

Rain, shine and repeat for Minnesota's summer

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Minnesota's recent weather patterns have featured an annual increase in precipitation despite a warm winter and last year's drought.

KAYLIE SIROVY: Hello everyone! My name is Kaylie Sirovy, your host from the Minnesota Daily. Right now, you're listening to In The Know, a podcast dedicated to the University of Minnesota.

Let's talk about the weather here in Minnesota. Recently, we've experienced a solid week of non-stop rain from June 15 to the 22 to be exact, and just a lot of rain in general. Quite the switch-up from the warm winter we just experienced and the drought we faced last year. For those of you who are new to the land of 10,000 lakes, this might seem a bit strange. But even as a Minnesota native myself, I found it a little unusual. But, hey, it's Minnesota and our weather is always full of surprises.

Although perhaps a few too many surprises. Pete Boulay, the assistant state climatologist at Minnesota's Department of Natural Resources, said that the state has experienced an increase in precipitation across the board.

PETE BOULAY: You know, just looking like, let's say the Twin Cities, you know, we think of in terms of normal. So every 10 years, we take a 30 year average of precipitation and looking at the previous normal period to this one, precipitation increased. You know, if you just look at basically in June, in May, precipitation in the Twin Cities increased about a half an inch. You know, on an annual basis and in June, it's increased too. So overall, the trend has been for wetter conditions.

SIROVY: You might be wondering what this means for us. Well, the rain has definitely greened things up around here, making our already beautiful state even more lush. The lakes and rivers are getting a much-needed refill, which is great news for all you fishing and boating enthusiasts out there. And let's not forget about the farmers as they're getting relief after last year's drought conditions. We might now be called the land of 100,000 lakes though!

BOULAY: Whenever we've had droughts in Minnesota in the past, and we've had some big ones, sometimes they get broken in spectacular fashion. And we've had some classic examples of this, you could go all the way back to 1910, one of the driest years on record, right.

And then 1911, it was one of the wettest years on record. 1976, another huge drought. 1977 again, super wet. So, you know, and this has happened in the 2000s, too. 2012 dry, then we have 2014 come along, totally different. So, the fact that we've had these rapid changes in weather patterns from really dry to really wet, it's just part of our climate.

SIROVY: According to Boulay, climate change could be contributing to the increased precipitation due to shifting weather patterns, leading to more overall rainfall. While we can't attribute any single storm or particular wet and dry seasons to climate change, the overall trend shows that Minnesota is becoming wetter. Despite experiencing dry seasons, the recent droughts have been among the wettest on record, if that makes any sense.

BOULAY: So, while we did have a drought for the last couple of years, we've certainly seen a lot worse conditions, a lot drier conditions in the state. So, 2019 was the wettest year on record in Minnesota, and is this a return to the 2010s? It remains to be seen.

SIROVY: So, a drought could still happen next year or maybe it will again be a really wet season. According to Kenny Blumenfeld, the senior climatologist also with the Minnesota Department of Natural Resources, said that we just can't accurately predict that.

KENNY BLUMENFELD: I think the question everyone wants to know, are we going to stay this wet? Are we going to, you know, dry out a lot? Is it just going to become normal? Those same seasonal forecasters don't really have evidence one way or the other that's causing them to think we'd be wet or dry, so they call it equal chances. We've got sort of equal chances of being wet or dry.

Now just to show how difficult this is, the whole period that has been wet, going back to basically the spring equinox, that whole period had also been projected as having equal chances for above or below normal precipitation. In other words, being wet or being dry. And obviously we've been decidedly very wet. So it just shows that what they project doesn't necessarily tell you.

You have to be careful in your interpretation because it could very well remain quite wet. Right now, for the next three weeks, those same forecasters see Minnesota remaining in a pattern that's more wet than dry, meaning exposing us to a greater frequency and/or greater total amount of precipitation than would be normal this time of year. So, it doesn't mean that we're going to go in a pattern like we just were in where we're most days for a 9 day period or a 10 day period.

SIROVY: Blumenfeld mentioned that Minnesota has climate records dating back to the 1800s, with specific daily and monthly data. That's a lot of information spanning a lot of years, so all the weather events are competing with that. He also pointed out that a climate event can be important even if it's not the most extreme on record.

BLUMENFELD: One of the things that's so interesting about our world, the world I inhabit as a climatologist and the people who want climate information, is there's been this really interesting fixation on number one. Being like the most extreme. Is this the worst ever?

Is this the, and you know, think of all the competition that you have for number one, for being the, you know, the best of, you know, over a hundred others at something. Having the best grades out of a hundred people or having, you know, being the best at swimming or dance or softball or whatever, you know, whatever activity you do. There's a lot of competition for that number one spot and that's true in climatology.

So there's a lot of competition for being the hottest or being the wettest and when you achieve a number one, it's a big deal and you can have things that have really major consequences without them even being close to to number one because our climate history does include a lot of substantial extremes that we can't necessarily comprehend.

