

PLANT PEOPLE Season Three Episode Four “Ghost Orchid with Dr. Melissa Abdo” Transcript

JENNIFER BERNSTEIN NARRATION: Orchids make up one of the largest plant families in the world with more than 28,000 species currently known to science. But of all of the stunningly diverse orchids to be found on Earth, one in particular, the ghost orchid might be the most captivating. The author Susan Orlean cast the spotlight on this elusive flower in her 1998 nonfiction book, “The Orchid Thief,” where time spent with an orchid poacher in South Florida brings unexpected brushes with the true passion, longing, and even obsession that such rarities inspire. And since then, the flower’s legend has only grown.

I'm Jennifer Bernstein, CEO and the William C. Steere Senior President at the New York Botanical Garden, and this is “Plant People.” Today, we're joined by Dr. Melissa Abdo, Sun Coast Regional Director of the National Parks Conservation Association, and an expert in tropical ecology and protected areas management. Together, let's dive into this story of this coveted and threatened flower.

JENNIFER BERNSTEIN: Melissa, I want to welcome you. Welcome to Plant People.

MELISSA ABDO: Thank you, Jennifer. It's such a pleasure to be with you today.

JENNIFER: And before we get into the ghost orchid, I want to start with you. Tell me about your role at the National Parks Conservation Association.

MELISSA: I have the privilege of working every day at National Parks Conservation Association to help protect and enhance our country's remarkable national park system. The story of protecting our parks is one that is very much connected to a story of protecting our wildlife and biodiversity and indeed our plant species.

JENNIFER: So, you came to your work at the National Parks Conservation Association by way of a career in science. So tell us a little bit about that.

MELISSA: I can start really early where my career first, gave me exposure to ghost orchids since that's our plant story of the day today. Over 20 years ago, I was working as a member of a very small team of researchers that was tasked with inventorying and studying all the diversity of plant life that exists within some of South Florida's most beloved national park sites, from Big Cypress National Preserve to Everglades National Park, and far beyond.

And when I was doing that work, studying and inventorying the plant life of Big Cypress National Preserve, I will never forget how incredibly long it took and the many, many months of working, knee deep in the swamp, tromping through these really incredible subtropical habitats before I had the good fortune of discovering a new subpopulation of ghost orchids and Big Cypress.

And it wasn't just the ghost orchid that was remarkable about that work, but every day was special because we would navigate out to randomly place GIS points strewn across this massive landscape through the far reaches of Big Cypress. And most days it involved really long, perennially wet hikes through the swamp, through prairies or slews or flatwoods.

And some days we even had to be flown in via helicopter because the terrain is so remote and vast out there. And it was long enough ago that I actually had a stainless steel compass in hand and printed up maps, which some can appreciate. and I'll say that it was really that discovery and others similar to it that I was fortunate to be able to do in this remote vast place, albeit one that was but a stone's throw from Metropolitan Miami.

And it was work like that that really ignited in me the sense as a young scientist that there was still more to be discovered about our natural world. There were still discoveries to be made, and so I went on to have a career as both a scientist and an explorer documenting the biodiversity of treasured National Parks in the US and abroad, and also advocating for sound science-based policy so that we can better protect nature and biodiversity.

JENNIFER: Yes. I believe some of your specimens may be in our Herbarium.

MELISSA: Yes, I think so. Some of them should be there. Yes.

JENNIFER: That's wonderful. So the ghost orchid, it's not necessarily a household orchid like the Phalaenopsis or the Lady Slipper. So, for listeners who haven't had the good fortune of encountering one, can you describe what this orchid looks like?

MELISSA: Definitely. The interesting thing is that if you were to see it, which most of us would not just see it in happenstance...It really takes effort to be able to see it. But if you were to see it from most periods of the year, you wouldn't see more than just a subtle dancing of roots on its host tree.

So, of course, it's an epiphytic ghost orchid. And, in South Florida it occurs only in a special part of southwestern Florida, just in a handful of conservation areas. And it typically only grows in deep, nearly, perennially wet swamps. And it grows on just a couple of host tree species in southwestern Florida and beyond Florida it's only known to grow in Cuba. And again, for most of the year, all you would see is just the subtle gray lines of its roots attached to the tree. But, if you are fortunate to see it during early Florida summer, which is of course a wonderful time to be in Florida. It's hot and muggy and humid....

