

**BONNIE WILLISON:**

I'm Bonnie.

**SYDNEY WIDELL:**

And I'm Sydney.

**BONNIE WILLISON:**

And this is *Introduced* from Wisconsin Sea Grant.

**CHRISTOPHER DEEGAN:**

We always joke in the emergency response realm that weird events always come on a Friday right before closing, and then you get to do it over the weekend. In this case, actually I got a little bit of a heads up on Sunday.

**SYDNEY WIDELL:**

It was July 2020, Christopher Deegan, state plant health director for Wisconsin, gets an email from Brian Hidelson from UW Madison. Brian said he's seeing these Facebook posts of people getting packages of seeds, in the mail, and it looks like they're coming from China. The people getting these seeds said they didn't order them.

**CHRISTOPHER DEEGAN:**

On Monday is when national media carried the story. And that's when email and phone lines just blew up.

**SYDNEY WIDELL:**

Wisconsinites who call Christopher's office are pretty direct and to the point. They usually say something like, I'm seeing things on my Facebook feed and on the news, and I think I have some of these seeds. And what do I do with them?

**CHRISTOPHER DEEGAN:**

I think in the first few days, there were over 1,000 of those calls just from Wisconsin. It got me to the point where it was obvious that we weren't getting anything done because we were either answering phones or individual emails.

**SYDNEY WIDELL:**

And it wasn't just Wisconsin.

**CHRISTOPHER DEEGAN:**

These seeds were sent to all 50 states, and to dc, and to Puerto Rico and Guam and American Samoa. And all our overseas territories as well. So there was no place that was not experiencing what we experienced here.

**SYDNEY WIDELL:**

So at this point, I'm feeling something like what is happening? Is this malicious, is someone doing this like be really destructive? And are these seeds invasive or noxious? So when the United States Department of Agriculture starts to put all these pieces together and get a sense of just how widespread this problem is, they tell the public to send their seed packets into their statewide offices. So in Wisconsin, people start sending their seeds to Christopher.

The seeds came in small international mail envelopes. Inside, there are tiny Ziploc bags of seeds. Sometimes they would have a label saying squash, corn or tomato, and sometimes they say really weird things like earrings or jewelry or something like that.

- We actually had to set up a separate bin in the mailroom to handle all the seeds, those that were coming in that didn't fit in our regular slot there in the mail room. And just looking at the seeds, they were really, really common vegetable flower and fruit seeds. Things that any of us would have in our backyard garden. Cucumbers, squash, tomatoes, sunflowers, zinnias.

Invasive species alone in the US cost us about \$40 billion a year just to address and respond to invasive plants has something that she was. And so it's a big concern to us when you have any kind of quantity of uninspected or uncertified plant material coming into the US.

**SYDNEY WIDELL:**

So are people all over the state receiving these seeds, or was it coming from just certain places? Here's Christopher.

**CHRISTOPHER DEEGAN:**

It was everybody. I got things wrong from little towns way up in Vilas County. I got stuff from Milwaukee, Madison, Eau Claire, that did not discriminate between urban and rural. It felt completely random too.

**SYDNEY WIDELL:**

As word started to spread about the seeds and concern grew and people got packages in the mail, they would start sending them into crisp. But sometimes the things they were sending in had nothing to do with the seeds at all.

**CHRISTOPHER DEEGAN:**

It got to the point-- this didn't happen a lot, but some people were so, I guess concerned by the reports of all these seeds coming from China. Once in a while we would get a package that was from China, but it wasn't seeds. People would just get this thing from Amazon and see that it came from China, and they would immediately send it to us.

And so because this was July of 2020, we got a lot of packages that had cloth masks, for example, that people had ordered but they didn't want to open the package so they send it to us. And then there were all kinds of weird things. It was their Baby Onesie. Somebody ordered the Onesie and instead of opening it, they sent it to us. I was like OK, well, thanks. I got your Onesie.

And in those cases, actually it was pretty simple because we had their contact information. We'd email them or call them and say, OK, thanks. Thanks for sending us your package. Turns out it's not seeds, would you like it back?

**BONNIE WILLISON:**

So you can have all of our packages forwarded to you just to check if they're seeds before we get them?

