SYDNEY WIDELL: Rebecca Schroeder has been having this recurring nightmare for the last four years.

REBECCA SCHROEDER: Every once in a while, there will be a little dream.

SYDNEY WIDELL: She'll be walking on the beach near where she lives in Sault Saint Marie, Ontario. And then suddenly--

REBECCA SCHROEDER: And I see someone holding like, a grass carp, but I'm like, no!

SYDNEY WIDELL: She's thinking where did this carp come from? What am I supposed to do about it? Her heart is racing and it's really scary.

REBECCA SCHROEDER: I think I just go into like, a crazy mode of like, oh my God! You need to report that! And, oh my God, maybe you should be reporting it to me. That's me. What do I do?

SYDNEY WIDELL: That's because Rebecca is the Asian carp project manager at the Invasive Species Center in Sault Saint Marie in Ontario, Canada. Her job is to raise awareness about Asian carp around the Canadian shores at the Great Lakes.

Sault Saint Marie is on the Saint Marys River, which connects Lake Huron to Lake Superior, and it's also the border between Michigan's Upper Peninsula and Ontario, Canada. And when I talked to Rebecca, it was still winter there.

REBECCA SCHROEDER: I don't know how to convert this into Fahrenheit, but it's minus 20 here today Celsius. I'm not really sure what that equates to in US temperature. It's very cold.

You walk outside and it's just like, you know when you like pull something out of like, the deep freezer, and it like, hurts your teeth? That like, ice? That's what it sounds like when you walk on the ground here. And it's like, you walk out, and your like, nose freezes immediately.

BONNIE WILLISON: That is really cold.

SYDNEY WIDELL: That's-- I think that's like negative 4 in Fahrenheit.

BONNIE WILLISON: Sault Saint Marie in Ontario feels like it's a world away from Chicago, where the electric carp barrier is. It feels like the big head and silver carp invasion in Canada is such a long way off. But I guess we don't really know?

SYDNEY WIDELL: So it's not only the jumping carp that Rebecca is concerned about, though. There's also evidence that grass carp are spawning in rivers in Ohio that feed Lake Erie. And it's also possible that that sort of migration could be bypassed completely if a carp was just accidentally released in the water on the Ontario shores of the Great Lakes. And Rebecca said that that last scenario is probably the most likely way that a carp would make it up that far north.

BONNIE WILLISON: So the bighead and silver carp population front is in the US in Illinois. And Rebecca is more than 600 miles away in a whole other country.

SYDNEY WIDELL: Right.

BONNIE WILLISON: It makes me think about how carp are an international problem like, when a fish can just migrate between two countries. And it opens up this whole political dimension for stopping carp and not allowing them to migrate like, into the Great Lakes.

SYDNEY WIDELL: Yeah. Like, international politics too, not just like, states having to work together. It's like actually countries having to negotiate like, where their carp are. And I could imagine being in Ontario and hearing that carp were responding in tributaries to Lake Erie on the American side, and just feeling so frustrated because you truly can't do anything about it other than just preparing, which is what Rebecca is doing. And most of her work is centered around outreach and teaching people how to identify the four species of invasive carp before they arrive in Canadian waters.

REBECCA SCHROEDER: But we know-- you know that like, once an invasive species establishes, it's very, very rare that you'll ever completely remove it from the system. And we know also that prevention is so much cheaper than it is to control something. The amount of money people spend on control annually, for things that are already here that we

have to control, it's a lot more than what you would spend on trying to prevent something from establishing.

SYDNEY WIDELL: She goes to events and answers people's questions about carp. She helps run an Asian carp aquarium exhibit at the Toronto Zoo. And she's even used fishing Instagram influencers to help get the word out about these species.

BONNIE WILLISON: Fishing Instagram influencers? Like, I don't think I'm familiar with them.

