, on my first day of law school that being a lawyer was not for me. I knew immediately. It just, this was not for me. But I started it, so I finished it. But I didn't take it, I wasn't worried about it or anything. So, I mean, I graduated in the top quarter of the class and I took the bar, passed the bar exam.

**Jeffrey Glassberg** [01:18:01] And so, but I wasn't worried about it. I mean, I wasn't like, you know, this is going to be, you know, I have to take it really seriously and excel at it or something like that. So it was, it was, that's why I say I had plenty of time. I didn't have to, you know, so I ended up, so that's when I wrote this, my first field guide was when I was in law school, and that's when we founded, it was my third year of law school that I started the ...

**Jeffrey Glassberg** [01:18:32] And, it was, law school was of some help because it helped me, I mean, I was able to incorporate and stuff like that.

**Jeffrey Glassberg** [01:18:38] And, the other way it was of help was because I was in law school, I was able to get cheap software and, you know, you got student rates for things. And so there was a company called ... What is it now? Gosh, it's the predecessor for Adobe. It was called Pagemaker, Aldus Pagemaker. So it was a program to to lay out publications. And so I was able to get that very inexpensively.

**Jeffrey Glassberg** [01:19:13] So, I was able to create a magazine, you know, that came along with your membership in the North American Butterfly Association and so forth.

**Jeffrey Glassberg** [01:19:23] So that's, so, law school was of use in those two different ways there. And like I say, I was able to, I was able to figure out how to incorporate and do that kind of stuff. And I was able to get cheap software.

**David Todd** [01:19:41] Well, so that that explains some of the origins of of the Association and of the guidebooks. And I guess the, maybe the follow-up, question is there are many ideas and projects that get born, but they don't grow. You know, they get put on a shelf, they get put on the back burner, whatever.

**David Todd** [01:20:01] Somehow, NABA has grown by leaps and bounds, as have these guidebooks have been sold. What do you attribute the growth of the Association, the guides and butterflying in general to?

**Jeffrey Glassberg** [01:20:16] Well, I mean, I think, like I say, I think, you know, the time had come for this. And people I mean, well, you know, I would look at it the opposite way. You know, I apologize for that. I mean, that is I would say it's grown. I think it will grow a lot more now than it has in the past. I think it's grown a lot less than I then I expected. I'm an incurable

optimist. I'm a realist. I see the way things are, I think. But somehow, down deep, in a way that I don't understand, I believe things are going to work out great, even when I know better.

**Jeffrey Glassberg** [01:21:00] And so, so, I think each time this is going to work out. And I, I certainly was more optimistic when we started that we'd be further along than we are now, actually. But I still think it'll happen.

**Jeffrey Glassberg** [01:21:16] I mean, the bird thing took a long a long time. I mean, as I say, birding, you know, started in the 1890s. And the first guidebook was, you know, 19, in the twenties and '31. So it's taken a long time. And, but I think we're poised to do even better now.

**Jeffrey Glassberg** [01:21:37] But, you know, there's a lot of people interested in this. You know, it's a different way to do things. There's a lot of interest in the natural world. So, you know, and I think there's very few people that want to run around with nets or something like that. There certainly are some that enjoy that.

**Jeffrey Glassberg** [01:22:00] So, I think, you know, as I say, and my main interest is conserving butterflies. And I think, and I will say also this, the way I think about it has changed quite a bit since we started this. And so when we, when I started this, my thought was this. My thought was, "Okay, we need to create a constituency that cares about butterflies." And so, and, you know, we're not a big organization.

**Jeffrey Glassberg** [01:22:32] So, because of that, you know, there's big organizations that buy land there. You know, there's the Nature Conservancy that, you know, was doing a fantastic job and had huge amounts of land. And of course, there's all these land trusts and there's all the federal government land and everything. And, you know, so. So would be stupid to do that.

**Jeffrey Glassberg** [01:22:52] And, you know, we're going to focus on getting, you know, creating this constituency that cares about butterflies and that was the idea.

**Jeffrey Glassberg** [01:23:00] But, what I've come to realize over the last 30 years is actually, although you've got all these groups that save land, they're not very interested in butterflies. And time and time again, I've seen where every kind of group, whether it be federal government or state government or county government or non-profit like the Nature Conservancy, gets a piece of land, has a piece of land where there's some rare butterfly on it, some butterfly that I really care about, and they basically mismanage, or most often, don't manage the land. And the butterfly is soon, is gone.

**Jeffrey Glassberg** [01:23:50] And I mean, I can give it case after case after case of this, you know I mean Miami blues, Arogos skippers, you know, Northern metalmarks ... with all these different groups.

