

Lake Simcoe Sessions Podcast

Episode 3: Changing Waterways

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This episode features two speakers:

- Katie Biddie- Podcast Host and Outdoor Educator at LSRCA
- Brian Ginn- Special Guest and Limnologist at LSRCA

Katie Biddie 0:03

Hi and welcome to Lake Simcoe sessions, a podcast hosted by the Lake Simcoe Region Conservation Authority. I'm your host Katie Biddy. Join me as I chat with the experts to learn all about how climate change is impacting us and our ecosystems right here in the Lake Simcoe region. Our goal is to discuss how we can all work together to build a resilient future for our watershed. This podcast is being recorded on the lands of the Williams treaties First Nations, we are committed to renewing our relationships with First Nations peoples and deeply appreciate their historic connection and unwavering care for this land and water. This podcast has been made possible thanks to the generous support from the RBC Foundation and the Lake Simcoe Conservation Foundation.

Hello, and welcome back to Lake Simcoe sessions. I'm so excited to have you back with us today for our third episode, because you know what they say Third time's the charm. And I think today's episode will be a charm because today we're talking about Lake Simcoe itself. Now, here in Ontario, we're really lucky, it's such an amazing place to live because we have access to so many freshwater lakes. And I think that's really what makes Ontario a special part of our world. Like when I think back to some of my fondest memories of growing up in Ontario, they're pretty much all spent somewhere close to a body of water, or a lake. So whether it was swimming at my family cottage or going to the beach with friends when I was growing up going camping or going on canoeing trips, I was fishing on the frozen lake in the winter, so many parts of my childhood and my upbringing were affected by having access to clean freshwater habitats. And again, I really just think that's what makes Ontario such a special place. But I also think that as Ontarians, we have a collective responsibility to help protect our freshwater and make sure that our lakes stay healthy and clean for generations to come. But don't take it for me today I'm going to be interviewing someone who is a lake expert. So without further ado, I'm excited to introduce you to Dr. Brian Guin, who is going to be telling us a bit more about climate change and how it's going to impact Lake Simcoe.

Okay, so I'm excited to introduce all of our listeners to our next guest and our guest today is the limb neurologist or lake scientists for the Lake Simcoe Region Conservation Authority. Welcome Dr. Brian Ginn.

Dr. Brian Ginn 2:39

Thank you, Katie. It's a pleasure to be here.

Katie Biddie 2:41

Yeah, thank you so much for joining us. I'm so excited to have you and to chat about all things Lake Simcoe today. And I was actually hoping that you could start us off by telling us a little bit about yourself, your background, your education, but I would love to hear what limnology is or what it means to be a limnologist.

Dr. Brian Ginn 2:59

Okay, what limnology is, is just a fancy word means the study of freshwater. So we look at lakes, ponds, rivers, streams, that sort of thing. And we look at all aspects of it as well. So it's really what we refer to as a multidisciplinary science. So on any given day, in limnology, we're using things from physics, chemistry, biology, geology, kind of all wrapped up together. And it's really to understand how freshwater ecosystems work, if they're healthy, if they're not healthy, that sort of thing.

Katie Biddie 3:26

Amazing. I listened to another podcast called ologies with Allie ward. And so her podcast, she interviews people from all different fields of science, all different ologies. And I was checking right before this interview here, because I was curious if she had ever interviewed a limnologist. And I don't think she has so I'm really excited to have the chance to interview a limnologist today,

Dr. Brian Ginn 3:47

we're a rare breed to be sure.

Katie Biddie 3:49

And as far as lakes go, have you always worked studying Lake Simcoe or have you worked on other lakes?

Dr. Brian Ginn 3:58

No, I haven't. I actually in my undergraduate degree when I was doing a Bachelor of Science actually started in marine biology. So I did marine biology. So first, I grew up on the east coast. So there was a giant ocean beside so I actually started out doing that. And then I liked what I was doing. And I went on, and I did a master's degree. And I actually did a thesis study on sponges in the Bay of Fundy. And it was interesting, I got to scuba dive pretty much for my schooling. And I discovered a new species of sponge that I got to name and that was really interesting. Amazing.