SYDNEY WIDELL: If you go on Instagram, I think her handle is she loves to fish. She's really cheerful and catches these enormous fish, and is just like, a really engaging person. And then she did this whole sponsored carp content. She was posting all of this educational content about Asian carp and doing like carp, identification stuff.

BONNIE WILLISON: That's such a creative idea.

SYDNEY WIDELL: I know. They have this YouTube video where she's walking around the Toronto Zoo explaining what the carp look like and what they could do if they ever made it up into Ontario and the lakes in that region.

BONNIE WILLISON: Yeah.

SYDNEY WIDELL: And then the rest of her content is like, her taking her friends out fishing or winning fishing tournaments or photos of her dog. And then there's just this Asian carp content. Yeah. And Rebecca said that that was pretty successful, and they got a lot of traction.

BONNIE WILLISON: That's amazing.

SYDNEY WIDELL: I asked Rebecca what she thinks the day would be like if carp ever made it as far North as Sault Saint Marie.

REBECCA SCHROEDER: It's kind of like, a daunting job every day though, to like try and protect the Great Lakes from something so scary like Asian carp, but it's really worth it. I do get

anxious that like, they'll pop up and-- but I really hope not. I'm really optimistic that they won't and that we're doing really good work.

BONNIE WILLISON: As far as working with the US and other partners go, Rebecca sounded positive.

REBECCA SCHROEDER: I mean, all invasive species outreach and all invasive species work in general, I think everyone is doing really great work. And we're all doing our best. So I'm really optimistic.

BONNIE WILLISON: I'm Bonnie.

SYDNEY WIDELL: And I'm Sydney.

BONNIE WILLISON: And you're listening to *Introduce.*

[MUSIC PLAYING]

So we've talked a lot about Asian carp in our own backyard, like here in the Great Lakes, and even in the South. But carp haven't actually been here for very long. They've been a problem for about 40 years. And when I say a problem, I mean that you can just go on Google and find articles talking about the carp rampage and the most hated fish on the Mississippi, American's poison, and the carp crisis.

SYDNEY WIDELL: That's so dramatic.

BONNIE WILLISON: It is. Like, you can really tell what people feel about these fish. But on the other side of the world in China, people have been fishing for them and farming them for thousands of years. Remember how I talked briefly with Duane Chapman, a research fish biologist for the US Geological Survey?

SYDNEY WIDELL: Yeah. The guy who worked with carp in Hungary on Lake Balaton?

BONNIE WILLISON: Yes. That's just the start of Duane's research on carp. He's one of the leading carp experts in the US. And if I had questions about Asian carp, Duane would be able to answer them. And what I really wanted to ask about was silver and bighead, grass and black carp in their native range. While they're reviled here, how do people see them in China?

DUANE CHAPMAN: There are a lot of potential definitions for the term Asian carp. One, in the United States we very often talk about Asian carps, we mean those four species, the bighead carp, the silver carp, the grass carp, and the black carp. But there are a lot of species of carp native to Asia. And there are other carp species here in the United States and Canada that also have the Asian origins, and that our present here that we don't call Asian carps.

And then on top of that, there's another term is somewhat derogatory. And it can be culturally insensitive, because those four species are species of very high importance. And they're actually-- instead of being reviled-- they're actually very, very important and very loved in Asia.

Sometimes you'll hear in this country that the silver carp would be a delicacy. There was not so much a delicacy, as a staple. It's a relatively low cost fish, but very, very important in Chinese cuisine and in the culture.

BONNIE WILLISON: This kind of blew my mind hearing about how different this fish is viewed after knowing like-- talking to people about it here in the US. And I definitely wanted to hear more. So I got us a meeting with Dr. Yushun Chen, a scientist who studies fish and aquatic habitats.

YUSHUN CHEN: So, I'm Yushun Chen, from Institute of Hydrobiology Chinese Academy of Sciences.

BONNIE WILLISON: We had a nice evening chat with Dr. Chen, but it was in the morning for him. He lives in Wuhan, China, close to the Yangtze River.