**Jeffrey Glassberg** [01:24:01] So, what I've come to realize is, you know, you've got to do it yourself. I mean, you know, I mean, it's great that they've gotten this land, but, you know, I want to own that now, the land, and manage it, you know, make sure that we, you know, we don't have competing interests.

**Jeffrey Glassberg** [01:24:19] Because the problem with all these other groups, as I say, in some cases, they're huge bureaucracies and they've got competing interests. You know, they have other, they're not only caring about this butterfly. They care about other things that actually, interest conflicts with that of the butterfly or whatever.

**Jeffrey Glassberg** [01:24:37] So, so that being said, I think now we need to also, among other things, focus more on that and get land, and if we want to save some of these butterflies that are in bad shape. And so that's what we're trying to do, among other things.

**Jeffrey Glassberg** [01:24:58] We still, I still believe in, you know, trying to raise people's consciousness and get a bigger, larger constituency, and teach kids., And, you know, we do that in Texas and we've got some operations in Florida now going and so forth.

**Jeffrey Glassberg** [01:25:11] So, but I do think owning land is more, you know, more important even for us than I thought 30 years ago.

**David Todd** [01:25:23] You know, you mentioned trying to provide a home, a kind of a place for a constituency for butterflies, or butterfly fans and aficionados. I was wondering if some of these people edge over from being just enthusiasts and fans to actually being citizen scientists, and whether you have a view about the role of laypeople in studying butterflies and providing meaningful evidence about their trends and their status.

**Jeffrey Glassberg** [01:25:51] Well, you know, I think, I mean, I don't know. You know, we have a lot of people that participate in these counts, thousands of people. And the information from the counts is useful. Scientists publish papers. I've been on a bunch of them myself - author of a bunch of papers, co-author. So, you know, that's great.

**Jeffrey Glassberg** [01:26:20] I mean, they're not really acting like scientists. I mean, it's kind of a funny term. They're not, they're providing information that can be used by scientists, you know. And so, I do think that's useful, that particular one. I'm always, you know, but I would say to people, most people don't do this. Butterflies are amazingly unknown - that is, the ecology, and behavior, and what limits populations, what are the factors affecting them - amazingly little is known about any of it. Almost nothing.

**Jeffrey Glassberg** [01:27:11] You name any butterfly, almost any butterfly, nobody could tell you, "Well, what are the things that limit that population of butterfly?" No one could normally even tell you that. You've been asked, "What importance is it what eye color the butterfly is?" Nobody, nobody can, nobody can give you the answer to that question. Even though it's clear that there is importance to it. But nobody can actually know why. No one even knows what makes the eye color different in different ones.

**Jeffrey Glassberg** [01:27:41] It's just amazing how little is known about butterflies.

**Jeffrey Glassberg** [01:27:45] So anyhow, the interesting thing about the behavioral stuff is it's stuff If you were a human being with a analytical mind as an example, you could actually provide useful information about various behaviors and so forth without ... I mean, for most scientific endeavors, you need expensive equipment or something. You know, you need to, you need a lab and get stuff to do stuff. But, I think there's actually a lot that an intelligent, analytical person could learn studying butterflies in the wild about their behavior and so forth that they could, there's nothing stopping them except, you know, I mean, you have to be able to, you know, think. You have to be able to think like a scientist and be analytical.

**Jeffrey Glassberg** [01:28:46] So, that doesn't really answer your question, but I just throw that in there. I mean, certainly all the people that participate in observing the world and putting in these data, these are all useful data that, you know, help us get, learn about where

things are, where things have been and where things are going. So you know that's okay. I mean, that's great.

**Jeffrey Glassberg** [01:29:09] I wouldn't call those people scientists myself. I know there's that term, "citizen science". But they're providing information that's useful. They're providing scientifically valuable information. Whatever.

**David Todd** [01:29:23] Yeah, that's a good distinction. I mean, they're part of the pipeline, the food chain, for evidence and information, but maybe not actually doing the scientific analysis themselves.

**Jeffrey Glassberg** [01:29:33] And that's what I'm saying is, is that I think that, you know, smart, analytical people can actually do actual science here, as opposed to, you know, you can't do chemistry. There's a lot of things you can't do. But studying butterfly behavior - I don't think you need to have a lot of money. You just need to have a, you know, be intelligent, be able to think analytically and design things. I think a person can do it, and actually be a scientist. That's what I'm saying.

**David Todd** [01:30:06] Got you.

**David Todd** [01:30:08] So, you put together this group, this Association, that's provided a home for this constituency of folks that care about butterflies. I think you've also made a good mark by actually setting aside some land where you can manage the habitat and the vegetation so that butterflies have a home themselves. And so I was hoping you could talk about the purchase back in, I think it's 2002, of this tract near Mission, Texas...

