

Hello and welcome to the Great Lakes Environmental Research Lab Podcast. I'm Aaron Hunter and I'm Konrad Kasparschuster and we're here with Dr. Hank Vanderploeg to talk about what he does out in the lab and in the field.

1. What do you say you actually do here at the Great Lakes Environmental Research Lab?

I study the food web. I study phytoplankton, zooplankton, mussels, and fish trying to gain an understanding how these different components of the food web relate to each other so that we can manage the system properly.

2. What would you say got you interested in this field of study?

Well, actually, that is a philosophical question. When my dad took me fishing when I was five years old and since then I developed a strong interest in the environment and then I took courses in college and graduate school and eventually got a degree in oceanography.

3. Why does the rise of the invasive species like the Quagga mussel have such a big impact on the marine system of the Great Lakes?

Well, the Quagga mussel represents an interesting case. The Great Lakes has never seen anything like that except for the zebra mussel, so this is a completely alien organism and in the case of the zebra and Quagga mussel, they remove the plankton, which is the base of the food web for the fish. The other thing is they promote light in the system by removing particles and we get nuisance growths of algae in the near shore. The other thing that happens is that they selectively feed on different kinds of algae and we get promotion of harmful algal plumes. So, for a number of reasons, we're concerned.

4. Why are the zooplankton so important in the marine environment?

Ok, the zooplankton are those small custodians that are about 1mm in size. They are very tiny, but they are the first thing that eat the phytoplankton and every young fish feeds on the zooplankton. So that they are the dominant feeder on the phytoplankton and which feed the fish.

5. What are some of the tools you use to study the zooplankton?

Ok, first of all we are interested in any organism that is where are they? What are they doing? And how many of them are out there? So we use special tools to determine their abundance and distribution in the lakes so we have special equipment called plankton survey system to study them over broad areas of space

to describe their special distribution unrelated to their food the photoplankton as well as to the fish. And then we bring them into the lab and observe them up close to see how they related to, for example the photoplankton, so we do both field work and laboratory work to get a full picture of what these guys do.

6. Is there anything else that our listeners would like to hear that we did not ask you?

Interesting question, I can say that I enjoy working very much here at NOAA, where we are in the position where we can do important research to understand what is going on. And at the same time do meaningful research that's of service to the public.

Well thank you for taking time out of your busy schedule, and thanks for answering our questions. We hope your research goes well and that concludes our session with Dr. Hank Vanderploeg.