**CHRISTOPHER DEEGAN:**

Yes, but please don't

**SYDNEY WIDELL:**

I remember hearing about the seeds when it became a national news story last summer. And I don't know, Bonnie, if you got the seeds in the mail, what do you think you would have done with them? I think I would have been very tempted to plant them, I think.

**BONNIE WILLISON:**

Yeah, when I heard about this, I really wanted a packet just for reporting purposes, of course. I didn't get any. But if I did, I might have tried to plant them.

**SYDNEY WIDELL:**

I know I would have been so curious. I asked Christopher, if he was tempted to plant any himself, just to see what would come up.

**CHRISTOPHER DEEGAN:**

No, not at all. And that was actually one of the first notices that we put out to the public, was that hey, if you did receive these seeds, please don't let them. You don't know where they're coming from. You don't know where they were grown, what they might have been exposed to, what they might be carrying, which is like taking candy from strangers. It's like yeah, better be safe than sorry.

**SYDNEY WIDELL:**

During the height of all of this, Christopher's office was getting between 100 and 200 shipments of seeds a week from all across Wisconsin. So when his office received these seeds, they'd send them off to a national office for an official analysis. At the beginning, Christopher and his colleagues had some theories about why people were getting the seeds.

**CHRISTOPHER DEEGAN:**

One of the strange things about the seed event is that it happened so late in the year. So you think of planting season, and that's usually around April, May. But these seeds were being sent in June, July, and people were still getting in August and September.

So I would hazard a guess that some of it had to do with COVID and how we had a lot of shipping disruptions in the spring of 2020. So there may have been some people who had actually ordered seeds online and they probably ordered them for delivery in the spring but because of the shipping disruptions, they didn't get them. And they weren't received until later in that summer. So August through the end of October, maybe into November, was the biggest crunch.

**BONNIE WILLISON:**

So where exactly were these seeds coming from?

**SYDNEY WIDELL:**

This was the weirdest part to me. All of the seeds were being sent from the same four to five addresses in China.

**BONNIE WILLISON:**

That's super strange.

**SYDNEY WIDELL:**

Right.

**BONNIE WILLISON:**

And then where any of them harmful? That's what I would be worried about.

**SYDNEY WIDELL:**

Yeah, so Christopher walked me through some of the data.

**CHRISTOPHER DEEGAN:**

For Wisconsin, over the 1,000 or so samples that we got in, only about 40 of them had any issues of concern, and those were almost all federal noxious weeds. So what we would see was like maybe in a packet of squash seeds, there'd be one or two an invasive grass some sort. Most of the federal noxious weed seeds that were identified were interesting enough. I mean, aquatica, Dodder, Cuscuta species, and poacea.

**SYDNEY WIDELL:**

If you're not familiar with plants, I'm definitely not too savvy on this. Poacea are a family of grasses. Cuscuta is this little orange vine that becomes a parasite on its host plant. And they're both considered to be federally noxious weeds.

But my ears perked up when I heard aquatica. Ipomoea aquatica is water spinach. So water spinach is a floating aquatic plant that people all over the world eat for food actually, but it spreads really quickly here in the US so it's on the noxious weed list. It's native to a warmer climate, so Christopher seem to think it would be able to survive maybe in Texas or Florida but probably not in Wisconsin. But you never want to risk something like that, and besides, it's prohibited here.

**BONNIE WILLISON:**

So why did this happen, like, why did these four or five places in China send all these seeds, these random seeds?

**SYDNEY WIDELL:**

So one thing that might have happened is some people ordered seeds and then forgot about them. And COVID caused all kinds of shipping delays, and maybe that's why seed started to arrive very late into the season like July and August when people had like put it out of their mind. But then there's this other theory that the seed shipments were part of something called an internet brushing scheme.

**CHRISTOPHER DEEGAN:**

In USDA we actually found no evidence that anyone was trying to intentionally harm American agriculture with these shipments. It seemed to be part of what's called an internet brushing scheme, which is something that an internet seller can undertake in order to try to boost their ratings. And this usually involves sending little packets of relatively inexpensive material to fake buyers.

**SYDNEY WIDELL:**

From my understanding, what brushing means is if you're a company that has a listing on Amazon or something and you want your listings to be higher and like the search queues, when people search things on Amazon, that has to do with how you're rated. And one factor that goes into ratings is just how many packages you send out. But in order to have a valid delivery, you have to send this packet, you have to send packages somewhere.

