



Season 1 Episode 11 – Buzzing About Bees

November 30, 2022

Speaker 1:

Welcome to the Farming Basics podcast with Olivia Fuller. We'll have sustainable farming tips from growers across the state and extension specialists at Auburn University.

Olivia Fuller:

Welcome back. It's Olivia Fuller and Jacob Kelly. And today we have Anthony Abbate here with us. He is with the Bee Lab. And lots of super fun things to talk about with that research that's going on here at Auburn. So we're really excited to have you on. Thanks for joining us.

Anthony Abbate:

Yeah, thanks for having me.

Jacob Kelly:

Thanks for meeting up with us. Anthony, first off, tell us a little about yourself. How'd you get in this line of research? Did you get stung by a bee and you're like, "That's the one, that's what I want to do."

Anthony Abbate:

Yeah, so I originally grew up in New York. So yeah, I went to school in North Carolina for my undergraduate studies. And then from there I went to the University of Florida and did a master's degree. And then now I'm

here in Auburn, Alabama, where I recently completed a PhD last year and now I'm working as a postdoctoral researcher for the Auburn University Honeybee Lab. So yeah-

Olivia Fuller:

I love that that exists here. I really do. Because it was just coming about when I was graduating from Auburn and I was so upset that I didn't get to be a part of it at that time, but-

Anthony Abbate:

Oh yeah, and it's grown quite a bit now. I mean, there's upwards of 20 plus, maybe even 30 plus people that are working there now, including graduate students, technicians, undergraduate students. So yeah, there's a lot of people there now.

Olivia Fuller:

I love that. I love that everybody's so interested in bees and pollinators and a cool thing to study and to learn about and to do some scouting in your yard, see what's out there. So why are they so important?

Anthony Abbate:

Over 80% of the world's flowering plants actually rely on animal pollinators. And about three fourths of the world's food crops are dependent upon insects for pollination. So for many flowering plant species, insects are crucial pollen vectors for producing seeds and fruits. So the global value of insect pollination, including managed bees such as honey bees, bumble bees, leaf cutter bees that are utilized in agricultural systems as well as wild bees, it's estimated to be about 180 billion. I mean that's billion with a B, so-

Jacob Kelly:

Wow-

Olivia Fuller:

Yeah, and I think that's proof of why it's so important that on a farming podcast we have you on here because it's so important for the farmers to take that into consideration.

Anthony Abbate:

Absolutely. And I mean, just talking about the United States, narrowing it down instead of a global focus, like United States, bees contributed about 11% of the nation's gross domestic product in 2009. That equals 14.6 billion in agricultural products. And that's provided by bees in general. So yeah, it's a lot that goes into it.

Jacob Kelly:

Wow.

Olivia Fuller:

And that's native bees and honey bees too? I wanted to differentiate the two so that the listeners aren't confused when we're talking about one or the other because honey bees are actually not native. And I didn't know that for a long time. They're European-

Anthony Abbate:

Most people don't, they've been here for so long, people just don't even realize that. But yeah, they're a non-native species but-

Olivia Fuller:

And it's our native bees that do more of the pollinating. So when I work with farmers, I try and... I think a lot of our listeners know that I work with a pollinator program and helping farmers know how to plant for them.

Anthony Abbate:

Oh yeah.

Olivia Fuller:

It's really cool that we have you here to get into the nitty gritty of what's going on.

Anthony Abbate:

Absolutely. And it's not only that wild bees are part of the picture when it comes to pollination for these agricultural systems. It's that most of the time your native bee species are actually more efficient at pollinating these crops than say the honeybee. And there are certain reasons for that too, when it's really rainy and cold. Honeybees aren't actually out there actively foraging, but if you went out there on a rainy and cold morning, you'd see that native bees are active and they are visiting flowers and pollinating them when honeybees aren't.

Olivia Fuller:

And I think that... so the Bee Lab studies both, right?

Anthony Abbate:

Yeah. So our lab is basically split. We have in the one native... or in the one Bee Lab, we are split between honeybee research and native pollinator research.