**Jeffrey Glassberg** [01:30:36] Yeah. Yeah.

**David Todd** [01:30:37] For the National Butterfly Center.

**Jeffrey Glassberg** [01:30:39] So, the way that worked was this. So in the nineties, middle nineties, late nineties maybe, maybe it was '98, so I had a little tour company where I'd take people looking for butterflies and I've had it since the early nineties. And so, on one of these, I think maybe it was '98, I was leading a group down to the Rio Grande Valley of Texas. And we came across an old church mission that had been used as a, what's the right word, that had been used by the Oblate fathers. I don't know what the right term, the Oblate fathers. What is it? I don't know. I'm blanking. I don't know enough about the organization of the Catholic Church.

**Jeffrey Glassberg** [01:32:01] But, the Oblate Fathers, they had this retreat, a retreat, I think. I think that's what it was. I think that's what it was. And so there was this really beautiful building. And I love, well, I mean, I love beautiful things. That's one reason I love butterflies. I'm a sucker for beautiful things.

**Jeffrey Glassberg** [01:32:30] So, there was this beautiful old building that was in a state of disrepair. And there was no fence around the property or anything, you know, and no sign saying "no trespassing" or anything. And so, we went over there. You know, we started looking around and there were butterflies there. And we're very close to the border. And the building was beautiful - large grounds. I don't remember, you know, how many acres. Not huge.

**Jeffrey Glassberg** [01:33:06] And then, this thought occurred to me. I said, this could be a butterfly park. So rather than just have the thought, I act on it. And this has been my problem a number of times, but God, I acted on it. So I took this little group and we, I discovered we were in the City of Mission. So I took the group, and we went into the City of Mission and we went to the Chamber of Commerce. I don't know why. I'm not sure why we went into the Chamber of Commerce, but that's where we went.

**Jeffrey Glassberg** [01:33:48] And, we went in the door. And there's a woman sitting at a desk. She was like a secretary. And her name was, and still is, Viola Espinosa. And so I said, "So tell me, Viola. Well, this is our plan. It's beautiful. We like it." So I figured, you know, she's going to laugh at us, you know, I mean, because that's probably what most people would do. But she didn't.

[01:34:18] "Oh, this is very interesting. You know, I'm interested in this sort of thing." So, we try to, we pursue it.

**Jeffrey Glassberg** [01:34:26] And, she gets, you know, in touch with the church and everything. And it turns out they had (I won't remember the details exactly) but it was like they had been about to lease it to some medical, some kind of medically related operation, and that had just fallen through. And they were trying to decide what to do and blah, blah, blah.

**Jeffrey Glassberg** [01:34:56] Anyway, the end of the day, it didn't work. There was, for whatever the reason was, the church wasn't going down this path and so forth.

**Jeffrey Glassberg** [01:35:09] Years later, the entire, and it's probably lucky because to have renovated that building would have cost us a fortune. I mean, it was beautiful, but it was in a very bad state, and years later, it burned down completely, years later, years later. Anyhow, so it didn't work out. All right.

**Jeffrey Glassberg** [01:35:35] But, then some time went by. And so, this is a little circuitous, as you've probably noticed. The Texas Parks and Wildlife decided they were going to start a project called the World Birding Center. I don't know if you're familiar with that. You are. Okay. So the way they were supposed to do it, the way they set it up was, so what they said was, "All right, we're going to give 20 million dollars. We're going to put in 20 million dollars to build this (and publicize) a world birding center.

**Jeffrey Glassberg** [01:36:20] And, here we come. We come to the towns in the Rio Grande Valley. And we ask them all to compete: where, what's the best place to put the World Birding Center? And so the towns have to, the cities have to give them like, okay, "Here's why you should put it in Brownsville, here's why you should put in a Mission." And "We'll put it in, we'll donate this land, or we've got this wonderful preserve here, and we'll also put in this amount of money", and whatever, you know.

**Jeffrey Glassberg** [01:36:52] So, this thing. Okay, so they put in this competition, all the cities put in their proposals. And then one of the state representatives who is from Mission, Texas somehow gets them, passes a law saying, "Okay, the World Birding Center is going to be in Mission."

**Jeffrey Glassberg** [01:37:26] And, oh, but, I love that. I apologize. That is all true. But I left out an important part here, which is that So they had they set this thing all up, like I said. And so they were all competing against each other and Mission's proposal was going to be ... There

was a developer, Bentsen Palm Development that had acreage, actually extensive acreage, all over the place, but they were willing to donate land just outside, I mean, adjacent to Bentsen Rio Grande Valley State Park.