SYDNEY WIDELL: What does it look like for someone who's never been there before? Like, if you are going to go for a walk down by the river, what would you see?

YUSHUN CHEN: Yeah. I guess the best thing is to bring you guys next time you here. But I can tell you a little bit right now. It's just the below the dams, the Gezhouba dam and the

Three Gorges. That's the [INAUDIBLE] at the [INAUDIBLE]. So we are just downstream of those dams.

Very huge, you know. And also the more downstream is very clean because of the dams, you know. You're in the sediments.

SYDNEY WIDELL: I like, heard about the Three Gorges Dam, but I did look up a picture of it after we talked to him. And it's so big. Like, I couldn't comprehend what I was seeing.

BONNIE WILLISON: Yeah. Isn't it one of the biggest dams in the world?

SYDNEY WIDELL: Yeah, I think it is. I read NASA scientists calculated that the shift of water mass stored by the dams would increase the length of Earth's day by 0.6 microseconds and make the Earth slightly more around in the middle and flat at the poles. It holds back this enormous volume of water and I thought that's so crazy.

BONNIE WILLISON: What?

SYDNEY WIDELL: Yeah. So that's the dam to set the scene.

BONNIE WILLISON: Yushun started studying carp because they're a really important species, both culturally and economically. And he explained that in his region, carp are a diet mainstay.

YUSHUN CHEN: So, especially in the past, and are still recently, people here view the silver carp and big carp like you guys view chickens.

BONNIE WILLISON: For whatever reason, people in America have a way different relationship with these fish, and if anything, will be more likely to use them in bait or as dog food. But you don't hear about people eating them like you do in China.

SYDNEY WIDELL: But the other reason that Yushun started studying carp was because they are actually seeing pretty significant decreases in carp population due to fishing pressure and also habitat loss across China.

BONNIE In the wild, it sounds like carp populations are really on the decline. But farmers

WILLISON: there have learned to raise them in aquaculture ponds. Over the past 1,000 or more years, silver, bighead, black, and grass carp have been farmed in lakes and rivers around China. And Duane was telling me that fishermen there would fish the baby carp out of the rivers and bring them to these aquaculture ponds where they could tend to them. But that changed in the 1960s when scientists discovered how to get the carp to spawn in these ponds, so they no longer had to go out and get the fish and bring them back. So that made things a lot more efficient.

DUANE CHAPMAN: And when they discovered in the 1960s how to spawn the fish, they could put just the right number of each one of the four species into a pond and get incredible growth rates and raise a tremendous amount of fish in a very small area.

SYDNEY WIDELL: Wow.

DUANE CHAPMAN: And the four fish feed in different-- they feed on different things, you know? The grass carp eats vegetation. The silver and bighead carp eat plankton, but they eat different classes of plankton. And then the black carp eats snails and mussels. And so you could raise all four of them in the pond and they would eat different things and not compete too much with each other. And so the abundance of the amount of flesh that they could produce in these ponds really went through the roof.

SYDNEY WIDELL: I never realized how well the four species exist together. I feel like that's something that's super ignored from when we talk about these fish here in America. But I don't know. There's something like, really wholesome feeling about how balanced that is.

BONNIE WILLISON: It is. Like, I kind of thought that these four species being called the Asian carp in America was kind of like, they were like either randomly placed together in this group or they all kind of were introduced at the same time here, so we labeled them all the same. But it was really cool to hear that they kind of co-exist super well together and they've been farmed because of that.

SYDNEY WIDELL: Yeah.

BONNIE WILLISON: So meanwhile, also around that same time in the 80s, these same four species of fish were escaping the ponds in the US, and they were starting to move around. And

our country had this new problem to solve. But we didn't have any experience with these new fish.

YUSHUN CHEN: Same species, but a different point of view on both sides.

SYDNEY WIDELL: Did anyone in the US think of learning how these fish were being caught back in China? Because it seems like we could really have used that knowledge to help us understand how to manage carp better.