Olivia Fuller:

That's great. I really do love that because both are so important. I mean, honey's amazing, and when you think of bees, that's often what you think of. But both are so important. So I'm glad that Auburn's doing that research to get that information to the farmers.

Jacob Kelly:

Well Anthony, we hear all the time the bees are declining. The bees are declining, we got to help our bees. Are our pollinators out there in decline?

Anthony Abbate:

Yeah, they are. So there's good evidence that both commercially managed bees and wild pollinators are in decline. So if we're just talking about the honeybee right now, the Bee Informed Partnership basically puts out surveys to beekeepers every single year. And these surveys include backyard beekeepers that have fewer than 50 colonies, sideline beekeepers that have between 51 and 500 colonies. And then even commercial beekeepers are in these surveys which have 501 or more colonies, so big commercial beekeepers. And basically the preliminary results that was put out by the Bee Informed Partnership that was... took place between April 1st, 2020 and April 1st, 2021, basically beekeepers in the United States lost an estimated 46% of their managed colonies-

Olivia Fuller:

Oh, that's a lot. So they are declining.

Anthony Abbate:

Oh yeah. I mean it's definitely an alarming number. So there's quite a few issues with that. And then if we're talking just strictly about our native pollinators and specifically native bees, there's also really good evidence that their populations are declining as well. Certain species and some of the most important crop pollinators such as bumblebees, have declined dramatically over the past several decades in the United States. But really it's really difficult to assess all bee species across the whole entire United States. Now, I'll tell you this, there are 20,000 known native bee species. Well just bee species in general in the world. And in the United States there's 4,000. So trying to track all 4,000 bee species is an extremely hard task. I mean it's like it's very hard. So some of the bee species that are really important, say for pollination services that they provide, maybe they get more of the spotlight than others. I'll talk about this in a little bit, but there are some bumblebee species that are really important. Their populations have crashed.

Olivia Fuller:

And there's a lot of ways people, everyone can get involved from farmers planting large scale fields for the pollinators to keep them on their land so that they pollinate their crops when they're needed. And then from homeowners participating in citizen science aspects that a lot of organizations are doing because since there are so many, we need everyone involved on this.

Anthony Abbate:

Absolutely.

Olivia Fuller:

So why are they declining?

Anthony Abbate:

So again, if we start with the honeybee, honeybees are exposed to a variety of stressors. Right? So whether the stressors originate from how we manage them, such as relating to their nutrition that they're receiving, or how we manage pests within the colony or other stressors associated with the environment, say including being exposed to pesticides or how climate change is altering the environment around them, thus impacting their forage ability, what forage is actually available for them. And then lastly, honeybees can be exposed to parasites and pests such as certain types of bacteria, fungi, mites, viruses, all of which cause health issues in the honeybee and at the individual level and ultimately at the colony level.

Jacob Kelly:

Just like us, they get stressed too. And when they're stressed, just like us, they're not as healthy as they could be, not as productive, and it's all downhill from there. So keeping them stress free is the way to be.

Anthony Abbate:

Absolutely.

Jacob Kelly:

So are there any pollinators that are on the endangered species list in the United States? There's a lot of decline out there. I assume that there's some that we may not have for too much longer if we don't do something.

Anthony Abbate:

There certainly are. And to kind of backtrack just a little bit, just like the honeybee is going through declines and they have stressors that we think are creating these issues that we're seeing in their declining populations, there's evidence that suggests that anthropogenic or human derived pressures are the main drivers for pollinator declines in the US and the world as a whole. And these really include habitat loss, agricultural intensification, diseases, pesticides use, and the effects of climate change. So it is estimated that about 40% of the world's insect species could become extinct in the next few decades, which is pretty alarming. And insects that are put on the endangered species list, it's because of these issues that we're seeing and these stressors. So according to the US Fish and Wildlife Service, there's actually 95 species of insects that are on that list. And I did not know that until I looked some of this stuff up.