Katie Biddie 4:27

What did you name it?

Dr. Brian Ginn 4:28

I just named after Canada. So it was just *Hymedesmia canadensis* as what's called so the genus name was already picked. So I just picked the species name for it. So yeah, it was neat. And we got to publish this, this paper on it.

Katie Biddie 4:39

That's awesome.

Dr. Brian Ginn 4:40

And then after that, I taught University labs for five years, I think. And then I wanted to do more. And this opportunity came up to start working on lakes instead of in the marine environment. And from there, it's just kind of spiraled. So I went to Queen's University, I get a doctorate degree, studying the effects of acid rain on lakes. So I worked in Nova Scotia. We took sediment cores when we could actually find out when acid rain started impacting those lakes. So in the 1940s, you can see the pH of the lakes declined, and just the environmental changes that happened from that. And then after that I did what's called a postdoctoral fellowship. So it's really like an internship or a residency program, if you will. And I've worked on other environmental issues from that. So nutrients work to climate change, landscape changes in the impact on lakes, Lake Management, and that's kind of the things that I work on now here at Lake Simcoe Region Conservation Authority. And I've been at the conservation authorities since 2008. So that's 13 years now, I guess. So I've been working just on Lake Simcoe,

Katie Biddie 5:39

not that you're counting, right. Laughter

Dr. Brian Ginn 5:43

the time just seems to fly by because it's a great, it's a fun job. I work with a fantastic group of people. And really, I do something that I love, it doesn't feel like work, it doesn't feel like a job, I'm basically doing a hobby for a living. So I go in I work on a lake, I get to write up papers on it, and I get to do lab analysis and stuff as well.

Katie Biddie 6:03

that's amazing. And the work you do is so important because it helps inform conservation work around the whole Lake Simcoe watershed, right, because the the health of the lake relies on on everything that's happening in the whole watershed, when when it comes to doing like field research. Could you tell us like a typical field day as a limnologist, what that would look like? Are you actually out on the lake?

Dr. Brian Ginn 6:25

Yeah, I have the benefit of actually going outside in the sunshine, or sometimes in cold winters, that sort of things where we actually vote on the lake, we have a research vessel, we work we take water samples, we take samples of the plants in the lakes samples of the plankton and the algae, we look at the bugs that are in the lake, that sort of thing. We usually spend a day of doing that. And then we come back, we analyze them in the lab, and then we write up our data results from that. So basically, one day in the lake works out to be one or two weeks in the lab, and then writing that data up probably takes about a month after that. So so there's a lot of work. But it's it's fun, it's really rewarding work as well. and the most interesting part is that you get to see things that nobody else has seen before. You're looking at things that people have seen for the first time, like how the lake is changing. And we've seen a lot of these changes just in 13 years. That sounds like a long time. But in the lifespan of Lake Simcoe, it's just a blink of an eye. And we've seen some dramatic environmental changes on the lake since then.

Katie Biddie 7:20

Right. And I'm glad you mentioned that because our podcast is all about climate change and how climate change is impacting different fields of study. So when it comes to limnology, and Lake science, climate change is obviously going to have a big impact and actually is like you're mentioning already having an impact on Lake Simcoe. We've been discussing in previous episodes about how the Lake Simcoe regions going to get warmer by about five degrees. We've been discussing how there's going to be more rain events, more precipitation events where there's more rain falling in a shorter amount of time. And those are all things that are ultimately going to affect Lake Simcoe. I was wondering if you could tell us a little bit about how what we're expecting to see in the future of Lake Simcoe due to climate change.