BONNIE WILLISON: Yeah. There actually hadn't been that much collaboration, because this was kind of during the Cold War years when carp were like, becoming a problem in the US, and our two countries weren't doing much research together. And it's also interesting-- it just-- I love thinking about how global politics impacts invasive species. Like, you know how Yushun was talking about how the carp that were introduced to the US around this time actually probably came from like Southeast Asia, not China, because like, at that point, China and the US weren't even like doing any trade?

SYDNEY WIDELL: Yeah.

BONNIE WILLISON: And Duane didn't start contacting researchers in China about carp until pretty recently when he came across this paper written by a colleague. The paper mentioned a method that they use in the shallow lakes in China where they can catch 80% of fish on a regular basis. And to Duane, that was really intriguing. And Duane thought I've got to go to China. So he started contacting Chinese colleagues, like, fish people that he knew. And Duane's colleagues from Wuhan welcomed him and his team of US scientists.

What are their reactions to our current problem? Because I don't know, just to imagine there's just such a difference between how we treat these species in our two countries.

DUANE CHAPMAN: Yeah. You know, it's hard for them to believe that we have all the fish and we consider it a problem. And we probably have more of these fish, at least in the wild, than they do in the wild in China. They do raise a lot of the fish and farms, right? But in terms of wild fish there, we probably have more than they do by a great, great number.

| the other thing that they see on the television and stuff is this jumping behavior that they have here and when they jump out of the water and get people in boats and all that. They find that little difficult to believe, that it's not a hoax, because they don't behave that same way in China.

BONNIE WILLISON: Isn't that wild that they don't jump in China? Like, that's kind of the thing that everyone knows about bighead and silver carp here is like, they're the jumping fish. They hit people. Isn't that weird?

SYDNEY WIDELL: They jump! Yeah. That's the whole thing! They slap people in the face! That's like, a fundamental part of the carp experience. I can't believe that that doesn't happen in China.

BONNIE WILLISON: Exactly. And Duane kind of said they don't really know why.

SYDNEY WIDELL: Yeah. Yushun said that one theory is that the carp are just so much more dense here, that where in these lakes in China, they have way more room to spread out. And maybe they're-- I don't know. There's something like, stressful about-- there is something about being in such close proximity to all these other fish that like, triggers this behavior that would never happen and like, the population densities you see in China.

BONNIE WILLISON: Yeah. Another theory that Duane had was just that like, the carp that happened to be imported to the US were just particularly jumpy, and then they started reproducing. And I thought that was a really funny theory.

SYDNEY WIDELL: The jumping--

BONNIE WILLISON: They're just really jumpy. Like--

SYDNEY WIDELL: They have the jumping gene.

BONNIE WILLISON: Like, there are certain humans that are like, good at acrobatics and stuff. Yeah. So Duane has been to China now four times. And he ended up meeting up with Yushun.

And since then, they've been doing research together. And they've formed this partnership that they are still collaborating today.

Now they're part of a network of researchers who study and compare the Yangtze River and the Mississippi River, because both of these rivers are really important to their countries, and they also both have carp, but in really different contexts. Their interdisciplinary work addresses ecological and economic challenges on both of the rivers.

YUSHUN CHEN: I guess the things from both sides we like a lot is the real exchange. You know, I mean, people, they come to here with the rivers and lakes. We go to there with the rivers and lakes and talk with the local people. That's a very important part. And we love it a lot.

BONNIE WILLISON: So one thing that they were trying to accomplish was helping people in the US develop strategies to control all these carp that are in the lakes. Like, kind of exchanging a method that Chinese fishermen might have for capturing carp. And also, they wanted to help China re-establish carp in their lakes and rivers. As we said, carp are under threat from a lot of fishing. And carp stocking was one solution.

When Duane got to China, they went out to these enormous lakes that they have that are on the flood plains of the Yangtze River. And they treat these lakes like giant fish farms. So they stock these four species of carp every summer and they let them grow and then they harvest them.