**Jeffrey Glassberg** [01:38:08] I don't know, I'm sure you're familiar with that.

**Jeffrey Glassberg** [01:38:11] So they had, he owned land, they owned land adjacent to that, and they were going to donate acreage, that acreage adjacent to it as part of Mission's proposal, and that would become the World Birding Center's, you know, headquarters.

**Jeffrey Glassberg** [01:38:31] So, so it turns out the city knew about this and Viola Espinosa by this time had become CEO of the Chamber of Commerce. And so, she told the developer that there was this group that was interested in starting a butterfly center and maybe that would also fit into their, you know, mix and stuff.

**Jeffrey Glassberg** [01:38:58] So, one of the guys involved with it, his name was Scott Calhoun. So they were interested. So they were interested. So they called me up. She calls me up and says, "Well, they're interested in that." So I flew down the next day from New Jersey. I flew down there the next day. And I took Scott Calhoun out actually to Penitas. I don't know if you know Penitas. It's a town just west, a few miles west and along railroad tracks where there was huge amounts of casita, which is this mistflower, that butterflies love. Huge amounts of it blooming. And that day, which was probably like in November, but there were butterflies everywhere, huge numbers of butterflies.

**Jeffrey Glassberg** [01:39:51] So, Scott Calhoun was impressed. And we entered into negotiations for the butterfly center.

**Jeffrey Glassberg** [01:40:01] But then, as I say to you, the legislature passed a law saying the world birding center was going to be there.

**Jeffrey Glassberg** [01:40:14] And so then, all political hell broke out in the Valley and all the other towns were understandably irate. So they put all this political pressure on.

**Jeffrey Glassberg** [01:40:30] And so, unlike in the story of Solomon (I don't know if you remember Solomon with the baby, with the two mothers. Right, exactly. So I'm going to cut it in half. And the mom screams, No, don't do that. The real mom says, "Oh give it to her." Right? And you know that she's the real mom.

**Jeffrey Glassberg** [01:40:48] Well, of course, the cities didn't do that. So, they cut it. They cut it. So, what they decided to do was cut it into like eight packages. They cut up the baby.

**Jeffrey Glassberg** [01:41:02] And so, the headquarters was in Mission, but a bunch of, each of the towns, and I don't remember all of them - Edinburg and Weslaco and Brownsville - each of them, you know, got a satellite facility.

**Jeffrey Glassberg** [01:41:23] So, rather than put 20 million into the one in Mission, they only put, I think it was 8 million or something because they put the rest into the satellites. So basically the bottom line is there is the whole thing at the end of the day, it never worked. It's now all out of business. I mean, it wasn't there pretty much.

**Jeffrey Glassberg** [01:41:45] So, but it led to the butterflies. All of this led to the butterfly center. So, because the developers said, "Okay, look, if I can raise half a million dollars, then they'll give us the land."

**Jeffrey Glassberg** [01:42:09] And, at first they only wanted to give us, they wanted to only give us the land south of the canal. So again, I don't know. Are you familiar with the butterfly center at all?

**Jeffrey Glassberg** [01:42:21] So, there's, you know, there's a canal that runs through it there. And south of the canal is in the Rio Grande floodplain. And so, you can't really build anything south of the canal.

**Jeffrey Glassberg** [01:42:41] So, initially they only wanted to give us south of the canal. But I said, "No, that's not going to work because, well, we can't put anything."

**Jeffrey Glassberg** [01:42:49] So, then they threw in eight acres north of the canal. So, the original thing was like 78 acres or something, or 80 acres. So, if I could raise half a million dollars, they would give us, donate these 80 acres.

**Jeffrey Glassberg** [01:43:09] So, I set about trying to raise money. And, of course, I had no experience in my life. Well, that's not, I mean, I did, I started a company. But that one was I made one, literally made one phone call. I made one phone call, and got 12 million dollars. And that was my one experience.

**Jeffrey Glassberg** [01:43:35] So, but this one, I had no idea. I had no idea what to do.

**Jeffrey Glassberg** [01:43:40] So, it turned out that, so we try to raise the money. We put in a grant to National Fish and Wildlife Foundation. And we didn't get the grant.

**Jeffrey Glassberg** [01:43:56] And, but, one of the women, one of the women that kind of worked for them - she was based at that time out of Houston, I think, maybe. I think she was based out of Houston at the time. Her name is Carolyn Appleton. And so she was interested in the project.

**Jeffrey Glassberg** [01:44:23] So, there was a dinner for a group called the Valley Land Fund, which I think now is, I don't know if it's still going. Anyway, so they used to hold a, they used to have a photo contest, where landowners would team up with a photographer and the photographer would shoot all of this wildlife on the land. And, you know, so they had this, and they would print out a nice book of these photos.

