

- Introduction: "The time has come", the Walrus said, "to talk of other things."
- Stephanie Otts: This is a podcast not about shoes and ships and sealing-wax but about the who, what, where, why, and how of shellfish aquaculture including the many different legal challenges that can arise. We're the National Sea Grant Law Center, and we invite you to sit down and get ready for a wave of knowledge.
- Stephanie Otts: Hi. I'm Stephanie. I'm the Director of the National Sea Grant Law Center.
- Cathy Janasie: Hi. I'm Cathy. I'm a Senior Research Counsel at the National Sea Grant Law Center.
- Amanda Nichols: And I'm Amanda. I'm the Ocean and Coastal Law Fellow with the National Sea Grant Law Center.
- Stephanie Otts: You're listening to Law on the Half Shell. Today, we're doing things a little differently. As we were putting this series together, we discovered a lot of interesting facts about shellfish. Unfortunately, some of our favorite facts didn't make it into the episodes. So, here, in this bonus episode, we wanted to take you behind the scenes of podcast production and share some of our favorite discoveries.
- Stephanie Otts: First of all, some of you may be wondering about the significance of the music clip we used in our episode intros. If it sounds familiar, that's because it was used in the famous Disney film, Alice in Wonderland, in 1951. However, the source material for the song has actually been around since 1871 when Lewis Carroll, the author of Alice in Wonderland, wrote a poem entitled, "the Walrus and the Carpenter" to include in his book, Through the Looking Glass.
- Stephanie Otts: In the poem, the Walrus and the Carpenter come upon a bed of oysters while walking upon the beach one night. Looking to have a tasty meal, the Walrus and the Carpenter trick the oysters into following them only to turn on them and eat everyone.
- Cathy Janasie: Oh man, that is awful.
- Amanda Nichols: I agree. Perhaps it's best not to consort with strange walruses and carpenters if you shell-fishly want to stay alive.
- Stephanie Otts: Oh, Amanda...
- Cathy Janasie: Amanda always has the pun.
- Amanda Nichols: I'm sorry for that one. Another fun fact is that the Beatles actually reference Carroll's poem in their hit song, "I'm A Walrus". John Lennon once expressed how dismayed he was at learning that the walrus was a villain in the poem as

Carol tricks his readers and the poor oysters into thinking the walrus is kind and well-intentioned.

James Gledhill: One other cool thing that I've kind of found in my research too is these things called hemocytes in oysters. So, are you familiar with-

Stephanie Otts: I don't know what a hemocyte is.

James Gledhill: The way I like to think about it is they're kind of like our white blood cells, a human's white blood cell, but on steroids, right? So, basically they do all these other functions. So, our white blood cells are a part of our immune system. They engulf pathogens and degrade them and protect us, right?

James Gledhill: Oysters have these similar things called hemocytes where they'll engulf pathogens, they'll degrade them and excrete them, and protect the oyster. But that's not all they do. They do all these other functions. They actually help with digestion so oysters can ingest something. These hemocytes will engulf them and actually transfer them to their digestive track to digest them.

James Gledhill: And this way they can selectively pick particles out of the water that they can eat, which is pretty fascinating. They also help with shell deposition, right, so they'll help transport calcium, which is one of the main components of their shells, and actually help them form their shells, repair their shells, and stuff like that, so they're kind of like the main line of defense plus the jack-of-all-trades for oysters. Hemocytes are pretty cool.

Stephanie Otts: So, in your work, have you encountered, in your actual research project, any particular challenges since coming on board with University of Mississippi?

James Gledhill: Yes. Lots of challenges. Estuaries, which are the environments that oysters live in, are very complex environments. So, there's a lot of things that can go into these estuaries like contamination. There's a lot of fresh water influx, which we've had a lot at the Mississippi Coast in the past months. So, they're constantly being berated by all of these different stressors. And trying to mimic that in a laboratory setting is almost impossible.

James Gledhill: So, it's one of the main challenges when studying oysters is how are you going to mimic these environmental conditions in the lab. So, that's one of the main kind of things that we've come across and one of the struggles of the research, I guess you can say.

Stephanie Otts: Did you kill all your oysters?