And some of them, if they're on the endangered species list, it just means that those species are at serious risk of an extinction. And there are beetles, butterflies, damsel flies, moss, grasshoppers.

Olivia Fuller:

Wow.

Anthony Abbate:

And bees are on that list as well. But if we kind of focus on the bees, seven species in the genus *Hylaeus* were added to that list back in 2016. Then two bumblebee species, the rusty patched bumblebee and Franklin's bumblebee, they were added in 2017 and then just last year. So all of these insects are threatened due to some sort of stressors that are leading to their declines-

Olivia Fuller:

And it doesn't take much to save them really with the rusty patched bumblebee, I've seen a lot of, like I mentioned the citizen science and just people being aware that, "Oh, we're killing this bee by doing this?" That's really helpful to know what's endangered. So I encourage people to look up that list and how they can get involved. And because it seems to, I've read that they're coming out of endangerment by some of those practices being implemented. So that's encouraging. There are some things that it could be easily reversed by doing. What are some of those steps that are being taken to support that... prevent that loss?

Anthony Abbate:

The first step is basically monitoring. You don't know if those populations are declining or increasing or if they're staying stable. If you don't, you're not even aware of how their population is doing in the first place because there's 4,000 species out there. How do you possibly monitor each of those? I mean it's really difficult, but surveying and monitoring is basically the first step. So there are government programs and there are universities and researchers that are looking into this-

Olivia Fuller:

And our farmers, we encourage them to scout anyways. So that's scouting for the pest and that scouting for the beneficial insects too.

Anthony Abbate:

Yeah, definitely. So anybody can learn how to identify a bumblebee on the fly. Some of them are more difficult to identify, but your rusty patched bumblebee, I mean that is very distinctive and anybody can identify that in the field and be like, "Oh my gosh, that's an endangered species, I'm not going to collect it or whatever." So-

Jacob Kelly:

Can we find those in Alabama?

Anthony Abbate:

No, not here. So they're mostly up in the Midwest.

Jacob Kelly:

Right.

Anthony Abbate:

Yeah.

Jacob Kelly:

Okay.

Olivia Fuller:

What's our common one? Is it the mason bee?

Anthony Abbate:

Our common-

Olivia Fuller:

Native bee that we could find and encourage people to look for here-

Anthony Abbate:

Oh man, there are so many. I mean we have multiple bumblebee species here in Alabama alone. There's like about, we don't really know for sure, but we think there's probably about 350 or so native bee species here. So I mean all of your common ones right now, everybody's seeing these carpenter bees flying around and they are just all over the place. So that is a really easy one to spot. And if you're not sure if it's a carpenter bee or a bumblebee, I always tell people if it has a shiny butt, it's a carpenter bee. So that's one way to tell it apart from a bumblebee, because bumblebees have fuzzy butts.

Olivia Fuller:

Oh. Okay. So who can help support these populations?

Anthony Abbate:

Literally anybody. I teach a biology course here at Auburn and we give our students wildflower seeds and you know, you can literally plant wildflowers anywhere. Some of my students, I mean it's their prime example, some of them live in a house that has a backyard, front yard and they can throw some seed on the ground and grow some wildflowers. Whereas some of them don't, they may live in a dormitory, maybe they just have a balcony, but they can plant those seeds in pots. And both of those avenues are really good for the pollinators in the area. So anybody can do it. But for people that have a lot of land like farmers, planting wildflowers can be both beneficial to the landowner and essentially to the pollinators.