**Jeffrey Glassberg** [01:44:59] And so, they had the award dinner in Brownsville, or maybe it was in Harlingen, I'm not sure, one year. And Carolyn invited me to come. So they had a, I guess, National Fish and Wildlife had a table. And so she invited me to come. And she sat me next to a woman named Mary Yturria, who, by the way, who just died in December. And she sits me next to Mary Yturria.

**Jeffrey Glassberg** [01:45:30] So, I'm talking to Mary. And so, my wife was a scientist also. She was, my wife was director of vaccine development and business development for the largest vaccine manufacturer in the United States. But she started out at a small college in Alabama. My wife was actually military, from a military family. She was born in Selma, Alabama. And so she went there.

**Jeffrey Glassberg** [01:46:23] And, in the year 2000, she was invited to give the commencement address at this college where she went, because she had been very successful. And, so, as we're going down there, it's a longer story than this, funnier really. But anyway, as we're going down there, we stop. We pull off the road, way off the road, in a swamp, and look for butterflies, because that's what I do.

**Jeffrey Glassberg** [01:47:04] And, she finds this butterfly. And said, "Look, this is Mitchell's satyr." And I said, "No, because Mitchell's satyr is a federally endangered butterfly, that the closest colony known was, I forget how many thousand miles away, in North Carolina. It's mainly an upper Midwestern butterfly, not known anywhere near here. And there's another butterfly that looks just like it called Georgia satyr.

**Jeffrey Glassberg** [01:47:39] "It's a Mitchell's satyr", she says. "It's a Mitchell's satyr." We look. I take pictures. And of course, she's right. And it's a Mitchell's satyr.

**Jeffrey Glassberg** [01:47:45] So, it turns out that in this area of Alabama, what is now known, probably the largest colony of Mitchell's satyrs in the world. And, it turns out when we look into it that the land on which it's found had been owned by her great-great-great grandfather. Amazing.

**Jeffrey Glassberg** [01:48:08] So, here's this woman born in Selma, Alabama, whose family has roots there and owns the thing. She's down there with a guy from Brooklyn who is president of the American Butterfly Association and finds it.

**Jeffrey Glassberg** [01:48:18] So, I'm telling this story. I'm telling this story to Mary Yturria. And Mary stops me when I get to the point about I'm saying she's giving the commencement address at this, where she went to college, this small, tiny Baptist women's college in Alabama. And Mary says, "Well, what was the name of it?" I said, "No, it's a tiny." I say, "Well, it's Judson." And she said, "That's where my mother went to school."

**Jeffrey Glassberg** [01:48:52] So. Exactly!

**Jeffrey Glassberg** [01:48:56] And Mary loved butterflies. Mary genuinely loved butterflies.

**Jeffrey Glassberg** [01:49:03] So, like the next day. So we got to talking, so I said to Mary, "I'm going to I'm going to show you, I'll show you, you know, some butterflies, you know."

**Jeffrey Glassberg** [01:49:17] So the next day, Mary comes with me. We go over to Santa Ana National Wildlife Refuge. And at that time, Santa Ana had a butterfly garden that had been created by a guy named Mike Quinn and his at that time wife, Mary Klym. It's not there anymore. Anyway, so there's a lot of butterflies around.

**Jeffrey Glassberg** [01:49:43] And while we're there, I don't know what the number was, but, you know, more than five, but less than ten, probably, somewhere in there, people come up to me. And say, "Are you, Jeff Glassberg?" You know, will you sign my book, you know, kind of thing?

**Jeffrey Glassberg** [01:50:07] And so, and the only reason I mention this is because this is what really impressed Mary. And so Mary said, "Well, this is, you know, this is real." And I didn't know any of these people, you know, at all.

**Jeffrey Glassberg** [01:50:26] So, so, anyway, Mary put in a good word with a friend, which is Audrey Beck Jones, or maybe it's Jones Beck. I'm not sure which way it goes. I'm not sure if she was just on the board or if she was the head of the Houston Endowment, but it was her family that started the Houston Endowment.

**Jeffrey Glassberg** [01:50:53] So, Mary, put in a good word.

**Jeffrey Glassberg** [01:50:56] Now, the Houston Endowment only pretty much funds things in the Houston area. But in 2000, they had a broader view. And so Mary put in a good word. We applied for a grant. We got \$150,000 from the Houston Endowment. So that was the first major grant we got.

**Jeffrey Glassberg** [01:51:17] And, with that, with that, that kind of opened the door to the Meadows Foundation and the Brown Foundation because, you know, somebody's already validated it as a kind of a real thing. So they gave us money also.