DUANE CHAPMAN: And so what we've decided to do was-- my Chinese colleagues in Wuhan-- they were extremely helpful. And they set me up with some companies that do this kind of harvest. And they were wonderful to us. They brought us in and showed us how to do these things. And they talked about all the different ways.

Different farms did things in slightly different ways. It was incredible, and they were just really welcoming and very nice for them to share their proprietary methods that they've developed over years with their companies with us.

BONNIE WILLISON: They witnessed this fishing process called the unified method. And the unified method is done over the course of months. But that's ideal because in China, they don't want to harvest all the fish in one day because at the markets, they sell really

fresh fish. So they want to be able to harvest a portion of the fish every day. These fishermen are the people that know these methods the best.

YUSHUN CHEN: Those guys have a lot of experience than us, practical experience.

SYDNEY WIDELL: So what does a unified method actually look like?

BONNIE WILLISON: Yeah. So imagine one of these big lakes. And it has a forest of bamboo poles sticking out of its surface. And they have nets that stretch between each pole. So the nets kind of divide the lake into smaller cells. And so they start from one side of the lake, and they drive fish from cell to cell.

Like, they're able to drive the fish by making like, noise on the boats, like, pounding on the bottom of the boat. And this scares the fish. So the fish kind of get driven from cell to cell. And they'll close off the back of the cell once the fish are in there. And so that way they can control the fish and kind of drive them from one side of the lake to the other.

And so the fish end up being more concentrated, and they're easier to harvest that way. It's are really time consuming and labor-intensive process to do this, but it's also a super effective way to harvest fish. And it allows them to harvest the fish every day to bring to the markets.

DUANE CHAPMAN: And in a situation where we had-- there were two scientists, and we brought it also along with a commercial fishermen the United States. And we all sit down in the room with these companies that do this harvest. And they were in the room-- there were those of us from the United States who spoke no Chinese. And there were a couple of scientists from China in the room that were helpful.

And they had-- in this whole thing-- and they speak spoke English and Chinese. And then there were all these guys from these fish farms who spoke no English. But it was remarkable how often that we didn't need any translators. We just had a bunch of guys in the same room that all spoke fish. And it was an incredible experience just being there poking fingers at maps and drawing on pages and using pencil and paper. And we didn't really need translation very often.

BONNIE Yushun remembers that too. He said that there were times when it was so hard to

WILLISON: translate ideas from one language to the other. And then the two groups would just rely on drawings and hand gestures to make their points.

YUSHUN CHEN: Yeah, that's magical thing. At least that we are all fish people. Different fish people have the fish language.

BONNIE WILLISON: They all spoke fish. I love that so much.

SYDNEY WIDELL: There is one language issue in particular that is made efforts to exchange ideas between the US and China, especially complicated.

BONNIE WILLISON: Duane and Yushun will explain after the break. And we'll also see if we can use this unified method in a completely different country.

ANNOUNCER 1: The Wisconsin Coastal Atlas is your one-stop shop for information about Wisconsin's Great Lakes coast. Want to learn more about the lakes around you, or maybe you're a researcher looking for spatial data? With the Wisconsin Coastal Atlas, you can browse interactive maps, share open-source spatial data, or find the tools you need to make informed management decisions. Find the coastal Atlas by visiting WIcoastalatlas.net.

ANNOUNCER 2: Water research mysteries, teachers connecting kids with the Great Lakes 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,* highlight stories previously available only in print from these programs. Series narrator and science communicator Marie Zhuikov 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.

SYDNEY WIDELL: So we've talked about the problem with the term Asian carp a little before, but it's worth bringing up again. And it's something that as a scientist on the American side of the Yangtze Mississippi collaboration, Duane thinks about a lot. In the US, the term refers to any of these four different types of fish, or it could refer to like any combination of those fish existing together. And there's a lot of like, inconsistency about how that term is applied, even within the scientific community. And like, state

laws and stuff, like it's used and not really specified what is being included and in that definition.