Dr. Brian Ginn 8:03

Sure, right. Yeah, everything that happens on the landscape eventually affects the lake. So lakes are what I call a downhill ecosystem. So basically anything that happens on the land or in the air above them, it eventually impacts the lake. And it usually leaves a record in the lake as well. So we can track how the lake has changed, and then how the surrounding environment has changed. And there's no doubt that climate change is happening in Lake Simcoe and it's having an impact on the lake. And climate is one of our top three environmental stressors on Lake Simcoe. So it's climate change. nutrients are also an issue and also invasive species. And these are probably the big three issues. And an interesting thing I'd like to point out is that they don't act independently of each other, they kind of kind of team up and have what we call these multi stressor impacts. So things like climate change, as you mentioned, the changes rainfall patterns. Well, that range changes how phosphorus is entering the lake, and then when and how that phosphorus enters the lake can change how plankton can use it, how it's being used within the lake, how plants can use it, that sort of thing. The same thing climate change, where it's increasing water temperatures in the lake can give invasive species a competitive advantage over native species. So like zebra and quagga mussels, for example, have an easier time surviving than like native mussels do. For example, one of the things that we point out with this is, for example, these invasive mussels, zebra mussels invaded the lake in the 1990s. They've died off in the lake now they've been replaced by the second species, which is quagga mussels, but they eat algae. So they take these algae which are suspended kind of plant like particles in the water, and they filter them out and they remove them from the water. This makes the water more clear. But these algae particles also contain nutrients. So these muscles are stripping nutrients from the water. They're also making the water more clear, because the waters more clear sunlight can penetrate the lake deeper, which means that it warms up faster and it warms up longer. And because the lake warms up so much longer then it impacts how much ice cover there is on the lake at the end of the year as well. So it's all these multi disciplinary and these multi stressor effects that we're seeing on the lake. So climate change is one factor, but it's, but it has a trickle down effect on all these other changes that we're seeing in the lake as well.

Katie Biddie 10:13

Right? That's kind of it's interesting, because to me, you would think that clear water is better, right? But you're kind of saying not necessarily, not always because it allows the sunlight to reach deeper into the lake. And you mentioned phosphorus, so more with climate change the larger rain fall event that will lead to potentially more phosphorus in the lake. What is where does phosphorus come from, though? Is it in the rain? Or? Or how does it end up in the lake?

Dr. Brian Ginn 10:41

Yeah, phosphorus is a naturally occurring element. So naturally, what happens is rain weathers rocks, and it comes into rocks. And it kind of filters down through the ecosystem on the ground, and it gets into the streams and rivers and eventually into the lake. But what happens is we got a lot of those artificial phosphorus, phosphorus from fertilizers that we use on our lawns, and use on farmlands, that sort of thing. It also gets blown up into the air as dust, so it's falling in rain as well. So phosphorus is coming from everywhere. And this traditionally promotes like algal blooms, and so on, in lakes, that sort of thing. But we're having these invasive mussels that are taking care of these algal blooms that are happening in the lake. So we're not really seeing the impact, but we're still seeing a lot of phosphorus going into the lake. And really, what we're looking to see is despite the fact that phosphorus loading is going up the lakes pretty much staying the same. And we want to know why this is Lake Lake some because one of the only lakes that we know of when phosphorus loading is going up, the phosphorus levels in the lake haven't changed. And we want to know why this is a research program that we're looking at now. And we think part of that reason is climate change. With rains that we're having now during summertime and so on, we're getting these intense downburst storms that happen. They deliver a lot of phosphorus really fast, but it's also pushing the phosphorus through the lake faster than it has been in the past. And we want to know, how is this impacting our lake? And what does this mean to Lake Management? the ground, and it gets into the streams and rivers and eventually into the lake. But what happens is we got a lot of those artificial phosphorus, phosphorus from fertilizers that we use on our lawns, and use on farmlands, that sort of thing. It also gets blown up into the air as dust, so it's falling in rain as well. So phosphorus is coming from everywhere. And this traditionally promotes like algal blooms, and so on, and lakes, that sort of thing. But we're having these invasive mussels that are taking care of these algal blooms that are happening in the lake. So we're not really seeing the impact, but we're still seeing a lot of phosphorus going into the lake. And really, what we're looking to see is despite the fact that phosphorus loading is going up the lakes pretty much staying the same. And we want to know why this is Lake Lake some because one of the only lakes that we know of when phosphorus loading is going up, the phosphorus levels in the lake haven't changed. And we want to know why this is a research program that we're looking at now. And we think part of that reason is climate change. With rains that we're having now during summertime and so on, we're getting these intense downburst storms that happen. They deliver a lot of phosphorus really fast, but it's also pushing the phosphorus through the lake faster than it has been in the past. And we want to know, how is this impacting our lake? And what does this mean to Lake Management?