James Gledhill: We killed a lot of oysters. We did. It's funny because we're trying to save them, but we've killed a lot of them in the process. Another one is working in the field. I came from a background of forensic chemistry in my undergraduate degree. So, then me and my advisor, and she's like, "Do this research on oysters." So, I

had to start from zero. So, I had to learn how to function and run a study in the field in a way where you can get data that's going to mean something hopefully. So, that took a lot more effort than I originally thought. We had these big sensors that we threw out of these landers that we put into the sound, and we put oysters in them, and we ended up losing a lot of them. Some of them were crushed up by propellers and stuff like that, and we went back, and we couldn't find some of them, and we lost a lot of money. And then we had to reevaluate, go out again, and just try, keep trying, and there's been a lot of setbacks, but it's been really fun trying to figure it out.

Amanda Nichols: Fun fact! Prince Edward Island is not just the home of Anne of Green Gables. It is located on the east coast of Canada, near Nova Scotia, if you don't know, and the area's ocean waters and tidal habitat are actually ideal for growing mussels. So PEI is the largest producer of mussels in North America. Who knew?

Stephanie Otts: So, anybody who goes to Prince Edward Island for Anne of Green Gables should also try out their mussels.

Amanda Nichols: That'd be a fun vacation.

Cathy Janasie: Do you guys know what moules frites is?

Amanda Nichols: No.

Cathy Janasie: I speak bad French. So, it's mussels with French fries, and it's actually the national dish of Belgium. So, it was originally created by combining mussels, which was a cheap food stuff on the coast of Belgium, and then with fried potatoes, which were eaten in winter when other sources of food worked together. So that's how the two are matched together, and they're so popular that a Belgian-pop star has actually made a song called, "Moules Frites" in which he sings about his favorite delicious dish of Belgium.

Amanda Nichols: True love for carbs.

Stephanie Otts: I love French fries, but I'm not so sure about eating it with mussels.

Cathy Janasie: Once I was in Washington, DC on national Belgian holiday, or independence day, and I went to a Belgian restaurant, and it was delicious. Yes, they cook the French fries in duck fat. And it was really good.

Amanda Nichols: That sounds great.

Cathy Janasie: Sinful. Yes.

Stephanie Otts: Have you heard that there's two different types of clam chowder: New England and Manhattan? We took a vote.

Amanda Nichols: I have not heard that.

Stephanie Otts: You have not heard that?

Cathy Janasie: I feel like a lot of people don't know what Manhattan clam chowder is, and so, a couple of us, we're North-easterners, and so we know that New York and Boston have this huge rivalry that Red Sox and Yankees hate each other. The cities don't have a lot of love lost. And as someone who loves the Yankees, I'm sad to say that Manhattan is probably the ugly step-sister New England clam chowder. And that cookbook writer, James Beard, describe the clam chowder, and I'm quoting him, as "...rather horrendous soup called Manhattan clam chowder. It resembles a vegetable soup that accidentally had some clams dumped into it, and some people thought it was so bad that in 1939, a state assemblymen from Maine introduced a bill to make it a statutory and culinary offense to put tomatoes into chowder.

Cathy Janasie: So, for those of you who've never had it, it's basically vegetable soup with potatoes and onions and obviously clams, but they use a tomato broth instead of the traditional New England version that's creamy and delicious and hardy. And so, that's why most of you have probably never had it because I feel like it's really not caught on in other parts of the country.

James Gledhill: Because it's not good.

Stephanie Otts: Yes. So, your clam chowder should be creamy not tomatoey.

Cathy Janasie: Yeah. And then New England clam chowder... So the Manhattan dates back probably the mid 1800s. They thought it was because so many Italians had come into New York, and so, there was this evolving love of tomatoes, and then that's why they added the tomatoes. But the New England version, they think, was probably brought about by French and Nova Scotian settlers back into the 1700s. And if you go to Boston, the nation's oldest operating restaurant is there, and they've been serving New England clam chowder since 1836. That's Union Oyster House. You should all go. I've had it. It's delicious.

Amanda Nichols: It sounds yummy.

Stephanie Otts: I'll have to check it out.

Stephanie Otts: This podcast is a production of the National Sea Grant Law Center at the University of Mississippi School of Law. It is made possible in part by funding from the NOAA National Sea Grant College Program. The statements, findings, conclusions, and recommendations are those of the speakers and do not necessarily reflect the views of NOAA or the U.S Department of Commerce. Editing and production assistance was provided by Kerrigan Herret, a senior journalism student at the University of Mississippi. Thanks for listening.

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