BONNIE WILLISON: How do you translate the term Asian carp from English to Chinese? Like, would this term Asian carp make any sense in Mandarin?

SYDNEY WIDELL: According to Duane, in China, the direct translation of Asian carp would actually mean common carp in Mandarin, which here in the US, refers to a completely different type of fish. That's also invasive.

BONNIE WILLISON: Yeah. I can see how that would be really confusing. Because if American scientists are using the term Asian carp, and Chinese scientists are hearing common carp, those are obviously different species. And we treat them differently.

SYDNEY WIDELL: Right! They have different impacts on ecosystems. They don't have the same relationship with each other. I mean, they're just like, a different type of fish. Yeah. In China, these four fish go by a completely different name.

YUSHUN CHEN: Four domestic fish or four famous fish, that's what we call in China.

BONNIE WILLISON: So four domestic fish?

SYDNEY WIDELL: Right. Yeah. And beyond that, the term just seems like it has to be so culturally loaded.

BONNIE WILLISON: Calling these fish Asian carp is kind of xenophobic?

SYDNEY WIDELL: Yeah. And it's interesting to consider how that might influence management too, when you have things that are obviously foreign, because they include those places in their names versus other species that are also invasive, but don't have that place name.

BONNIE WILLISON: The term Asian carp kind of exploits cultural anxieties and xenophobia that we might have in this country. Yeah, it's like what do we view as like, an invader?

SYDNEY WIDELL: Right.

BONNIE WILLISON: And how do we like, signal that?

YUSHUN CHEN: The term-- we did not use the Asian carp before. It's kind of how, an ethical issue or something for Asian people, with Asian carp.

SYDNEY WIDELL: Yushun, again, there are ethical issues probably to calling some species, like, to having biases and how you name species-- it's like, very inconsistent with in management and scientific communities. Some people in fisheries do not use the term. There's a bill that has been brought to committee a few times in Minnesota that would make it-- would ban the term Asian carp from state statutes. So instead of saying Asian carp, you have to actually say what carp you were talking about.

BONNIE WILLISON: Yeah. And didn't they say in Minnesota, like, instead of saying Asian carp, they said use the term invasive carp. But there's people that have a problem with that term as well.

SYDNEY WIDELL: What's the problem with that term?

BONNIE WILLISON: Invasive carp then, could mean a lot more than just Asian carp. Like, if you're saying invasive carp, you could also mean like, common carp, which don't pose the same like, immediate threat as silver and bighead carp invasion, you know?

SYDNEY WIDELL: Yeah. OK, that makes sense. Yeah. And according to Duane, using the phrase inconsistently just makes resource management and, not to mention collaboration with people in China, so much more confusing.

BONNIE WILLISON: Yeah. It's a difficult issue, but it sounds like calling them by their species name like, specifying silver and bighead carp, is a pretty good solution and gets your point across. So back to China, Duane, and the American scientists are out in the aquaculture ponds. And they're seeing the unified method for the first time. And this method, it works great for the Chinese harvesters that they visited. As I mentioned, it's a really efficient method.

SYDNEY WIDELL: Is that something that they could take back to the US and try on our rivers and lakes?

BONNIE WILLISON: Yeah. That was kind of the whole idea is, how can we use these methods on our lakes?

DUANE CHAPMAN: We were able to take some of those concepts and develop a method that we call the modified unified method. And we do the whole process much faster. We use technology that they don't use in China. We use side scan sonar instead of gillnets to tell where the fish are. We use-- I use broadcast sound and electrofishing to drive the fish, whereas they mainly get in there with boats and bang around and try to spook the fish with just banging on the surface with the pipes and things, trying to scare the fish away, whereas you know, we've got loudspeakers that go in the front of the boats. And they're extremely loud.