So sometimes this happens, and companies will literally just send empty boxes places. And in this case, they were sending seeds which can grow and become invasive. So that was one theory. Does that make sense?

**BONNIE WILLISON:** Yeah, and I'm impressed with these-- the people behind this scheme. Because it's just like how do you even go about getting thousands of names that are in every single state and sending out this many packages? It's so impressive.

**SYDNEY WIDELL:** Right, and like how does your-- how would someone's name end up in this company's address book?

**BONNIE WILLISON:** And why didn't it rick of any? Like, why didn't we, investigative reporters, we obviously could use this content, like why weren't our addresses in there?

**SYDNEY WIDELL:** I feel left out, honestly.

**BONNIE WILLISON:** Yeah.

**SYDNEY WIDELL:** Eventually Christopher's office stopped receiving so many shipments of seeds and also Onesies and other packages. And Christopher was able to get back to his usual work.

**CHRISTOPHER DEEGAN:** This was unique in that this is the first time we had internet origin seed coming in on a national scale. And oftentimes, we have one offs that will respond to somebody get something weird, and maybe once a month, once every couple months, we'll get a call like this. But this is the first time we saw it happening all across the country and within a really short time frame. But I'd also like to say that part of the reason we do our jobs and why our jobs are actually pretty interesting is that we never actually know what new event we have to respond to. So we learn to expect the unexpected.

**BONNIE WILLISON:** About nine months later, the country got another unexpected surprise. An aquatic invasive species was showing up in spots that no one thought to look. Zebra mussels strike fear into the hearts of water people. They spread really quickly. They're almost impossible to remove. They clog pipes and they're really sharp when you step on them. But in March of 2021, a zebra mussel was found hitchhiking on something that was a lot cuter. I've seen those on TikTok.

**SUBJECT 1:** That's cute. Really quite cute. Yeah, I've seen it in stores, yeah.

**BONNIE WILLISON:** Yeah. That was my family and some family friends. We were on a hike. And I was showing them pictures of moss balls.

**SUBJECT 2:** Moss balls.

**SUBJECT 3:** Moss balls.

**WESLEY DANIEL:** My role was getting the ball moving.

**BONNIE WILLISON:**

Wesley Daniels coordinates the non-indigenous aquatic species database run by the US Geological Survey or USGS. They collect reports of non-native species throughout the country that people might spot in different water systems. Wes was in his Florida home on March 2, 2021, and he gets a surprising notification on this database. Someone had reported a zebra mussel, and this would have been out of the ordinary to see like a report from the Great Lakes region.

**SYDNEY WIDELL:**

Yeah, there's so many zebra mussels in the Great Lakes.

**BONNIE WILLISON:**

Yeah, exactly. In 1988, three young researchers were studying the bottom of Lake St. Clair, which connects Lake Erie to Lake Huron. And they were monitoring and they pulled up some strange mussels that were then identified as the zebra mussel. Large international ships will take in water when they're in say European ports, and then when they get to the Great Lakes, they release that water. And they also release whatever tiny hitchhikers are surviving that international journey.

Zebra mussels and, their cousin, quagga mussels didn't have any predators in the lakes. Now 30 years later, they are a super dominant species. Mussels feed by voraciously filtering tiny plants and algae out of the water. And you might think, isn't it good to have them filtering the water, like making it really clear? But mussels filter out the nutrients needed by all the other species in the lake, which can leave other lake dwellers like larval fish scrambling to find food. In the Great Lakes, the water clarity isn't a sign of a healthy lake. It's actually the opposite.

In some conditions, mussels can now filter all of Lake Michigan in less than two weeks. It's only been about 40 years since zebra and quagga mussels were introduced to North America, and we're still trying to figure out what this new reality means for the Great Lakes.

Meanwhile, people boating and traveling have spread them farther than the Great Lakes like into the Mississippi River basin, all the way down the Mississippi River to Texas and Louisiana. But the Western half of the United States is still really relatively free of zebra mussels. And ironically, the database that we just talked about, it was started because of the zebra mussel introduction.