JENNIFER: If you're a plant, it's great....

MELISSA: That's right, that's right. And buggy. But...so if you, if you venture out in early summer, you can see this really mesmerizing sort of dancing ethereal looking white orchid. And, people have speculated of course that the name ghost orchid but to many, it looks like a ghost sort of dancing there. And it's often also a singular orchid. So, some people can imagine, sprays of orchids where you have multiple flowers on one inflorescence. This orchid often you'll see just one or two flowers occur, and that's also connected to the story of its rarity. Right?

But in some places we're also fortunate to know that there are multiple flowers that can be seen. And so one of the best places and most well-known where people can see ghost orchids in the wild in a protected area is in Audubon's Corkscrew Swamp Sanctuary. And there there's a magnificent individual known as the Super Ghost,

and it's...it was discovered in 2007 and it famously has multiple blooms in early summer that can be safely observed from a distance on the boardwalk.

JENNIFER: Yeah, I want to talk a little bit about that rarity because I think it's part of what has made it so, captivating for all kinds of people. What prevents it from being cultivated?

MELISSA: I wouldn't say it's entirely prevented from being cultivated, but it is certainly very difficult to cultivate and the story of the Ghost Orchid is sadly one that has been, quite tragic in that it has been famously poached and, people have not, have not had good success in cultivating ghost orchids.

But I think that conservation happens in situ and ex situ, right? So, it happens in place and it happens because of the efforts of people. And in situ, we know that ghost orchids are rare because they're long lived. They can take 15 years or more to reach sexual reproductive maturity. And in Florida the reproductive age plants...they're typically only grow on trees and really deep swamps.

So they're, again, limited or rare because of this sort of microcosm of a habitat, a very specialized habitat that they need in order to survive. And then further diving into the story of how they reproduce and live their natural history, we know that there are probably multiple insect visitors that come and visit the ghost orchids flower, but very likely only a couple of effective pollinators.

So, here you have a flower that probably typically doesn't produce many blooms. It only does so after 15 years or more, once it's reached maturity, lives in a very specialized deep swamp habitat, and it might only produces a few seed pods, and then those seeds have to make their way onto another really special deep water swamp habitat in order to grow and survive.

And then that story is compounded by very real threats of poaching of the influences of climate change. So we have more intense hurricanes. We know definitively that some sub populations of ghost orchids have been impacted by hurricanes. And then of course, the story of South Florida's impacted hydrology and degradation of our swamp ecosystem.

So, it's a really complex but fascinating story of sort of a natural rarity of a plant that's been compounded by these anthropogenic factors.

JENNIFER: There's a sort of sad dichotomy in this, which is that the natural rarity of the plant has made it in a way more attractive to poachers, and I think we see that dynamic with other species as well.

Can you talk about when it became really clear that the poaching of this particular species was threatening its survival and what steps have been taken to address that?

MELISSA: Yes. So, the ghost orchid has sadly, definitely been impacted by poaching and that poaching is not something of yesteryear. I think a lot of people that have heard about the Everglades ecosystem have probably heard about the tragic stories of truckloads, or carriage loads full of orchids being poached and taken out of the Everglades historically.

But the sad truth is that again, that's not something of yesteryear. There has been poaching that is documented to have occurred in recent years and as one of the steps to work towards remediating that National Parks Conservation Association and two of our fantastic partner organizations in January of 2022, we co-authored a petition to list the ghost orchid under the Endangered Species Act.

And, fast forwarding a few years this past June, this past summer, we celebrated a milestone victory in that effort. That we got one step closer to formal protection for the ghost orchid. That specific milestone was that the U.S. Fish and Wildlife Service proposed to list ghost orchids under the Endangered Species Act.

And so that started another clock ticking. We're anticipating that we should get a finalized rule within a year of that. And again, that milestone victory happened in June of 2025. If the service finalizes this rule as proposed, it would add ghost orchids to the list of endangered and threatened plants and extend the act's protection to the species.

And that would truly mark a critical step forward in protecting the species.

There's famously another orchid from the Everglades ecosystem, the Florida govenia, *Govenia floridana*, and that is an orchid that was discovered back in the 1950s inside Everglades National Park.

The national park was already established at that time, and Everglades is famously a national park that was established to protect biodiversity. And yet, around a decade later, the last sighting of Florida govenia occurred, and now it's presumed extinct. So, the fact that ghost orchids and other orchids and rare species occur within National Park boundaries does not make them invincible.