SIROVY: With the climate changing, our top rain events and even our top-ten rainy days are on the rise, according to Blumenfeld. It's like our extreme weather leaderboard keeps getting bigger. Adding more years to Minnesota's already wild climate plays a part, but there's also this ongoing uptick in rain and temperatures as I'm sure a lot of you have seen.

BLUMENFELD: So I guess that's all to say, you know, don't maybe convince yourself, "This is the worst. This is the wettest it's ever been," because history has a lot to teach us and on the other hand we need to be prepared for more of this and as we move forward we need to understand that really wet conditions like the ones we're in are gonna maybe even have more precipitation in the years and decades ahead. And we need to make sure that we're prepared for that at the community scale and at the regional scale. And the same is true with temperature.

BOULAY: Not all months have increased. What we've seen is it's kind of interesting how, in general, in the Twin Cities, gone up about 3 percent from the old normal to the new normal. So, you know, it all kind of adds up a bit over time and our normal precipitation has been increasing, you know, precipitation has been increasing ever since really the dust bowl, the thirties, but some months are wetter than others. Some haven't changed a whole lot, July and August about the same.

October has gone up a bit. November has gone down. So not every month has been equal there. So wetter springs, somewhat drier November's. So one thing has really increased and it's one of our driest months is February. February was always the month you thought nothing would happen, but that's been one of the bigger increases percentage wise is that and May. It's not a blanket like everything is increasing. It's kind of a hit or miss kind of thing, too.

SIROVY: Looking ahead, Blumenfeld anticipates similar trends like the one we're in now, possibly with more variability and additional warming. Experiencing another winter as strangely warm as the recent one might take some time, but given the ongoing warming trend, it can happen within our lifetimes.

Winter warming is happening the fastest, although other seasons are a close second. However, Blumenfeld cautioned that these patterns won't repeat exactly every year, as dry periods are also part of this cycle.

BLUMENFELD: It's really hard to forecast seasons ahead. I think because we know we're switching into La Niña, which means the Pacific Ocean near the equator is cooling, going through a cooling phase, and that does tend to be associated with more winter like winters here in Minnesota. Same as the way that El Niño tends to be associated with warmer and less winter like winters.

I think it's safe to assume that we'll have at least one really noticeably wintry period. If we were to look at any of the recent years and decades for a guide, I think the long term forecasters would be safe suggesting that, you know, the, the latter part of winter centered on February would be maybe colder or snowier than what is normal. But for the months ahead, between now and then, for the rest of the warm season or the growing season, it's really hard to know.

NOAA, or the National Oceanic Atmospheric Administration, part of the federal government, they have the Climate Prediction Center, which actually tries to make seasonal forecasts. And their forecast for the rest of summer for Minnesota, really the period right through September, is that we have better than even chances of being warm.

SIROVY: That's the thing with weather, we all know it's unpredictable. Whether it's sudden rain showers disrupting summer picnics, unexpected thunderstorms during outdoor activities or the excitement students feel as they enjoy their break under the sun. Minnesota's weather blends sunshine and showers and that keeps us all on our toes. I look at Weather.com all the time, but I still never know what Mother Nature will cook up next. As of late though, I always bring an umbrella with me.

BOULAY: Up until the flooding, you know, in some ways this was a good thing because we were really saving money in irrigation, people that would irrigate weren't needing to irrigate. And that does save money and save water, but then the flooding came and of course that's a lot worse and there's a lot of hardship there too. It's past beyond being a good thing. You know, it was good to get out of the drought. Now it's a bad thing.

SIROVY: Personally, I think it's fascinating how the impacts of weather can vary so widely and Boulay makes a valid point about the dual nature of weather events. How they can initially save resources like water and money through reduced irrigation, yet quickly turn into

devastating floods, such as the recent incident on the Blue Earth River in southern Minnesota.

As I record this episode, the failure of the Rapidan Dam on one side has caused a nearby house to collapse.

BLUMENFELD: You know, some of some of the people who probably will listen to this are students and student age, and so they might not think much about the 2010s the way that older people do, but in the 2010s, we had a very wet period and really 2019 was extremely wet. So we did actually have very high water and flooding issues commonly from about 2014 through 2019 in Minnesota. Nothing quite as widespread as what we just had. But in many cases, we had situations that were worse than what we've had, but they were just more localized. And that seemed to happen regularly during the 2010s.

I would say the last time we had something this widespread was probably June of 2014, which still stands as Minnesota's wettest month of any month on record, June 2014. And right now we're not competing with it, for that record, it's still way ahead. So just to kind of put it in perspective, it's like, you think this is bad, imagine having 25 to 50 percent more rain.

SIROVY: This episode was written and produced by Kaylie Sirovy. As always, we appreciate you listening in and feel free to leave us an email at podcasting@mndaily.com with comments, questions or concerns. I'm Kaylie, and this has been In The Know.