Katie Biddie 11:58

Interesting. So Lake Simcoe is kind of defying previous Lake laws right now and and you're doing some research to understand that better how it might be related to climate change

Dr. Brian Ginn 12:07

It has. And it's interesting. And like I said, this is one of these things that nobody else has seen that we're starting to see here. And we want to know why it's happening and how it's happening. And it's part of the fun part of this job as well as seeing these things that nobody else has really ever kind of looked into before.

Lake Simcoe Watershed Resident 12:24

Now more than ever, we're seeing and feeling the effects of climate change as a lakes and go watershed resident. I'm thankful for the generous support of the RBC foundation to help us each learn a little bit more about how we can take actions against climate change. Starting right here at home.

Katie Biddie 12:44

We talked a little bit in our first episode with Fabio I talked to him about how there's a chance in the future that we might see entire winters go by without Lake Simcoe freezing over and obviously that impacts us as people right we rely on ice cover on Lake Simcoe for recreation for ice fishing, even for transportation for those who live on Georgina Island First Nation. But how would an iceless Lake Simcoe affect the lake ecosystem?

Dr. Brian Ginn 13:13

Yeah, it'll be big, big changes. Actually, you mentioned Lake Simcoe not freezing over we've actually had two years when Lake Simcoe is not frozen over in the past 20 years. And this is kind of an unprecedented event that we see in 2002 and 2012. I believe it was the lake did not freeze over at all it was a giant open water hole in the center of the lake. Lake Simcoe is interesting because we have one of the longest periods of ice records in Canada. So starting from 1852 on Kempenfelt Bay, right through until now, we know when the ice came on the lake and when it came off and how long that period was. We don't know about the whole lake because back in the 1850s the only way to find out if the lake was frozen in the middle was to walk out and that was probably not the best idea if you wanted to survive sort of thing. But since the year 2000, we've had satellite footage, and it's a daily satellite photo that's taken with a lake and we can look at it day after day to find out where the ice cover is and how much of the ice is covered over. So with Lake Simcoe starting in the 1850s for example, the first 20 years the average ice cover on the lake was 126 days. On average, the lake froze on December 19. And it stayed frozen until April 24. If we look at the last 20 years now, it's gone down from 126 days to 92 days so almost an entire month less now of the week being frozen than what it was before. And now on average it doesn't freeze until January 10 and it stays frozen till April 12. So the ice off date hasn't changed that much only about 12 days. But the ice

on date is almost a month later. And the reason for that is because during the summertime the lake warms up so much more than what it did in the past. It takes longer for that ice to form than what it did. If you think of a lake as kind of a birthday cake or a layer cake kind of thing. You got this warm water layer on top. So that's your top layer of your cake is as warm water layer. And then at the bottom, there's the second layer, that's your cool water layer, and they're separated and they don't really mix with each other. And what happens in the fall and in the spring, kind of layers of the cake collapse together and they do mix and then during the wintertime, there's a weak kind of double layer that forms again, and it's this top layer that warms up and this is what prevents the ice from happening. So it really prevents the lake from freezing as early as what it did before because it's so much warmer than what it is now than what it was in the past.

Katie Biddie 15:34

Wow that's interesting to think of it like like different layers. I feel like it's probably not quite the layers you're talking about. But when you go swimming in in Lake Simcoe or really any lake and you feel that like difference in temperature, if you're diving down, it's like quite warm on the top and then you can feel the water temperature get colder and colder as you swim down. So it makes sense that the cooler waters towards the bottom and then that top layer stays quite warm.