Olivia Fuller:

And that's really exciting because farmers, it's clear how much they need that pollination. It's not all about saving the bees and putting them first, because our farmers are so important. So it's win-win though. I want the farmers to be able to increase their yields by planting these things and get more money by doing so. And there's a lot of programs that they can go to find resources to get that seed. NRCS has a few programs where they can purchase seeds and get reimbursed for that. A lot of conservation programs out there available to the farmers and it doesn't take much. I mean-

Anthony Abbate:

Absolutely, yeah-

Olivia Fuller:

A little wildflower plot is so crucial-

Anthony Abbate:

And it's often even easier than that. So I always tell people there's two main things that bees need. So about 80% of all native bee species nest in the ground, they're ground nesters. They don't live in a colony like the honeybee does. So one thing that you can do is literally just create a patch of bare ground. And that is really, really important to supporting bee populations. So you need patches of bare ground or even leaving dead vegetation standing because bees will nest in the hollowed out twigs and stems. But also in addition to providing them with nesting resources, you have to provide them with wildflowers. So there's really two main components in supporting their populations. And if you could do both in one location, say in your backyard, I mean that is tremendous. And just if everybody adopted that, that would be enormous on even a national level, even in a town that would be huge. So it's just getting people to change their ways of having perfectly manicured lawns. And-

Olivia Fuller:

And there's signage available, there's different things you can find to put in your yard so that your neighbors don't call and complain so that the city knows. And there's even like Bee City USA, there's different programs out there for this. So if you're interested and you want to learn more and you don't want your neighbors to complain about your yard, there's signs available.

Jacob Kelly:

AFEGA is a proud sponsor of the Farming Basics podcast. From generations past through the years to come, the Alabama Fruit and Vegetable Growers produce an abundance we all enjoy, join Alabama farmers at the annual conference and trade show in Gulf Shores, Alabama, February 9th and 10th, 2023. Visit [AFEGA.org](https://www.afega.org) to learn more. Alabama produce, it just tastes better. So we're talking about wildflowers, but which flowers specifically are highly attractive to our pollinators?

Anthony Abbate:

For at least here in Auburn, Alabama. So here at Auburn University we conducted a wildflower attractiveness study to basically assess the attractiveness of wildflowers to two native bees. And what we found was that Indian blanket, butterfly milkweed and blue vervain attracted great abundances and diversities, different types of bees. But in addition to those, I mean we would call those our powerhouse species if you're going to plant any, start with those three because they are really, really good at attracting pollinators. But in addition to those spotted bee balm. Lance leaf coreopsis, gray headed coneflower, they also attracted a lot of other pollinators such as wasps that are really important. Butterflies, beetles, flies, I mean, you name it. These species we're attracting them.

Olivia Fuller:

So can I just go out and willy-nilly plant any wildflower species I want?

Anthony Abbate:

Yes and no, like you can, but you really have to make sure that the wildflower species that you're planting is native to your area. You basically don't want to introduce something into your area that's not supposed to be there. So one way you can do this is if you're interested in a wildflower species, let's just say Indian blanket, you can go to the USDA's plant atlas website and you can type in the species name and from there it'll pull up a map. When you look at that map, look at the area that you live in or where you want to plant. And if that area is highlighted green, that's basically a green light to plant that species. If it's not green, then you probably shouldn't be planting that particular wildflower species in that area. Just means it hasn't been documented there. So again, you don't want to introduce something into an area where it's not normally found.

Jacob Kelly:

Right. We have enough invasive species and-

Anthony Abbate:

Oh, yeah-

Olivia Fuller:

Yeah-

Jacob Kelly:

All kinds of crazy stuff.

Olivia Fuller:

And a lot of the bee keepers love it because some of them flower and it's a constant battle with the farmers of them spraying it, trying to get rid of it. And the bee keepers are like, "But it's so much pollen."

Anthony Abbate:

So I've heard-

Olivia Fuller:

Yeah. It's been a struggle.

Jacob Kelly:

All right, so I've got growers out there. How do wildflower plantings help them? I've got to be able to sell this to these guys and girls out there that are growing crops for money and they're going to have to spend a little extra money to plant these wildflowers and cover crops and things like that. What's the benefit to them?

Anthony Abbate:

Oh yeah. So studies have shown by planting wildflower strips or wildflower hedgerows alongside your crops or your pollinator dependent crops, even crops that aren't necessarily pollinator dependent, you will still have some value in planting wildflower strips. So for pollinator dependent crops, specifically by planting wildflower strips, you're attracting pollinators to your farm, to your agricultural system. And those pollinators essentially spill over into your crop land. And that can increase your yields for your particular crop.