In 1990, the USGS wanted to be able to nationally track new occurrences of species. And so fast forward to March 2021, West got a zebra mussel report from Seattle. And a zebra mussel wasn't seen in a lake or a river or a pond, it was seen in a pet store on a moss ball.

**SYDNEY WIDELL:**

OK, so what's a moss ball?

**BONNIE WILLISON:**

Right, so moss balls aren't actually moss, they're algae. They're these spherical green balls. And people put them in their fish tanks for decoration. They do have some natural filtration abilities, so they can help filter your tank a little bit I guess. Or you can even just keep them as a pet in a jar. Like check out this picture.

**SYDNEY WIDELL:**

I'm checking, though I'll pan Oh my God, it's so cute. It's just a little-- they're just a little ball with moss at the head of it. People were googly eyes on them. That is so funny. I could see getting attached.

**BONNIE WILLISON:**

People just will keep a moss ball that's floating in the middle of a little jar, and this company puts little tiny cowboy hats on them. So this moss ball zebra mussel report, it came from a Petco in Seattle. So Wes gets this report and he looks at the picture attached, and he was like, yeah, that's definitely a zebra mussel on there. So the next question is, is this incident more widespread than this one pet store? So Wes decides to go to his local pet store in Gainesville, Florida.

**WESLEY DANIEL:**

So when I went into the pet store, I was not expecting to find anything. I thought it was a needle in a hay stack situation. And initially with the first sighting in Seattle, I thought maybe this was just a fluke. But the first moss ball I picked up, which is in a small isolated jar, it's in own water, had a zebra mussel on the outside. I didn't have to open it. I didn't have to separate the moss out or the algae out to look for it.

The zebra mussel that I found was just on the outside. Zebra mussel are small, triangular bivalves. They're about the size of your nail, so maybe you're picking out your thumb. They're triangular in shape with dark lines on them, that's where they get the name zebra. And they have these very distinct lines that give them the zebra stripe pattern.

I reported it to the manager. She was very understanding, and she withdrew all the samples, all the moss balls off the shelf because she understood the danger from them.

**BONNIE WILLISON:**

Wes has gotten to talk to this person who reported the zebra mussel, this pet store employee in Seattle, a few times since he got that notification. He says the sighter had seen these mussels since January. So if they were being imported in January, they had gone undetected or unreported for at least a few months out there on the shelves. The first sighter had tried to report the mussels a few times.

**WESLEY DANIEL:**

She was persistent, I'll say that, because she had tried to report it to other groups and failed. And she found our database through a Google search and reported it to us.

**BONNIE WILLISON:**

She had tried to report this to a few environmental groups. But I guess they weren't invasive species focus groups and probably didn't know what to do with this information.

**WESLEY DANIEL:**

It would have been easy for any of us to do that initial report, feel like I did my job and they didn't step away and just not do anything else. She was really, really dedicated to making sure that this information got into the right hands. And so now she needs a lot of credit for that.

**BONNIE WILLISON:**

So Wes got home from his local Gainesville pet store, and he was like, I've got to alert state and federal agencies about this. And the ball was rolling, so to speak.

**AMY KRETLOW:**

When I saw the email, I first knew that they were out in Western states. But I wanted to make sure that it wasn't reaching out here in Wisconsin.

**BONNIE WILLISON:**

Amy Kretlow remembers being included on an email chain on March 3, the same day that, Wes notified the Fish and Wildlife Service about these sightings. Amy is with the Wisconsin Department of Natural Resources and she's responsible for responding to new aquatic invasive species in the southern half of the Lake Michigan basin so this email was troubling to her.

**AMY KRETLOW:**

I did not know one thing about moss balls before I heard about this. And I worked in Madison for about nine months and organisms and trade, and I would visit pet stores, but even at that point, I didn't even know what a moss ball was. I looked for snails and plants at that time, that moss ball.

**BONNIE WILLISON:**

Amy's first instinct was the same as the one that Wes had.

**AMY KRETLOW:**

I went to visit my local PetSmart, and when I went in, I did find the moss balls for sale. And they had zebra mussels on there.

**BONNIE WILLISON:**

But the thing was, these moss balls weren't just going to Wisconsin and Florida and Seattle. Moss balls infested with zebra mussels were soon found in 41 states in all Canadian provinces.