Dr. Brian Ginn 15:56

That's exactly the same thing and it says warm water layer that heats up during the summertime. And that's what we needed to cool down in order before it can freeze over in the wintertime sort of thing. What we've seen on the lake actually is last year I recorded that the warmest offshore water temperatures that we've ever seen was July 2020. We recorded 27 degrees Celsius for the for service water temperature on the lake and that's like tropical water conditions. Wow for the average is probably around 20 to 23, something like that, but this was four degrees warmer than before. And based on monitoring records and the provincial Ministry of the Environment here in Ontario, has been recording the temperature on Lake Simcoe since the 1980s. And the bottom water this cool water temperature on the bottom of Lake Simcoe has actually warmed up four degrees Celsius since the 1980s. So almost a degree Celsius per decade, it's been warming up in the bottom of Lake Simcoe and the warmer that lead gets, the longer it takes for the ice to form and to freeze. And the other impact of that has to do with oxygen levels. So in Lake Simcoe, we've got some of the best cold water fishery in Ontario. Things like Lake Trout and Lake whitefish, and so on. People come from all over the world, just to fish Lake Simcoe, and these are called cold water fish because they need cool and cold water temperatures. So that upper warm layer that you're talking about, they can't tolerate that in the summertime, they kind of hang out at the bottom of Kempenfelt Bay where it's nice and

cool. And there's lots of oxygen there cool water holds a lot more oxygen the warm water does. But what happens is with this layer is the lake slowly runs out of oxygen during the years. So back in the 1950s in the 1960s. And so on. Lake Simcoe on the bottom of it used to run out of oxygen before it mixed again it kind of refresh this oxygen level on the bottom. And that was a problem for the fish and those fish die off and so on. And recruitment failures among the lake trout and Lake whitefish. Basically, they weren't reproducing and the young fish weren't surviving. Now that we've kind of restored the phosphorus levels in the lake, what we're finding out the longer that this lake is separated into two layers is the longer it takes for that oxygen to get used up at the bottom. So if it extends too much longer than what it already is, the lakes going to start to run out of oxygen on the bottom of Lake is going to be trouble for lake trout and Lake whitefish and so on. So it's not just the temperatures that are increasing, it's gonna be this lack of oxygen that's going to happen at the bottom of the lake as well.

Katie Biddie 18:14

Wow, I didn't even Yeah, so the fish who rely on that cold water deep at the bottom of Lake Simcoe, if it's if it's not cold, and there's not oxygen, they won't be able to necessarily survive. It's interesting, you never necessarily think like temperature would affect, you know, the life of fish that you think that deep in Lake Simcoe, it's so far away from where we are on the surface here. But it really is all connected. And I think another thing that came up in Episode One, we talked a little bit about the fact that we're expecting more of those freeze thaw events in our winter where, you know, it gets really cold and there's ice all over the all over the roads that freezes and then it melts and then it freezes again. And as a result we rely on salt to to keep our roads safe for driving. But I know salt is also kind of a potential problematic area for lakes, is that something that we're seeing in Lake Simcoe as well,

Dr. Brian Ginn 19:08

yeah, we're also seeing the impact of road salt use as well. So like you said, As the temperature kind of hovers around this freezing and this thawing temperature, we have to use more salt on these roads, because that can clear ice if it gets really cold really fast, then we can deal with that we can like put sand down and so on and we can change our driving habits. If it's warm, I mean, it's bare pavement, that's fine. But it's when the road gets wet and then it freezes at night, that's when you start getting black ice and that's a traffic hazard. And for that we combat it by using de icing salt on roads and parking lots and so on as well. So it's not just the changing temperatures and so on as well. It's also the impact of the salt. Now salt dissolves which is why we use it on paved surfaces to treat ice and do deal with ice and so on but it's also dissolved so it runs off into rivers and streams and so on and these streams feed into Lake Simcoe and yeah, on average the salt level in Lake Simcoe, we use chloride but also salt is actually sodium chloride if you think a table salt, so we track it using this chloride, which is part of this salt

content. And the impact of that is that this has been increasing by about one milligram per liter per year in Lake Simcoe, so we have salt data going back to 1972. And there wasn't much salt use in the watershed at that time, an average was around 10 to 12 milligrams per liter. So that's kind of the natural background salt, if you will, that kind of just washes in off the watershed. Now it's around 50 milligrams per liter, and that's getting high. The problem happens when we hit around 120 milligrams per liter, that's when we start you losing the most sensitive freshwater species because they can't tolerate salt. they've adapted to living in a low salt environment, they're not like the ocean, fish, and so on that can tolerate salt, these ones can't. And that's when we start losing these, we're and we've actually done research to that found out that it's actually less than 120 milligrams per liter. So you'll you'll probably start to see effects around 50 to 60 milligrams per liter. And we're probably starting to see these effects in Lake Simcoe out with impacts happening to the most sensitive species in the lake. So that's one reason why we're working on assault reduction plan is to find a different way of kind of de icing our pavement and so on. And in the wintertime is rather than using the salt that can be toxic to life, we can actually use something else that might be better or less, less harmful.