**Jeffrey Glassberg** [01:51:33] And by 2002, I was able to raise half a million dollars. And so, so we got the land. And what we did with the land: it was an empty onion field. It was literally, nothing there. I mean, that's not true. There were onions there. And, but, like, just about no butterflies, you know, because it was an onion field.

**Jeffrey Glassberg** [01:52:07] And so, then, you know, we've taken to, you know, well, first, we've gotten more acreage. So, we now of 100 acres there. We got more acreage.

**Jeffrey Glassberg** [01:52:17] But, you know, we've started, from the very beginning, designing gardens, and planting all native plants, Rio Grande Valley native plants, and so forth. And now, there are, have been seen there more than 240 kinds of butterflies. And it is the best place in the United States to see, you know, large numbers of butterflies, both individuals. And I mean, some days, I mean, like on a peak day, there, I'll literally see 200,000 butterflies of 100 species in one day. So, I think we've done a pretty good job down there.

**David Todd** [01:53:02] Well, that's really striking.

**David Todd** [01:53:05] Can you just sort of give us a little brief comment about why Mission, or maybe the Rio Grande Valley, or Texas in general, is a important funnel for monarch migrations or for the staging of their generations?

**Jeffrey Glassberg** [01:53:25] Okay, I can do that. That has nothing to do with why we put the butterfly center there, though. But I'm happy to do that also. But the butterfly center and the Rio Grande Valley, I mean, it's important to monarchs because that is where almost all of, almost, well, certainly almost all of the butterflies, monarchs of eastern North America come through south Texas.

**Jeffrey Glassberg** [01:53:52] I would say a majority of, the greater number of monarchs actually fly through somewhat west, closer to like Eagle Pass, and so forth, is where the biggest numbers go. But there are, and also it varies year to year depending on the wind patterns and stuff. There were some years when many, many, many, many thousands of monarchs fly through the butterfly center. So it just varies from year to year. But as I say, for the whole country, you just look at the geography and you can easily see if you're going to get

to central Mexico from, you know, from Iowa or from New York, you're going through Texas. So that's pretty much that's pretty much it.

**Jeffrey Glassberg** [01:54:47] So, and the same idea, coming north, you're coming north, you're going through Texas, you're crossing the Rio Grande Valley. And so the state of the, and by the way, one of the things in terms of the decline in monarchs I mentioned, is climate change and drought. The last number of years have been many years of drought. And it is thought that that has had a bad, bad effect on monarchs as well.

**Jeffrey Glassberg** [01:55:23] So, that's why I'm saying it's hard to tease out, you know, exactly how much effect each of these things has. So anyway, so that's monarchs in Texas.

**Jeffrey Glassberg** [01:55:32] But, you know, the Rio Grande Valley, it's in Texas. But, you know, for all intents and purposes, it's part of Mexico. So it certainly in terms of, you know, fauna and flora, you know, it's where the tropics meet, you know, the temperate zone. And so you get, it's the kind of northern edge of all the tropical butterflies. There's lots and lots of butterflies that are found in the Rio Grande Valley that are not normally found anywhere north of the Rio Grande Valley. There's lots of them.

**Jeffrey Glassberg** [01:56:08] And, the other way: there's a bunch of butterflies that are sort of temperate, that you can find in the Valley, that's the kind of the southern edge of where they are.

**Jeffrey Glassberg** [01:56:19] So, it's a fantastic place for butterflies. I mean, there's only 600 resident species in North America, maybe 700 that have ever occurred because of strays. And you know, you can see 300 species in the Valley. And, like I say, we've already had 240 species. So there's no place in the U.S. we can do that.

**Jeffrey Glassberg** [01:56:45] And then, you know, at the butterfly center, in the Valley, you can see butterflies all year long. Now, there are times that are better than others, but you can go any day of the year. And assuming the weather is good, I mean, you know, and that varies, you know, but assuming, you know, it isn't a day that it's raining and cloudy and cool. Even if you're there in January or February, you can see a lot of butterflies, whereas in over almost all of the U.S., there's very little of what you'll see during that time. So in terms of this facility for butterflies, the Rio Grande Valley is a great is a fantastic place.

**David Todd** [01:57:24] So, something else I was curious to ask you about: I mean, we've talked a little bit about the Association and the field guides and then the butterfly center. I understand that you've been active in organizing events too, like the Texas Butterfly Festival, and, you know, it'd be nice to know the origins and highlights of that event.

**Jeffrey Glassberg** [01:57:43] So, the Festival actually predates the Butterfly Center, and it was Viola Espinosa who actually started the Butterfly Festival. I believe that's true. And then, but, so it was run by the City of Mission for quite a few years. And it wasn't until, I'm not sure what year, 2013 maybe, it wasn't until then, that we that we've been running it for the city since 2013, I think, each year.