But additionally, wildflower strips have also shown to decrease erosion within agricultural systems. And I mean it gets even better. So also other insects are drawn to wildflowers because they provide pollen and nectar for say, wasp species and certain wasps are attracted those wildflowers. And they're also natural enemies of, say pests that grow within those crops, within those field crops. And those pests that cause damage, they cause damage to the crops. And if you're attracting those wasps, those wasps will eat that pest and ultimately will reduce the damage to your crop. So really by planting wildflower strips or hedgerows, you essentially increase yields, decrease erosion and decrease pests. So farmers will definitely benefit from doing it.

Olivia Fuller:

And a lot of things do come down to money. And I try to never make recommendations to farmers that aren't going to benefit them financially and make economic sense to them because my background is in economics and that's what I know is important to them at the end of the day. And that's how they live. And we've talked about a few ways to offset those costs through different NRCS programs, but is it expensive to plant a wildflower plot for these farmers?

Anthony Abbate:

So it all comes down to which species you want to plant and how much of it, right? I mean, that's just the basics. Some wildflower species, the seed is harder to get. It's more expensive, you know, you can avoid those species.

You can plant wildflower strips pretty inexpensively. I mean you can go anywhere from a couple hundred dollars to a few thousand depending on how big of a wildflower strip or how many wildflower strips you want to plant. But the more money you put into it, the more money you're going to get out of it essentially. So the more wildflower strips you put in, the more yield you'll have within your crops. So farmers, and this is in addition to the, I guess, advantages of planting wildflowers for pests and increased yields. Farmers have also been shown to, if you're planting these wildflower strips, you can collect the seeds from these species and then sell them as a supplemental income. People have done this out west and it seems to benefit the farmer another way as well.

Jacob Kelly:

So it is not that expensive or it's as expensive as you want to make it. Still probably cheaper than a lot of our insecticides, especially these more expensive, newer chemistries out there that guys are trying to utilize to use on a specific insect that they might be dealing with. If we can attract the natural enemies of that specific insect, it'll do our insecticide for us and we can utilize that extra money on another project or more wildflowers and things like that. So it is pretty inexpensive. How do I go out there and plant a wildflower plot?

Anthony Abbate:

So the first step that you need to take is to reduce the weed competition. And this is the absolute most important step. If you decide you want to throw wildflowers out now and basically don't do any prior prep work, it will mostly fail. I mean, I've seen it time and time again where farmers, landowners, they just didn't do the prep work and too many weeds pop up and out-compete the wildflowers. So think of it as, I want wildflowers say next year or the following season rather than right now. Because patience is definitely the key to take time to reduce those weeds. So you can do this by spraying herbicides like glyphosate, which is broad spectrum herbicide throughout the season. You can solarize your plots around.

Jacob Kelly:

I really like solarizing, especially for smaller plots.

Anthony Abbate:

Absolutely. I mean you can just use, even if you have an old greenhouse that you have extra fabric, you have the plastic for... the plastic's actually kind of expensive right now because of everything with petroleum products. But it is a really good way to reduce weeds with that plastic sheeting. You could also continuously till the soil to deplete the weeds.

Jacob Kelly:

That's right.

Anthony Abbate:

And weed seeds, I mean these are all avenues that you could take and-

Olivia Fuller:

These are great tactics for anything that you're doing. A lot of farmers call and they're calling me right now in the midst of a season and I'm like, "Let's just spend this year prepping the land, getting it ready so that you're set up for success." So a lot of these tools that you're mentioning can be utilized across the board-

Anthony Abbate:

A hundred percent-

Olivia Fuller:

Whether you're planning a wildflower garden or your actual crop.

Anthony Abbate:

Definitely. Because at the end of the day, whether you're prepping the soil for your crop, I mean you want your crop to grow and not weeds. Right?

Jacob Kelly:

Right.

