

# Way Over Our Heads 4-2-2021

Fri, 4/2 6:00PM 28:31

## SUMMARY KEYWORDS

spring, tornado, week, minnesota, warm, twin cities, freeze, plants, kenny, year, temperatures, conditions, march, parts, degrees, running, trees, jim, early, precipitation

## SPEAKERS

Jim du Bois, Kenny Blumenfeld



Jim du Bois 00:00

Is this spring real... or not? This is Way Over Our Heads. It's a weather and climate podcast. I'm Jim du Bois. Kenny Blumenfeld is a climatologist. Kenny, it sure feels like spring. We know it's meteorological spring, it is astronomical spring. But are we counting our chickens before they've hatched, to use an antiquated cliché?



Kenny Blumenfeld 00:25

Yeah, that's a good question there, Jim. It...what is it? 330 that we're recording 330 on Friday afternoon. Looking out the window. And we're, you know, we're just a month away, and hopefully a couple vaccinations away from doing this at a distance, but outside kind of in person.



Jim du Bois 00:45

Yes. anxiously looking forward to that.



Kenny Blumenfeld 00:47

Yeah. But I'm looking out the window. And wow, what a day. And I mean, I can see the numbers. And I'm, you know, as soon as we're done, I'm heading out. Yeah, but think about, you know, how nice it's been. And now also think about how much that's been sort

of normalized. I mean, we've been running warm since the first or second of November, basically, about 70% of the days since the beginning of November, have been warmer than normal. So only 30% have been normal, you know, right at the normal temperature, or slightly below, or even way below normal. So, you tend to forget that, you know, even though we know we're gonna get a lot warmer this weekend, you tend to forget that a day like today is still 10 to 15 degrees above normal. If you think of what's the normal, you have to subtract 10 to 15 degrees from today. And that's where you start to get things that are kind of interesting, because we can have, you know, astronomical spring, that's just the beginning of kind of the warmest half of the year astronomically. And we can have meteorological spring, which is kind of the, you know, the end of the coldest three months of the year and the beginning of sort of the first half of the warmer six months of the year. But what is spring? What do you think of when you think of spring, Jim, what is it?

**J** Jim du Bois 02:20

Well, Kenny, that's a really good question. I suppose I think immediately of warmer temperatures, of things beginning to slowly green up, of plants reemerging, of precipitation. I mean, I normally think of spring as a very wet time, typically. So that's kind of my. I guess, how I would characterize spring.

**K** Kenny Blumenfeld 02:44

Sure. And you know, so and that's, I think that's right. You know, spring, we call it the spring equinox, but it's really the vernal equinox. And the root of that is essentially green. So, it's the greening equinox. And so what spring really means, to me anyway, when I think of it, I'm really thinking of May. You know, in May, everything just turns on lush. And you got the, you know, in southern and central Minnesota, where we have all the deciduous trees, the leaves get big and green and fat. And when I see them all out, and they're just that bright green, I know that spring has begun, and we're about to turn into summer, in fact, and really, until we get to green up, this sort of functional spring hasn't really begun. And so your question about is spring real kind of gets at this notion of these false springs that have always been part of Minnesota's climate, but they've become a little bit more common as, well, they've become somewhat more common as our climate has changed, and as we've gotten warmer, and we've had more sort of warm infiltrations into winter. And what a false spring is, in a sense, is, it's the arrival of growing season-like conditions. So warm weather, where you have essentially growing degree days, you know, temperatures that are certainly above freezing all day long, but are also, you know, in some cases, spending enough time above 45 or 50 degrees that you start to stimulate that primary production, and then also not just primary production, from photosynthesis, but then also just plant growth. And once plants start growing, at least the dormant ones,