**Jeffrey Glassberg** [01:58:27] We have other events now there. There's a Mega Moth Night coming up in September, and there's a Native Plant Wild Gardening Festival in the spring so.

**Jeffrey Glassberg** [01:58:43] And these are fun events. The Butterfly Festival, yeah, I mean, because, you know, people, you know, show up. They're all interested in the same things. So many of them become friends. You go down there, people. I mean, now you see all these butterflies and so forth, and have a great time there. But you run into all these other people that are, you know, like you. So, you know, it works out, it works out well for a lot of people.

**David Todd** [01:59:12] That kind of camaraderie and community building must be really important. So...

**Jeffrey Glassberg** [01:59:19] It is. I will tell you, one of the best days, I mean, right before the Festival, we run something called Community Day, where we open up the Butterfly Center for free to anybody. Usually there's a small charge to come in, but even a small charge for a lot of people in the Valley is too large a charge. So we open it up for free and, you know, and there's radio stations there and so forth and all sorts of activities. And so, and, you know, I'm there many years.

**Jeffrey Glassberg** [01:59:53] But, there was one year and there were literally thousands, thousands of people come that day. And I just remember, you know, you get all these kids and teenagers and they're all taking pictures of each other like, you know, with their heads, faces like behind the plant, and with butterflies around them and stuff. And they're all laughing and smiling and having a great time. And I tell you, that was, that's one of the best days of my life.

**David Todd** [02:00:21] That's really sweet. Yeah. I mean, I think that it sounds like these butterflies are really a door-opener for a lot of people that may not be, you know, typically introduced to the outdoors and nature.

**David Todd** [02:00:34] So, that was actually a question I had for you. I understand that butterflies have, you know, got lots of value and interest in and of themselves, but that some people regard them as really an indicator species. And I was curious if you could comment about that role.

**Jeffrey Glassberg** [02:00:50] Yeah. So, well, a couple of things. Well, first, let me start with. All right. Well, I'll start with that, and then I'll go back to what they do beside.

**Jeffrey Glassberg** [02:00:58] So, yeah, so one of the one of the things butterflies do or, you know, I actually something wrote an article, I mean, this wasn't my phrase. It's a phrase that someone wrote an article about and described butterflies as a gateway drug to the natural world. And they are. You know, they're beautiful, they're easily accessible. And if you poll ... there's actually was quite a few years ago a Yale study of what kind of wildlife people most wanted by the house where they lived, and butterflies were at the top of the list, you know, when birds were down, a number, actually.

**Jeffrey Glassberg** [02:01:43] So, you know, there's very few people that are afraid of butterflies. I mean, you know, people have good feelings about them. They, the whole idea about butterflies, I mean, you see butterflies in popular culture, they're everywhere, in terms of images, and so forth.

**Jeffrey Glassberg** [02:01:57] So. And in terms of knowing what's going on in the natural world. So, that's an important, there's this important connection with people. And of course, you know, I mean, there's many groups of people, maybe that's an exaggeration, but there are certainly multiple groups of people who believe butterflies are the repository for human

souls. You know, I mean, that's the word, yeah, the word psyche is the Greek word for butterfly, actually, you know. So, butterflies have that connection with people.

**Jeffrey Glassberg** [02:02:36] And then, you know, the whole idea of the metamorphosis of butterflies where, you know, you can change completely who you are for the better. That, of course, has a powerful hold on people as well.

**Jeffrey Glassberg** [02:02:54] And, butterflies are also an important indicator of the health of the environment. So, and unlike most vertebrates, mammals and birds especially, the effect of changes in the environment on butterflies, and other insects as well, but butterflies are so easy to monitor that, you know, the time lapse is incredibly short. Butterflies respond amazingly quickly to any changes in the environment because their lifespans are so short that they constantly have, you know, have to recreate their population from scratch. And so, the environment that they face, if there's a change in it, will either make the population do great or terrible or not. You know what I'm saying? They respond right away in terms of what their numbers are.

**Jeffrey Glassberg** [02:04:06] Whereas mammals and birds that live for many, and in many cases, most cases, many years, the population responds only slowly. Even though the environment may get worse, the decline in the mammal or the bird population may not be apparent for many years because the same individuals are still there. So, that's one way they're a key indicator of what's going on.

**Jeffrey Glassberg** [02:04:35] And, then of course, as I say, you know, it's funny because, you know, you look at, you know, lawns and places that look okay. And, but there are no butterflies. And that's telling you there's something wrong.