Anthony Abbate:

Well think of your wildflower plot as the same thing. You want to prep it as best you can so you have wildflowers, not something else that's aggressively growing and is going to take over your wildflower plot. Because at the end of the day, if you are putting money into planting wildflowers, you want to make sure that you'll actually end up with a wildflower plot, not just, I don't know-

Jacob Kelly:

Cogon grass.

Anthony Abbate:

Yeah, exactly. Yeah, especially down in Mobile, all the grasses, it's a huge issue. So-

Olivia Fuller:

So what are some of the best resources out here on pollinators so we can continue to learn more? I know we have some things that you and I work on together, like the Planting for Pollinators and things that I'm doing across the state this year. So if you see a flyer for that, make sure you join because Anthony comes and joins me and provides a lot of great tips and the latest research coming out of the Bee Lab on these meetings. But what else is there?

Anthony Abbate:

So I've worked closely with the Xerces Society for the past couple years there in excellent resource to check out so you can check out their website. And also, I've worked really closely with the USDA, NRCS, that's the Natural Resource Conservation Service. They've been just fundamental in helping me establish some wildflower plots for research here in Alabama so-

Olivia Fuller:

And the Xerces Society, I think they provide some of the signs too. So if you're in need of that, they're the end all be all, in my opinion. I think they do great work.

Anthony Abbate:

Oh, yeah-

Olivia Fuller:

So definitely check them out for many reasons.

Anthony Abbate:

And they're an excellent resource. I mean, even what I told you in terms of prepping the soil and everything, I mean they can go into more detail about how to plant your wildflower seeds once you get your plots established. And one thing I'll just throw out here that some people may not know with wildflower seeds a little different than crops is don't cover your wildflower seeds with dirt. Those seeds need sunlight in order to germinate. So one thing I just want to throw out there is that when you're seeding, you literally just broadcast your seed, pack it down with a cultipacker and then that's it. I mean, you just let them do their thing. They're native, they've grown here for a long, long time and they can handle themselves. So-

Jacob Kelly:

Oh, that's great resources. I like looking on the website, the Xerces website and they've got books and all kinds of literature out there. So I mean, if you really want to make a deep dive into pollinators, you can learn more than anybody in this room about pollinators. And you know, you can farm pollinators and-

Olivia Fuller:

And the wildflower.org, I don't think you mentioned it-

Anthony Abbate:

Oh yeah.

Olivia Fuller:

Because that's one of my favorites. That's a place I send a lot of people. They've done incredible research putting together a database of all of the things that you need in your area. It can be hyper local, things that are native, things that grow in shade with well drained soils, whatever your specific desires are and needs on your land, it seems like you can find the plant for you there.

Anthony Abbate:

And there's also another really good resource if you're interested in trying to just figure out what's growing in your backyard. There's a Wildflower Search, that's a really good website. I mean, you can put your coordinates in where you live, what time of the year you saw the wildflower, and then you could enter the flower color, how many petals it has, how the leaves grow, alternate or opposite. And it'll basically spit out pictures of wildflowers and you could essentially try and narrow down what you think it is.

Olivia Fuller:

And that's so fun. I mean that's really, really fun for people to get involved in and pique that interest.

Anthony Abbate:

And one other thing, people always ask me all of these resources reaching out, but for Alabamians, where do we purchase our seed? Where can I buy seed? And some of the resources that I've used in the past were Prairie Moon, check out Prairie Moon. They are an excellent resource, mean you can even filter your search results for the wildflower species, just depending upon if you're into yellow flowers, click the yellow flower button and all the species that are yellow will pop up. You can even search for fall or spring or summer blooming species that kind of, you know... you basically want plant wildflower species that are in bloom the entire year. You don't want to plant, just go heavy on spring and that's it. Because then you won't have any flowers blooming in the summer or fall-

Olivia Fuller:

Yeah. You want to keep the bees hanging around-

Anthony Abbate:

Absolutely, yeah.

Olivia Fuller:

They'll be there when you need them. And aren't you working with a company that provides a seed mixture for Alabama in particular?

