Bloom News 2018

Jordan: Alright, well, I'm here with Dr. Larry Antosch to talk about algal bloom 2018. We just got done watching and listening to the forecast for the NOAA (National Oceanic and Atmospheric Administration) bloom forecast for Lake Erie. So we just wanted to kind of set the table what was said, what it means and just we're right in terms of the rest of the season for the algal bloom. So I guess we'll start with what is the algal bloom forecast?

Dr. Antosch: The annual forecast is based off of a series of models that are running simulations looking at streamflow down the Maumee, weather conditions, lake conditions and using the back data to make a projection as to how severe or how large the algal bloom will be. This is like the seventh year that they've been doing it and they've come up with a severity index of 1 to 10 in terms of how large or the extent of the bloom is in August. So, for this year the projection was that it should be somewhere around a 6. So not super high, not super low something kind of in the middle, again based off of free flow or in the amount of rainfall runoff that's occurred from beginning March through the end of July.

Jordan: Yeah, and I guess what's fueling that? I know it's a hard question to ask, it has a lot of things that are going into it but what was explained as the main driver for having such a large bloom this year?

Dr. Antosch: Well the driver is based off of again how much rainfall and runoff and with that the amount of phosphorus that's being transported from the Maumee River into the western Lake Erie Basin. So the storm events, the number of storm events, how severe they are, how large they are, all have a role to play. What we've been seeing over the past several years is that the average amount of streamflow or the average discharge in the Maumee River has been going up. And with that, that is having a direct influence on the amount of the load or the amount of phosphorus that's being transported.

Jordan: So not exactly a sharp increase in the amount of nutrients coming off of the landscape but more so a higher amount of water with a concentration of some sort of those nutrients going in. So there's a cumulative effect more so than increasing concentration.

Dr. Antosch: Right. We're not saying that all of a sudden the numbers in the amount of phosphorus being transported in the river itself are going like from 5 to 10, basically the total amount. As you started looking at loads or talking about loads, where it gets a little I don't want to say complicated, it's a concept, it's a concentration times the volume of water. So if the amount of water is going up even if the concentration is going down you're still seeing a higher amount of material being transported?

Jordan: And I guess explain, you know we saw a couple of different presentations and explain who's behind the information and where is it coming from? I know we're backtracking a little bit, but explain the tone of the forecasting and who was behind all that information?

Dr. Antosch: The ability to be able to do a forecast is really based on the fact that the Heidelberg University the water quality lab up there has been doing monitoring on the Maumee River since the 1970s. So that long term water quality monitoring data set or information really allows this projection to take place. NOAA, the National Oceanic and Atmospheric Administration looks that though with satellite imagery in terms of how much algae is present. It can determine the presence of where it is within the basin because of the satellite imagery. So that information gets used as projections on water temperature and wind and all that to make the projection in terms of how large or what's the potential extent of the bloom ultimately at the end of the year.

Jordan: Yes, you said water temperature so that's one obviously everyone knows how hot it's been. I wouldn't say unseasonably but it may be more so the more what we are used to in recent years and you know the surface temperature has increased sharply and they mentioned that it's you know maybe that was driving some of the earlier quantity of the bloom. I guess it can go either way we talked to kind of off line after the forecast that you know the bloom size from here on out is determined by the fuel source that it has, that is in the food which is phosphorus, so I guess it could go you know go the way that they think it could go or maybe it could it could kind of peter out a little bit. If that source isn't there.

Dr. Antosch: Yes. Usually what happens is we don't really start seeing the algal bloom the extent of the large area with algae until August. That's when the water temperatures get to the point that we're dealing with Celsius or Centigrade type numbers by 20 to 25 degrees. What we're seeing this year is that the water temperature typically now is probably somewhere between 5 to 10 degrees warmer than it typically is. So the lake is getting warmer sooner, because of that we are seeing some beginning algal blooms being formed or taking place. And you know like you said as we talked off line, there's only a certain amount of food nutrients that are there. And so if the algae that's growing today is eating and utilizing the nutrients taking one or two bites out of that donut, come later in the year the amount of nutrient there or amount of phosphorous nitrogen there will be less and we may not see as large of a bloom. It's kind of I don't want to say a catch 22 but it's almost anyone's guess. But right now we're seeing some early algal blooms and that potentially could have an impact on reducing the extent of what we see later in the year.

Jordan: That's interesting so I guess I'll set it up by saying I feel like the tone of the forecast was very science-based and scientific. Here are the numbers that we are seeing, there wasn't a lot of pontification about blame or sources as much as it was, this is just what the numbers are saying, and I thought Dr. Laura Johnson from Heidelberg did a good job of saying," hey you know farmers are doing a lot of these things" and listed some conservation practices. So what's the message moving forward? I know this is just one point in time and there's a lot that goes into

this what should we continue to emphasize as a farming community when it comes to reducing nutrients that are coming into Lake Erie?

Dr. Antosch: Well I think one of the things is that and again the numbers I think are showing that the conservation practices nutrient management, fertilizer management, soil testing, cover crops all of that are having an impact and having a positive impact and influence on our water quality. There's probably more that can be done, more opportunities are available to do more and also with the ongoing research and things that we're seeing, not only those types of land management practices, but we need to start thinking about how do we manage the water in a greater extent. If we are seeing higher frequency of the short duration storms of the skies opened and we get the te inch or two inches in a relatively short time, we need to think about it and start implementing practices or things that will start slowing down that water. Drainage, water management some other retention type things. So, continue what we're doing, start looking at how can we manage those extreme events better and to realize that it takes time for the systems to readjust and so things that we're doing today may not have their full impact in terms of making a difference until 5 or 10 years from now.

Jordan: That's a good point. So I guess we'll wrap up here. So in conclusion our wrap up is kind of a moderate to high bloom forecast, less than last year, more so than some years kind of in the middle maybe of what we've seen over the last 10 or 12 years. You know rain is the biggest driver, the flow of water coming into the bay is one of the biggest drivers of that nutrient getting there. If anybody has any questions, needs more information on this this is obviously an ongoing issue. I would suggest visiting ofbf.org and then also Larry what is your email address if someone wants to get ahold of you?

Dr. Antosch: Sure, it's lantosch@ofbf.org.

Jordan: And mine is jhoewischer@ofbf.org. We encourage anyone who has any questions, concerns, thoughts, ideas or just wants to dive deeper into any of this information, feel free to reach out.

Dr. Antosch: The other thing just to remember is that there is a weekly or bi weekly bulletin that that NOAA puts out so you can track the bloom and see where things are at, and just because there is an algal bloom present it doesn't have any direct relationship or necessarily with the amount or the toxicity of the bloom but just because algae or blue green algae is present doesn't mean that it's a harmful environment.

Jordan: Alright, thank you.