They're still susceptible to harm and they need protection. We're hoping to see that protection come in the way of Endangered Species Act protection for ghost orchids and also, greater funding and support for national parks and other conservation areas that protect these incredible species.

JENNIFER: That's terrific that you all took that up and that it's moving forward towards hopefully a designation under the ESA. Was there a particular tipping point or threshold that caused you to pursue it right now; or maybe said another way, why is the designation particularly urgent at this moment?

MELISSA: I think it's particularly urgent because we've seen such a drastic decline in the ghost orchid population and we knew that there were incidents of poaching that had occurred recently within national preserve boundaries. And this combined with timely impacts that had occurred. So, if we go back to 2017, we had a major hurricane impact Southwestern Florida, and we knew that some of the host trees and that were supporting a subpopulation of ghost orchids had been impacted by that hurricane.

And so, really it was again, just these compounding factors that had led to significant decline. And, we knew that the ghost orchid was truly on a precipice. And here is this iconic species that everyone loves. It's just beautiful. Anyone that sees a picture of it, you can't not love it. And yet it was truly on a precipice and remains so today.

JENNIFER: So, the U.S. Fish and Wildlife Service is considering this designation...Now, are there steps that listeners could take if they wanted to urge the service to adopt this designation? Are there ways to add their voice?

MELISSA: That's a great question, and we always want to urge people and support people to add their voice to the cause of species protection and, and national park protection. I would say for this particular case, the U.S. Fish and Wildlife Service announced a proposed rule back in June of 2025, and they did have, fortunately, a formal 60-day comment period.

And so we were really delighted to see that so many people did submit comments to the service to indicate their support for listing the species. So, while the formal comment period has ended, people can of course reach out and support the service in finalizing that proposed rule that would bring the ghost orchid formally into protection under the Endangered Species Act.

And, another effort that's ongoing is kind of the bigger picture. If we zoom out away from this particular species for a moment and look at the places where conservation of ghost orchid occurs. So, the National Park sites, including Big Cypress National Preserve, right now, at this moment, what is truly needed is support for staffing and funding our national park sites.

This past year has been truly unprecedented in terms of the National Park Service as a whole losing about 25% of its permanent staff. So, the federal agency that is mandated with managing our beloved national park sites, has lost a staggering one in four of those National Park Service staff.

And so, another action that listeners can take is to, again, be mindful that all these species are conserved in place in situ in addition to incredible institutions like the New York Botanic Garden that conserve species ex situ. We also need support to, to staff, appropriately staff the National Park Service that protects these critical areas.

JENNIFER: Yeah, that's an important dimension of this because the ESA will create, I would imagine, new accountability for poachers and people who disrupt

the habitat of this species. But, to the extent that they take a bad action, some poacher comes and removes the plant that is done.

So, you need people on the ground that are managing these places that can prevent those things before they happen. You really do need both.

MELISSA: That's exactly right. And you also really need intrepid researchers of today. Since we're talking about orchids today, there's another rare orchid that's also on the brink in the southern Everglades. Again, this national park that was established to protect biodiversity. This orchid is *Trichocentrum undulatum*, a mule eared orchid, and thanks to the great work of Dr. Hong Liu and her lab, we believe that there are probably less than 50 adult orchids living in the only known U.S. population in Everglades National Park.

So, here's yet another orchid that's really on the brink and that needs the National Park staff supported and funded...the park science that occurs. That's often collaborative efforts between botanic gardens, universities, park science staff, and other researchers. You need the community advocating for these species protections and support for these agencies, and also just the great work of individual researchers and conservation practitioners.

JENNIFER: Absolutely. If we go back to the ghost orchid for a moment, how many ghost orchids are estimated to be left in Florida today?

MELISSA: We estimate that there are less than 1,500 individuals, and probably less than half of those are reproductively mature.

JENNIFER: So, a small population. It's interesting. You've talked about a couple of rare orchids today. The ghost orchid has captured the imagination now for a long time. What do you think it is?

MELISSA: I can only speculate from being fortunate and very privileged to have been able to see them in the wild that...I think that part of the mystery and allure is the habitat that they're from. When you spend time in a deep swamp of the Everglades, these places are truly special because here you have this intermingling

of temperate and tropical species, so you have tall towering cypress trees and their roots and cypress knees around you.