Anthony Abbate:

Yeah. So I'm also working with a company called Roundstone Seed. They have been an excellent resource for us. So we are interested in certain species for our wildflower mixtures. We have multiple wildflower mixture types.

So right now we have two different wildflower mixtures that we're planting. One that has 25, about 25 different species, including native grasses. But in another study that we're about to start, we have a high diversity wildflower mixture that has about 80 or so wildflower species in it.

Jacob Kelly:

Wow.

Anthony Abbate:

And they've helped basically put that wildflower seed mixture together along with Xerces Society. So they've been helping us quite a bit with some of these projects we're working on.

Jacob Kelly:

That's good to know. I can't wait for these to be... hopefully y'all get some good research out of this and we can get those packets out to the public. I can't wait to try it all out.

Anthony Abbate:

Oh yes, me too-

Jacob Kelly:

Just cover these, cover every vacant lot with wildflower seeds.

Olivia Fuller:

Yeah, I'm ready for yards to be non-existent with the manicured lawn-

Anthony Abbate:

Oh yeah. I almost want to just go around with a salt shaker with wildflowers seeds and just be like-

Olivia Fuller:

I know.

Jacob Kelly:

Here have some-

Anthony Abbate:

Johnny Wildflowerseed-

Jacob Kelly:

Yeah. Well, all right, so here's the most important question that we're going to ask you today. And it's what's your favorite pollinator and why?

Anthony Abbate:

So that's a really hard question. I mean, that's probably one of the hardest questions. And I get asked that question all the time, and I really don't know how to answer it because there's so many different bee species here. Some of them are the size of a grain of rice, but when you look at them like in the field that they just buzz right past you, you just think it's like a fly or something. But then when you look at it under the microscope, you're blown away by how beautiful they are and just how different they are. But if I really had to choose and pick a species that's here in the United States, although I have to confess it is non-native. One of the species, one of my favorite species is the orchid bee.

Olivia Fuller:

Oh yes.

Anthony Abbate:

Yeah. So I used to live and work down in Davie or Fort Lauderdale, Florida. And my parents live in Sebastian, Florida. And anytime I go down there and visit them, I always check out the plants because the orchid bees are always buzzing around and they literally look like flying jewels. I mean, they are super iridescent green and their mating biology is just super fascinating. So the orchid bees, they're native to South America and Central America, and they happen to pop up in south Florida just like many other non-native things. And basically what they do is the males will go up to, say orchid flowers in their native range, but in Florida they're going up to different types of plants and maybe trees that are producing resins and oils on the outsides.

And the males will collect the oils, the fragrances, and their back legs are modified. They're super swollen. It looks like a boxing glove almost on their hind legs. And on that hind leg is just this little hole and it's a pore. And the males will basically collect all these fragrances and pack them into their hind legs and... which is super fascinating to me. They'll go up to the females and they'll hover in front of her and they'll literally use their wings and waft the fragrance towards her. And if she likes it, then she'll mate with them-

Jacob Kelly:

Then they're on.

Anthony Abbate:

Yeah. Yeah. So even though it's a non-native, they're super fascinating and really cool looking bees, so Google orchid bees-

Olivia Fuller:

And you can have these flying around in your backyard, I mean, that's a whole other reason to get out and scout and see what's flying around-

Anthony Abbate:

Oh yeah. Not here though-

Olivia Fuller:

True-

Anthony Abbate:

Not here though. Yeah-

Olivia Fuller:

But there's still... all of the bees have their little quirks and the things that they do-

Anthony Abbate:

Absolutely. I mean, they even have personalities. If you stare at bees enough like me in the field, you start to learn how they fly. Each species really has their own kind of personality, if you can believe it-

Olivia Fuller:

That's so amazing. Oh, I love this so much. Well, thank you so much for joining us today. So excited to be able to spotlight what the Bee Lab is up to and how it can help the farmers.

Anthony Abbate:

Yeah, thanks for having me.

Speaker 1:

This has been a production of Alabama Extension at Auburn University.