Katie Biddie 21:26

Right? Yeah, I always just find it's so interesting. The idea that, you know, everything that happens in our whole watershed ultimately kind of ends up pooling in the lake, right. So, like anything that goes on the ground and ends up in the water anywhere in the watershed will end up in Lake Simcoe. So it does make it kind of vulnerable, right. Like it's, it's the center of our watershed is what we're all about protecting, and yet it's a very vulnerable habitat or ecosystem. Right?

Dr. Brian Ginn 21:52

Right. It totally is. Yeah, and the lakes are surrounded by higher area. And anything that happens in that higher area in the watershed all ultimately runs down into the lake.

Katie Biddie 22:01

Totally. It is kind of nice, though. It's like when you think about climate change, it's this massive kind of challenge that we're facing. But we when we talk about the lake, and we talk about how it's impacted by all sorts of different things, we talked about phosphorus, we talked about temperature changes, more rain, salt, it's quite complex, just like the issue of climate change. So I feel like it's a nice parallel thinking of protecting Lake Simcoe and thinking about how, as a society, we have to work together and think about the whole system, when it comes to coming up with our solutions to climate change. What gives you hope about climate change, because I know sometimes it can feel like a very big challenge very daunting, is there something you would share with us that keeps you hopeful and motivated for our future?

Dr. Brian Ginn 22:45

Yeah, hope is the one thing that we have. I mean, it's a big issue. And like you said, it seems daunting, but there's always hope. We'll look at the past COVID pandemic that we've just been through. I mean, that's been daunting, we turn to science and science found a solution for it. And we're starting to see the light at the end of the fall now. And the same thing with climate change. And climate change is really the latest of our big environmental challenges that we've had. We've come through these in the past in the 1960s. It was pesticides and DDT, we ban those we solve that issue, nutrient pollution in the 1970s. we tackled that I mean, if the great lakes are a lot healthier now than what they were in the 1970s. And the same thing with acid rain in the 1980s in the 1990s. We reduce sulfate levels in emissions that are smokestacks, and so on. And we conquer that. And I have no doubt that we can do this for climate change as well. It's going to take a big, it's a big challenge. And it's going to take all of us working together. But I think we'll get through it. And we have to I mean, this won't affect us. I mean, I'm 50 years old now. So I'm on my way out, if you will, I mean, climate change is not really going to affect me, but it's our children and our children's children's that are going to have to tackle this and what we started doing now, we have to pass this world on to them as well. And then what what sort of thing they have, and we can solve this. I mean, other people that I talked to, they say it's like stopping a train or one of the big Great Lakes freighters if you will, it's not going to happen immediately. It takes a long time to slow that down and change direction. And that's what we have to do. And change really starts with a single person. I mean, we can start like each one of us, we can drive less, we can start using public transportation. We can eat less meat, all these things that put carbon up into the atmosphere, plant a tree naturalize your shoreline, I mean, you're one person doing something, but you can also get your neighbors involved as like a little snowball effect. I'm reminded of a shampoo commercial from the 1980s where somebody said oh, I told two friends and I told two friends and it's the same thing with climate change. Tell two friends what you're doing and they'll tell two friends and they'll tell two friends and so on. And encouraged them to do this. I know a lot of big climate emitters if you will, or like the industries and so on but pressure your politicians in to changing that change policy, make wise consumer choices and that sort of thing. I mean, you you can change the world just by grassroots action. I mean, this is how we have to do this. I mean, nobody really wants to change, we want to keep on keeping on what we've always been doing. But I mean, we have to change it based on ourselves. And I mean, it's this hope we have to have this hope to go on. And I believe that we will fight and tackle climate change.