**Jeffrey Glassberg** [02:04:46] And they're not adaptable in the same way even, you know, like even birds, I mean, like, even where I live in suburbia. There's lots of birds and there's many, many species of birds that what's important to them is the structure of the environment. That is: is it treed? Is it shrubbery? Is it more open? As opposed to the particular species of plant.

**Jeffrey Glassberg** [02:05:17] Whereas butterflies, most of suburbia might as well be a movie set. You know, birds are really happy. There'll be lots of species of birds that'll be there. But for butterflies, it's like there's no reality whatsoever, because they depend on these particular plant, native plant species that have to be there.

**Jeffrey Glassberg** [02:05:41] So, they're really a much better indicator of what the health of the environment is.

**Jeffrey Glassberg** [02:05:47] And but the other thing I'll say is they play, most people think, you know, probably because they're beautiful and people have this prejudice that things that are really beautiful must not be important or real. Whether it, you know, that plays itself out in all sorts of ways.

**Jeffrey Glassberg** [02:06:08] But with butterflies, they are quite important. I mean, like, for example, butterflies and moths are almost certainly the most important. The caterpillars of butterflies and moths are almost certainly the most important food source for all of the North American songbirds. And, you know, if without butterflies and moths, the population of songbirds would be way, way down compared to what it is, because that's their main food.

**Jeffrey Glassberg** [02:06:39] There is many species of ... although it's true, that especially for human agriculture, bees are, you know, not even mainly non-native bees, are used to pollinate them. But for many, many species of wildflowers, butterflies are the most important - in some cases, only - pollinators, I know of.

**Jeffrey Glassberg** [02:07:05] And again, there's very few cases that are actually well-studied. I mean, is not, there are individual ones. I mean, like there's various lilies that are pollinated, almost certainly almost only by butterflies. There's a certain, there's a thing they call a flame azalea, a very common Appalachian azalea, that's a beautiful plant. It's pollinated almost only by swallowtail butterflies.

**Jeffrey Glassberg** [02:07:33] There's a group of plants called mock vervains. They used to be called verbenas; now they are called mock vervains. The genus is glandularia. It's widespread. And in much of much of the United States, different species, every place I've seen it is pollinated, they're pollinated only by butterflies.

**Jeffrey Glassberg** [02:07:53] So, butterflies do have a real role. They have symbolic roles. They have indicator roles. And they have real roles.

**David Todd** [02:08:04] That is very interesting and well-put. Thank you.

**David Todd** [02:08:07] Well, I see that I'm taking much of your day. Let me let me just ask one more question.

**David Todd** [02:08:15] You know, you've talked about various aspects of your life and of butterflies from, you know, the field guides to the books and the Association, the Butterfly Center and the Festival and then this role of butterflies. But is there anything else you might say about butterflies' place in your life? And you, know what, what they meant to you?

**Jeffrey Glassberg** [02:08:37] Well, for me, they've been everything. Right? They're an organizing principle in my life. I travel around. I mean, you know, it's like people might like, you know, old churches and travel around the world and look at old churches. To me, I've got to see. I've had an unbelievably great life. I've been so lucky in so many ways. And a good part of that is butterflies. And I got to see so much of this country and the world because of butterflies.

**Jeffrey Glassberg** [02:09:10] I mean, almost every day, I mean, when I read any article in the paper almost every day and the headline is from this place or that place, almost always, I've been there. You know, I've been to all 50 states, you know, I've been to all through Central America, Mexico and all looking for butterflies, you know.

**Jeffrey Glassberg** [02:09:27] And so, it's, you know, it's you know, it's worked for me. And the thing is, is, as I say, it's just one of those things, you know, you don't know why it is. It's like I said, you know, we started doing this as kids. Right? And I don't know what it is, but when I walk into a field that's filled with butterflies, it's just something that makes me feel good.

**Jeffrey Glassberg** [02:10:02] You know, why? I do not know. It is nothing intellectual about it. It's just some kind of deep-down emotional response.

**Jeffrey Glassberg** [02:10:18] So I'm a lucky guy. I've gotten to do, you know, things that I'm passionate about and love and all parts of my life have worked out just in very lucky ways.

**David Todd** [02:10:32] That's great. Well, thank you for sharing it.

**David Todd** [02:10:35] Is there anything you'd like to add before we close down?

**Jeffrey Glassberg** [02:10:39] I don't know. I think I've talked long enough.

**David Todd** [02:10:43] Well, thank you very much for your time. I really enjoyed it and learned a lot. And I hope that that our paths cross again when you next come to Texas. So don't be a stranger.

**Jeffrey Glassberg** [02:10:57] Okay. Well, thank you for your project.

**David Todd** [02:10:59] All right. Thank you.

**Jeffrey Glassberg** [02:11:01] Bye now.