**WESLEY DANIEL:**

This is the first time we've had this kind of national importation crisis.

**SYDNEY WIDELL:**

The first time they've had a national importation crisis that they know of, which is scary to me. Was this really the first time something like this has happened, or is it just the first time we've noticed something like this has happened? On the one hand, maybe it is really because the internet is only increasing access to non-local plants and animals. So the opportunity for something like this to happen is only going to get greater.

**BONNIE WILLISON:**

Right. And we did a whole episode about invasives online. You can listen to episode seven. It's about how as more people get connected, there's just more opportunity for plants and animals to be shipped across the country in one day.

**SYDNEY WIDELL:**

It's probably a good sign. Well, I mean, it's definitely a good sign that this guy detected and gives me hope, yeah.

**BONNIE WILLISON:**

Right. Yeah, this could potentially be the first time that this has happened, the first time that invasive species has been a hitchhiker in a different industry that we weren't thinking about. But I feel like it probably won't be the last. But this was a national crisis, and it is a really big problem. Because of the zebra mussels, what memories do you have about Zebra mussels growing up near the Great Lakes?



**SYDNEY WIDELL:**

Well, I do remember walking down the beach and like just having your foot completely cut up because of how just dense the zebra mussels were on the sand. And now I know the algae blooms that I remember from growing up near Lake Michigan. That might have something to do with zebra mussels too.

If you go back and listen to episode 16, The-lake-on-the-edge, I talked to Dick Lathrop from UW Madison Center for Limnology, and he gave me a really thorough explanation of how zebra mussels shunt nutrients from the middle of the lake into the shoreline. That sets in motion the series of changes in a lake food web. And it really favors bottom feeders like carp and catfish maybe near the shore, and then creates way less optimal conditions for fish like walleye and perch way out in the middle of the lake. So yeah, that's what I've heard.

**BONNIE WILLISON:**

Yeah, and on top of that, each female zebra mussel lays one million eggs per year.

**SYDNEY WIDELL:**

So it just gets out of hand so fast, yeah.

**BONNIE WILLISON:**

It really does. Each of these eggs once it hatches, it goes through this larval stage. The larval stage of a zebra mussel is this tiny, tiny microscopic organism called a villager. They're about the width of a human hair, so they're so tiny. And they swim, they're free swimming while they drift along with the current. So once the zebra mussel lays eggs, that water that contains the villager can be moved anywhere. They can float to other parts of the lake. So you can see how that can get out of hand.

**AMY KRETLOW:**

My fear with this is that people would buy the moss balls, putting them in their tanks. And then when you do have an aquarium set up, you have to do water changes and you don't know what villagers could be in that water cycle when you're doing a water change. And that could be going down, drains into other water systems. And then there's also, if you have a tank and you decide that you don't want your goldfish anymore, people just release those in streams and lakes. And they could be-- there's the moss balls on there that have zebra mussels on, those could be released that way.

**SYDNEY WIDELL:**

I've heard a lot of the businesses along the Great Lakes having to spend so much money each year to stop zebra mussels from clogging their pipes. So could this happen on things like the back end if you dumped your tank out in your house and it had villagers in the water?

**BONNIE WILLISON:**

Right, that's a great question, one I was curious about too because in the Great Lakes the zebra mussels will just colonize any hard surfaced. So they'll go into power plants and they'll just clog the pipes. So it's like could this happen in someone's house? It turns out that zebra mussels in the Great Lakes, they're getting this constant supply of food and that allows them to get to this really big population.

And so from what I'm seeing, there probably wouldn't be enough nutrients going down like someone's kitchen drain to sustain a population of zebra mussels.

**SYDNEY WIDELL:**

Yeah.

**BONNIE WILLISON:**

But like Amy said, if that water in your fish tank or in your moss ball jar gets out into your backyard pond, you're backyard lake or something, Wisconsin has 15,000 lakes, and only a fraction of those have zebra mussels right now. So only 282 of our lakes and rivers have already seen a zebra mussel introduction. So there's a lot of lakes out there that we can still protect.

And taking boats and gear between lakes is always just going to be a risk unfortunately because zebra mussels, even if you take them out of water-- they touch your boat, take it out of water, they can survive for days. So the only good way to prevent moving zebra mussels that might be introduced in one lake to a different one is to clean off your boat and gear, drain all the water out of it, and then let it dry for five days.