And then you have pond apples and pop ashes throughout the swamp. And some of these trees are just loaded with tropical epiphytes. So you're in a deep swamp, but you have the epiphytes of a cloud forest kind of. So, you have this intermingling of species and it really is a magical, serene place. Some people might think of a swamp as kind of gross....

JENNIFER: Swampy.

MELISSA: I would never....I would never be one of those folks. But, if you're standing in a swamp and you look down at your feet, you can usually see your feet below the water. The water is crystal clear. You can see a myriad of herbaceous species coming up, growing below the water.

There are often water lilies floating on the surface. And then you have the trees that are just brimming with these epiphytes. I think the fact that the ghost orchid grows in such a truly magical habitat is one of the things that draws people to this species. And I also think it's the beauty. Again, often singular flower that almost looks like it's floating in the air and it's very ephemeral. It's only...pops up in this short period of the year. So I think, I think those are some of the reasons that make it special.

JENNIFER: Yeah, I think species become sort of emblematic of these conservation efforts because they do represent something essential about the place that they come from, you know?

And so it doesn't surprise me that you talk about the habitat being a core part of the allure and you make the swamp sound very romantic, although I imagine it can be uncomfortable. I mean, I won't ask you to describe what sort of gear you're wearing when you go into the swamp, but it's an effort, isn't it? It's not for the faint of heart.

MELISSA: Yeah, no, that is fair enough. And yeah, I guess, you can certainly see it in a romantic and beautiful way, but the reality is also that that very much goes hand in hand with other realities, like buzzing mosquitoes or horse flies and, perennially being soaking wet, all day if you're working in the swamp.

And there...not to mention alligators too, right? Alligators and water moccasins. There, there are those.

JENNIFER: You've led biodiversity conservation efforts around the world. How does the struggle to save the ghost orchid compare to what you've seen with other threatened species or threatened ecosystems?

MELISSA: So we are fortunate to have one of the most well botanized areas, regions, really in the United States, perhaps in the world. I, I won't definitively say that, but it's really thanks in no small part to the work of a great organization called The Institute for Regional Conservation. Definitely give them a shout out. And again, many others, just so many, research organizations, individual researchers, botanic gardens that have done work over the years to determine what plant species are found where.

And so, South Florida has a very good handle on what plant species are occurring in all types of conservation areas. From national park sites all the way down to city and county parks. And that makes it a very unique place because we know what is occurring and in theory we can then be better empowered to protect it in place.

We're also the seat of one of the world's largest ecosystem restoration efforts with the effort to restore the entire greater Everglades ecosystem.

And so in those ways, south Florida is very fortunate. And I think I'm reminded every day in seeing how different South Florida is and yet still how imperiled some of the species there still are that we still need more. We still need more people that care about the work that you do to protect and preserve plant species and the work to protect, protect them in special places like botanic gardens and amazing national treasures like national park sites.

JENNIFER: Yeah, I love in what you said in particular, the continuity of connection between stakeholders from city parks to the national parks, that continuity of knowledge about what is in those places and the continuity of attention and focus.

'Cause you talk about habitat loss and to the extent that we don't want to continue to encroach further into places that should be protected, cities need to thrive and there needs to be nature that thrives in cities for people to want to be there. But, you don't want the people in cities to lose connection to the still intact and pristine ecosystems that are being protected within the National Park system.

So, you need that connection, to be there in order for it to be persistent and to work over time. You're from Miami originally, right?

MELISSA: Yes. Yes, I am.

JENNIFER: Yeah. And that awakening that can happen when you realize how close nature really is to you.

It's not something distant and far away. That, that came out to me in your earlier story about encountering the ghost orchid it's like, "Wow, this is all right here." And that's true of so many places. It's definitely true in South Florida, but it's true here. It's true in New York City. It's, it's true all over the place.

JENNIFER NARRATION: The story of the ghost orchid may be unique with all of its intrigue and obsession, but as a threatened plant, it's not alone. A surprising proportion of Earth's plant life faces an uncertain future due to factors like climate change, habitat destruction, and poaching.

But together, botanical gardens, conservation organizations, and countless other advocates for the plant world are working for a brighter botanical future. To learn more about Melissa's work and the National Parks Conservation Association, visit npca.org. And for more on ghost orchid conservation efforts, check out the links in our show notes at nybg.org.

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