In fact, one of our biggest problems that we have with incorporating this technique in the United States is what do you do with this enormous pile of fish that you can catch when you bring the fish to the bank? So you've got a quarter million pounds of fish there on the bank. What are you going to do with it now? It takes days to just deal with that quantity of fish.

BONNIE WILLISON: So now, we do use the modified unified method on a lot of American waters. And there were a few changes that we had to make bringing it here. Like, a lot of Americans wouldn't appreciate a giant bamboo forest with nets like, within their lake that they want to boat on. So we don't permanently install the nets. But we use those methods now to capture carp and try to get down the population.

SYDNEY WIDELL: But it just is happening so much faster?

BONNIE WILLISON: Yeah. Because in China, they do want to get a few out-- get little populations of carp out every day. But here, it's like, let's just get them all at once. These are invasive fish that we don't want around anymore. So they are able to take like, tons and tons of fish out at once. And this image of all these fish going into a dumpster, or even going to be used as bait or dog food is pretty wild.

SYDNEY WIDELL: Especially considering that in China, where these carp are from, they're actually threatened species. And we're just taking them out in mass and not even able to use them all.

BONNIE WILLISON: Exactly.

YUSHUN CHEN: Yeah, that's right. When we know that, what we try and do-- to say and to do is, let's go there and give them back to here. And here, you know, we just said, we wish we had this much fish like in Mississippi and the Great Lakes.

SYDNEY WIDELL: Yeah. It would be ideal if we could just take all of our fish and somehow get them live back to China so they could use them for restoration. But it's not the easiest thing to do is ship tons of live fish halfway across the world.

BONNIE WILLISON: Even though Duane mostly works with these fish as a really big nuisance, he still has a lot of respect for these carp.

DUANE CHAPMAN: They're really amazing, wonderful fish. I just wish they weren't here. That's the problem.

SYDNEY WIDELL: Duane and Yushun agree that opportunities to study these river systems together and exchange ideas through collaborations like this one strengthens science.

BONNIE WILLISON: Yeah. So within the last 10 years, there's been this effort to look at these two rivers and two countries that didn't have a huge history of collaborating like, looking at fish. And so they've started doing these symposiums that they'll rotate between like, hosting them in the US and in China, where researchers from both countries take a trip over to look at the other people's habitats and have a big symposium where they talk about these fish, along with other things like water quality and stuff. And like, one country struggles so much with managing one fish that's super invasive or trying to protect our biggest river system. But it's like, all kinds of other countries will have kind of analogous rivers, and maybe looking back to where these fish came from. And the people who know them best, we can collaborate.

DUANE CHAPMAN: I have a long term relationship with these Chinese colleagues. And it has been very productive on both ends. We have one book published and another one on the way. And we've been working with those colleagues, those scientific colleagues, for a long time.

I did, in fact, host some of those commercial fisher types. We had a meeting here in

the United States. And I got to bring a few of those guys over here. We had a meal at our house, where of course, I have some ponds at my house.

And so we went out and just caught some bass and bluegills. And we cooked them up at the house. And it was a-- we had all kinds of Chinese ways of preparing these fish now.

SYDNEY WIDELL: While we're dealing with the expansion of carp, China is also dealing with its own invasive species. One thing that was really surprising to me was that smallmouth bass are actually really invasive in China. And they were brought over because they're so abundant in North America. And people in China thought that they could be valuable for food and for fishing. And now they are-- their population has really, really taken off.

YUSHUN CHEN: You know, this world is just too small. People have to work together and trying to make things better.

BONNIE WILLISON: Just a quick note as we wrap this up, we'll have some recipes for cooking Asian carp linked on our show notes. So check it out on our website.

[MUSIC PLAYING]

SYDNEY WIDELL: *Introduced* is produced and hosted by Bonnie Willison and E. Sydney Widell. Please subscribe, rate, and review, or share this podcast with a friend. You can find Wisconsin Sea Grant on Twitter at UWISCSeaGrant and on Facebook at the University of Wisconsin Sea Grant and Water Resources Institute.

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