Another problem, though, is that moss balls could carry more than just zebra mussels, like viruses and organisms and even other types of mussels, which is stressful. So it's really concerning that zebra mussels and more could be hitchhiking into pet stores all across just the Great Lakes region and also the whole country, the whole continent.

Back in Sheboygan, Wisconsin, Amy Kretlow figured the first thing she needed to do was see which pet stores in Wisconsin had moss balls, and which of those moss balls had zebra mussels, and to get those off the shelves ASAP. Petco was the known variable because Petco was the chain store that they were first found in, so Petco already knew that this was happening, they were pulling moss balls and PetSmart was discovered as well. So they were already pulling the moss balls. But what about all the other pet stores?

**AMY KRETLOW:**

With pet stores, they're unlicensed in Wisconsin and we don't have a great way of really tracking what pet stores there are in Wisconsin. So it's really-- that was my biggest fear of how can we contact all these stores, and that's when I reached out to our partners, our County AIS partners and asking for their help and their local knowledge of knowing what pet stores are in their counties.

**BONNIE WILLISON:**

We talked to Amy about a month after this moss ball incident came to light. And she said she was still having volunteers come back with data sheets from pet stores throughout the state.

**SYDNEY WIDELL:**

So did they find any?

**BONNIE WILLISON:**

After the break, I'll tell you about that.

**SUBJECT:**

Water research mysteries. Teachers connecting kids with the Great Lake in their communities. Erosion and dangerous currents, these are just some of the stories offered by Wisconsin Sea Grant and the University of Wisconsin Water Resources Institute. A monthly podcast series, *Wisconsin Water News*, highlights stories previously available only in-print from these programs. Series narrator and science communicator Murray Zhukov brings the stories alive by featuring in-person and phone interviews with the people behind the news. Listen and subscribe to *Wisconsin Water News* on iTunes, Spotify, Google Play, or at [seagrant.wisc.edu](http://seagrant.wisc.edu).

**BONNIE WILLISON:**

So back to Amy Kretlow of the Wisconsin DNR.

**AMY KRETLOW:**

In Wisconsin, we weren't doing an effort of getting the moss balls if there was any in the pesters. It was just more of an effort of getting the information out there. Out West, I do know that they did have efforts where I believe law enforcement staff or warden staff would go and actually collect the moss balls, and they had thousands in evidence. But we weren't going to do that route.

**BONNIE WILLISON:**

Amy estimated that there was probably about 100 pet stores in Wisconsin. And she sent volunteers to all of those, excluding the Petco and the PetSmart that she already knew about. And out of those 100 stores, about 60% sold moss balls.

**AMY KRETLOW:**

60% of the pet stores would carry moss balls. But none had zebra mussels on them.

**BONNIE WILLISON:**

So no independent pet stores had these contaminated?

**AMY KRETLOW:**

Correct.

**BONNIE WILLISON:**

Thankfully, Amy's volunteers didn't find any zebra mussels out on the shelves, which must have been a real relief.

**AMY KRETLOW:**

The pet stores were very actually very happy having the county partners come in and tell them because they were hearing through distributors about this. But they were happy to hear a local contact came in and actually talked to them about it.

**BONNIE WILLISON:**

For the time being, moss ball importation has been stopped. When they resume again in the future, the Fish and Wildlife Service has a plan to carefully check shipments that come into the country.

**AMY MCGOVEN:**

When they're really small, we call villagers, when they're larval mussels, you can't see them. And so we test for their DNA.

**BONNIE WILLISON:**

I talked to Amy McGovern from the Fish and Wildlife Service. Fish and Wildlife Service played a huge role in this issue because they have a law enforcement branch that works with airports and looks into, investigates the transport of invasive species.

**AMY MCGOVEN:**

It's technical. And I'm not a geneticist, but where we're actually testing them with handheld units. So you're able to wash a out of moss balls with water and then test that water for zebra mussels. And that would really be picking up any type of material that would come from a zebra mussel. So even if they're really tiny and you can't see them, this device would pick up their DNA.