then it's sort of functionally spring. But the thing is, with these early springs, you're still really susceptible to a freeze. And that's one of the reasons is, you know, we've always had this variable climate so we're used to occasionally having a really early kind of spring like condition. But those early spring like conditions are often followed by you know, a pretty good freeze. So, I just said that we've been, you know, we're 10 to 15 degrees above normal. And we've been spending about 70% of the time kind of above normal. But this time of year, if we're below normal for temperatures, that actually means, probably below freezing at night. And in some cases, it might mean a deep freeze. And so, you know, instead of stimulating plant growth in April, and especially May, which is kind of what's normal. And that's when it's usually pretty sustainable. When you start stimulating plant growth in late March, and early April, then whatever does grow if it's not super hardy, and I'm no horticulturalist, so I can't really speak to all this different species that are hardy, I just know that when, if it's not super hardy than one of those pretty dependable freezes is going to knock some amount of those things out. And in some cases, they don't recover. So, in 2012, we had incredibly warm March, much warmer than we were this year. I mean, we had a warm March this year, but nothing like 2012. And so everything started going, even the soft fruits in the orchards started blossoming. And in parts of Michigan and Wisconsin, you know, you had the cherries were growing, the tart cherries, and then in April, just a pretty normal deep freeze set in after that incredibly warm and productive March. And it wiped out billions of dollars of crops. So these early spring episodes are really fun for you and me because we go outside, but they're a little bit risky for those other things that grow because we are still susceptible to frost. And you know, one of the things that's interesting, Jim, is that if you look at, you know, the the earliest date of 50 degrees, or the earliest date of 60 degrees, those are pretty dependably marching forward through the calendar, they're marching towards, you know, they've marched now, kind of, through March and into, they're becoming more common, and even in February, in some cases, so you see, the sort of earliest notion of spring is definitely getting earlier. But that's happening faster than the rate at which we're sort of losing or altering the final date of freezing conditions. So, we're sort of expanding this window of vulnerability, because spring now can start earlier, but we haven't really seen much change on the killer, that sort of final killing frost of the season. And it's that final killing frost that, you know, especially if stuff's been growing for a couple of weeks can really pack a punch. So kinda interesting. You know, phenology this spring is two weeks or so ahead of schedule, meaning, you know, everything's advanced by about two weeks faster than where it would be that includes ice out, it includes the kind of emergent plants that are usually the first ones to come up. And so yeah, that's sort of a two week additional exposure that we have to potential loss of those, especially the less hardy crops, the less hardy varieties, from, you know, what seems like an inevitable deep freeze, if not covering the entire state, at least in parts of the state. So that's kind of what I've been thinking about.



Jim du Bois 08:37

So what you are suggesting Kenny is don't get too excited and run off and start planting your annuals quite yet.



Kenny Blumenfeld 08:46

Yeah, you know, whenever we would talk to, so my job, we often will talk with these master gardeners. And for folks who don't know master gardener, these are people who really like gardening, and they, they learn special tips and become kind of educators through the University of Minnesota Extension program. And there's kind of a continuing education, you get a certain number of sort of hours, and then you're a master gardener. And these these people really know, they're, they really know their plants, and especially their flowers and their wild flowers, and they, they're great, but they're so eager. It's not uncommon that they have kind of a horticulture day sometime in March or April. And if the weather is great, they'll come to the meeting with you know, their gloves and their trowels and you know, the pads to kneel on. And yeah, great, get out there. But just be careful, as you said, because the first true spring kind of thaw and warm conditions are definitely advancing forward on the calendar but we have not really witnessed much of a change in the dates of the final freeze. And so that you know, that just tells you that we're still...even as spring starts earlier, it's on the other hand, the sort of deadly growing part of that non-growing season isn't really ending any earlier. And so it's, it's there, like a beast guarding some kind of a passageway. Oh, you think it's summer? Well, I got news for you, it's gonna be 22. Good luck.



Jim du Bois 10:26

Well, Kenny, I wish I would have been keeping records of this. We've been at our house now for 20...23 years this July. And we have perennials. And we've had them since basically the day we moved in. The one thing I have noticed, and again, I really wish and maybe it's a note to self to start keeping a record of this, but it seems to me that emergence has gotten earlier and earlier for our daffodils, for our tulips, even the rhubarb. But we saw emergence with the tulips starting in, I think, the third week of February. And we have some pretty good growth right now. No blossoming, obviously. Rhubarb emerged about three weeks ago, and it just seems again, and I can't, you know, reference any notes I've taken. But it just seems that things are emerging earlier in the late winter, early spring. But to your point, we still wait until at least the 15th or the 20th or so of May to plant our annuals because that freeze possibility is still there.