Katie Biddie 25:24

Absolutely love it. No room for climate nihilism here, right? We all have to be a part of the solution, I think of a graphic that I've seen recently. And it's like, this person, one person's trying

to jump up to the highest rung on a ladder, and it says, like, zero waste, zero carbon emission lifestyle, and they're trying to jump but it's really high. And then the person next to them is climbing the ladder. And they're only about halfway up. But it's those small steps, right? It's like switching to a reusable water bottle is that bottom rung super easy, something everyone can do. But you know, you take your step up. And then the next one is like, relying on bicycle for transportation, and everyone just has to work and take those individual steps. And ultimately, that's how we can get towards the solution. Right. So I love that I love your hopeful approach there. And I also love that you brought up, you know, we've overcome challenges. We it's human nature to overcome challenges. And so despite climate change being what feels like a huge challenge, we'll we'll do it again. Right? We have to. So that's amazing. Thank you so much for joining us today. Dr. Brian Ginn it's been such a pleasure chatting with you and I hope you enjoy joining us on Lake Simcoe sessions. Is there any closing remarks you have before we sign off the interview here?

Dr. Brian Ginn 26:40

Oh, it's always a pleasure. If you have more questions, just feel free to contact us at Lake Simcoe Region Conservation Authority and we'll make sure the questions go to the right person and we'll get an answer.

Katie Biddie 26:50

Amazing. Thanks, Brian. We'll talk to you soon. So fantastic to hear from Dr. Brian Guin, the limnologist or more commonly known as the lake doctor for Lake Simcoe so interesting to hear what's been happening in our lake in the past and also what we're expecting to see with Lake Simcoe in the future. I just wanted to take a moment though before we wrap up our podcast here to remember that While Dr. Brian Ginn is doing an amazing job of monitoring and watching the health of Lake Simcoe. The responsibility of keeping Lake Simcoe healthy and clean falls on everyone. And we all can collectively do our part in ensuring that lakes Simcoes water stays clean and healthy for generations to come. If you're a resident of the Lake Simcoe watershed, there are some really easy things that you can do to help protect the water before it flows into Lake Simcoe. Some things you can consider doing are installing low impact development projects. Sometimes we call them Li D projects. And these are things with that have the goal of collecting rainwater, slowing it down and allowing it to naturally infiltrate into the ground so that it becomes cleaned instead of just running off on a roadway and collecting a lot of pollution or things like salt, road salt or fertilizers along the way. So for example, at my house, we have a rain barrel that collects water from our roof anytime that it rains. And we use that water to water our veggie garden each summer. And honestly, it was just a really simple way of collecting that water and utilizing it and allowing it to take its natural course through the ground to the lake simcoe instead of just running off across our streets and sidewalks and

pavement. Another really easy way that you can do your part to help protect Lake Simcoe is to consider using less salt in the wintertime. So if you're putting down salt on your driveway or your walkway, you really only need to use a sparing amount of salt and we sometimes over salt, we put too much salt and it doesn't really serve a purpose. So just consider using much less salt. And by decreasing the amount of salt that you use, you're going to effectively decrease the amount of salt that ends up in Lake Simcoe, which as Dr. Brian Ginn mentioned is one of the key threats that Lake Simcoe is facing. My final challenge for this episode is to get out to either Lake Simcoe, or to your local stream or waterway and just go enjoy it. Like I was saying at the beginning of the episode, we're so fortunate to have access to clean fresh water systems here in Ontario. So let's use it. Let's enjoy it and spend some time close to the water. Thank you so much for joining me today and I'm really looking forward to our episode next week where we'll be talking about restoration and how we can participate in projects that help restore our environment to its natural condition. We will talk to you soon and thanks again for joining us on Lake Simcoe sessions.

Conclusion with music

Thanks for joining me and tuning into this episode of Lake Simcoe sessions. Let us know what you think by using the hashtag climate connection on social media or tagging us at LSRCA on Twitter. Make sure to like and subscribe the podcast or visit our website at LSRCA to see all of our podcast episodes. LSRCA is committed to providing an accessible experience for all so transcripts of each podcast episode will be posted on our website. Special thanks to the RBC Foundation whose financial support has helped to make this podcast possible.

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