**BONNIE WILLISON:**

Amy helped push out the official message about moss balls. When this first happened, they're like we need to get this message out here of what to do with your moss ball if you've got one. Their slogan is, destroy, don't dump.

**SYDNEY WIDELL:**

Aggressive.

**BONNIE WILLISON:**

Two exclamation points in that three-word slogan.

**AMY MCGOVEN:**

The take home message there is, you don't just throw your mouse ball away. You put it in a bag or freeze it or use bleach. The website covers what to do in the event that you think you might have one, whether you know it's infected or not. But if you're a moss ball owner, please be vigilant and destroy, unfortunately destroy your moss ball because it could really harm our environment.

**BONNIE WILLISON:**

Looking back at this incident, I asked Amy what memories would stick with her.

**AMY MCGOVEN:**

I did learn from a colleague that moss balls again, can be used in a variety of different ways. And are in fact, passed down sometimes from generation to generation. And someone was talking within our group about a moss ball that was 200 years old. And I laugh now because I just-- I didn't know a lot about baseball before this happened and now know a lot about moss ball.

**SYDNEY WIDELL:**

But do you have to destroy your 200-year-old moss ball?

**BONNIE WILLISON:**

You only have to destroy your moss ball if you purchased it after February 1st of 2021. And you can look at the Fish and Wildlife Service's website for details about how to dispose of your moss ball.

**AMY MCGOVEN:**

Aquatic Invasive Species coordinators, we're very committed to what we do. And many of us got in the car and drove to our local pet store to see if they were selling moss balls. I think that commitment in that passion for what we do is evident in our daily routines too.

**BONNIE WILLISON:**

Back at the beginning of the story, we talked about another first of its kind national importation crisis-- the mystery seeds. For most of the summer of 2020, Christopher Deegan's office and USDA facilities around the country were overrun by piles of unsolicited seeds. Now, Christopher has had some time to look back on this incident.

**CHRISTOPHER DEEGAN:**

In this case, because it was a national news event and everybody was involved, I got a chance to talk to people I don't usually work with like rural toastmasters would call up and say, hey, we're getting people are bringing these seed packets back to us. What are we supposed to do with them? I would get calls from County Sheriff's Office because some folks were taking them down to their local police station.

I even got a chance to work with the local FBI office in Milwaukee, because when you have something of this quantity coming in, there's always concern. It's like, OK, what's behind it all? What's the actual risk of what we're seeing?

**SYDNEY WIDELL:**

Christopher also wants to encourage everyone to report any strange or unexpected things that you might see growing around you.

**CHRISTOPHER DEEGAN:**

Whenever people have questions about whether they should be buying something from somewhere, want to know whether it's legal, if it's allowed, we have to answer those questions. We also answer questions if people see something strange in their backyard, or in their garden, or in their woods. With an insect that they've never seen before, a plant that's behaving strangely, maybe a disease that showed up on one of their garden plants that they've never seen before, we're also here to answer those questions.

**BONNIE WILLISON:**

The seeds made the journey over from China. The moss bottles were shipped in from Ukraine. When species and seeds like this can be moved and toted from one continent to the next in a matter of days, what can we do to stop the spread of nuisance species?

**CHRISTOPHER DEEGAN:**

The big thing is to be aware of where your purchases are originating. And yeah, whether it's moss balls, whether it's seeds, whether you're buying-- growing baby trees, any kind of live material, especially if you're buying it over the internet. As a consumer, you should really do your research and then find out where it's coming from. I mean, there's a trend to buy locally, and so that would really help.

**BONNIE WILLISON:**

Arguably zebra mussels could still be on shelves all over the country if the Seattle pet store employee hadn't been persistent with her observations. She saw zebra mussels in a pet store and reported it, and then nothing happened. And then she reported it again. Finally, she reported it to the non-indigenous aquatic species database and Wes knew what to do with the information.

**WESLEY DANIEL:**

If you do find something, even if you're not sure if it's non-native or not, it's OK to report it. Take a photo, take accounting of where you are, the location to your best of ability, we're always happy to help.

**BONNIE WILLISON:**

In the episode description below, you'll find links to report the things that you see and get the answers that you need.

**SYDNEY WIDELL:**

*Introduced* is produced and hosted by Bonnie Willison and me, Sidney Widell.

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