K

Kenny Blumenfeld 11:39

Yeah, no, it's it's a great point. And I think your observation is supported by the science. And we should be clear, not every year is like this year. And so, we're two weeks ahead this year, we were probably five days ahead or so last year. But in 2019, we were behind 2018 because of a snowy and cold April, we were a little bit behind for some of those emergents. But then, you know, the main kind of growing season kicked in with a vengeance, because May was quite warm. And 2017, we were way ahead in 2016, we were way ahead. So when you average it out, you know, it's again, it's not that every single year, we're seeing this, but when you average it out, most studies confirm that spring, you know, has basically started three to five days earlier on average now than it did historically. And that's in the central and northern parts of this continent. But in any given year, you might be two or three weeks ahead of that, or in a year like 2012, where you're a full month ahead of the game. I mean, we had 80 degree conditions in March, multiple times that year. So, I mean, you, everyone, we were all fooled. I mean, it wasn't just the plants, it was the people too, I mean, people are out wearing shorts, and you know, putting away all of their winter stuff. In that year, it was a safe bet. But we've had other years where, you know, winter still makes a pretty good comeback even after, even after a really warm period in February or March. And I'm not suggesting that winter's going to make a comeback. I'm just saying that, you know, the in in northern Minnesota, the median date, for the, that means the midpoint date for the final heavy freeze of the year, so I mean, 24 degrees Fahrenheit or lower, is still the final week of April. That's in northern Minnesota. And even in southern Minnesota, that reading of 24 degrees or lower, occurs after today's date about 80% of the time. So, it's it's not it's not that doesn't mean we're gonna get a blizzard, or we're gonna go into some sort of really deep freeze, it just means if it's a normal year at all, we should expect to go well below freezing, and not just in far northern Minnesota, but even in southern Minnesota. And so you know, maybe it's not a normal year, but we just came out of a pretty good deep freeze just the last couple days, you know, after after a warm week, we ended up with temperatures in the teens and 20s and the one group of people who really love this Jim, you know, because if you if you run an orchard, it's driving you nuts. These false springs are deadly. You can take out your business for an entire year. Or you have to come up with some interventions. But the syrup people they really love...

J

Jim du Bois 14:40

Oh sure, I never thought about that Kenny.

K

Kenny Blumenfeld 14:43

They go wild over this. And in 2017 we had this kind of behavior where we had really early

ice out. We had a heatwave, basically in February, and then it got cold and a lot of the lakes, some of the lakes actually began re-freezing and the syrup people just loved it. The false spring was a real boon because, you know, that differential pressure on the trees that actually constricts and then allows the syrup, the sap to flow freely. They love that. It's a little different, though. You know, so they they they don't mind these fall springs so much the temperature variations are really good for syrup. But yeah, most of the most of the especially soft fruits can hit them pretty hard.

J

Jim du Bois 15:30

Well, we had an above average month in March in term of temperature. Below average, I would assume or maybe close to average here in the Twin Cities for precipitation. But it's definitely dry out there. We had some much needed rain last week in parts of Minnesota. I think what about an inch and a half here officially at the airport? Thereabouts?

K

Kenny Blumenfeld 15:51

Yeah, yeah, actually, Jim, we ended up so good observation, we were top 10 across the state for temperatures in March. It was just it was a really warm month. If you go up to International Falls, where they have a shorter official record, they were more like top five. But it was, it was a warm March, I think we finished number eight. And that's out of like 140 some years in the Twin Cities. We were actually in the Twin Cities, and the southern third or so of Minnesota, we were wet for March. And that wet week that we had last week kind of caught us up for our annual precipitation, we're right on target. now. However, you got to take it with a grain of salt because we've been running mostly precipitation deficits since last July in the Twin Cities area. And even longer than that, if you go into Southwestern Minnesota, so we are still behind kind of on the water year precipitation. And just, you know, we definitely have precipitation deficits. Even though we did get a pretty good soaking last week, you know, Duluth, the Twin Cities, the choice about what to do with the drought map, every week, a new drought map is published. And the the current version of it, we were able to remove the abnormally dry conditions from basically the Duluth area down to Waseca and through the Twin Cities. So there's no longer kind of pre-drought conditions in that area. But the rest of the state is either in that abnormally dry, or in some cases even moderate, and we've got two little slivers of severe drought. So, an interesting, interesting pattern. But we, as we talked about the last couple of times to this is a critical period. We don't have that vegetation really booming yet. And so we'll take any water we can get to offset those moisture deficits, because it'll all go right into the ground. So it's good time to replenish and to make up some ground.

J

Jim du Bois 17:56

Well, we do have a warm weekend ahead. Certainly temperatures in the 70s here in the Twin Cities on Saturday, Sunday and Monday. And what does it look like Kenny? Are we looking at the potential of some rainfall next week? Or is it iffy? Where do we stand with that?

K

Kenny Blumenfeld 18:17

I think it depends on where you're listening from. If you are in northwestern Minnesota, you know the prospects just, they have not been good for a while and they don't look much better. I mean, at best, you've got about a 40% shot at, you know, measurable precipitation over the next week. That area is also going to be pretty warm. In fact, there's going to be warm conditions, as you mentioned, all over the state, especially Saturday is where I think the whole state will be sunny and much warmer than normal. Once we get into Sunday and Monday, I think the southern and central parts of the state so the Twin Cities area, parts of western Minnesota, but not so much the northeastern part of the state will remain very warm, and also probably sunny, but the clouds are going to start filtering in there and keeping some of the temperatures down. Yeah, this is Jim du Bois weather. I mean, we're just, you know, what, 10 degrees short of beach volleyball. I mean, it's going to be, this weekend, temperatures are going to be in the 70s throughout southern and central Minnesota. We're probably going to see widespread 80 degree readings along and kind of the southwest of the Minnesota River on Sunday, if not Saturday, and then we start getting moisture working in protection and start to get kind of muggy as we get into Monday and Tuesday. So, pretty warm conditions, and then and then we get this big precipitating weather system that looks very promising for the southern half to 1/3 of Minnesota where I would not be surprised to see heavy precipitation and maybe even if we're lucky, knocking that sort of drought area back even further, that would be nice. Very promising, but I don't see a lot of hope for especially Northwestern Minnesota, at this point, and these, these are areas where they're running, you know, deficits that are pretty sharp. And you know, we're keeping an eye on them, because they, you know, they are, on one hand, the most arid part of the state, so you expect less precipitation there. But even relative to what they usually get there, they're running pretty low. So, yeah, so I'd say a nice, great weekend for getting outside. Just be careful. You know, today, as we're recording this, there's basically fire weather alerts across Minnesota, those red flag warnings, because it's dry, it's been windy, you kind of expect that this time of year, because we don't have the plants conducting moisture into the atmosphere. But it's been, you know, when you factor in the also additional dry conditions, it's just there's a bit of a fire hazard. So we'll all have to be careful this weekend as we enjoy being outside, but it's gonna be warm. And then as we get into the beginning of next week, you know, northeastern Minnesota will cool down a bit, but the

southern and western parts of the state will remain warm, and then even muggy. We're gonna see thunderstorms, Jim. I'm almost positive we'll see thunderstorms throughout southern Minnesota, probably Monday. And then again on maybe Tuesday and Wednesday, before we have just kind of a steady rain. So yeah, kind of interesting. And then we're going to probably get into a cooler pattern. And we'll see if any of those big killer freezes follow that cooler pattern or if it's just more like sort of normal, which would feel cold for us right now.

J

Jim du Bois 21:41

Well, this week, we observe the 23rd anniversary of the Comfrey-St. Peter tornado. And, you know, it brought some memories back for me because that was the spring of 1998, I was teaching a class in Mankato, and I was driving down 169 once a week for the class. And I remember driving through St. Peter a few days after the tornado and looking up at the campus on the hill of Gustavus Adolphus and that campus had always been shrouded in trees. And you literally could see every building that previously had never been visible from 169. And I drove that route about, oh, almost three years ago and noticed, of course, some of the trees are growing back. But I have kind of used things like that like damage to trees as kind of a barometer as to how nature heals itself. And I remember as a kid, a tornado went through a grove of trees near Norwood-Young America, and we would drive that route out to my grandmother's farm. And I remember it was just a massive swath and then over the years, you would slowly see trees coming back. And I can't remember what year it was. But I remember driving through there and looking and thinking, you know what, I now would never know that there had been a tornado that had gone through that grove of trees. I mean, there was a complete healing. And I assume we'll get to that point, probably at some point in St. Peter in those areas that were hit, but kind of interesting to see how nature repairs itself after a calamity like that.

K

Kenny Blumenfeld 23:19

It is, and you know now with the advent of satellite technology, you can often see, you can often see the kind of tornado scars from some of these big events. So, I also, so for listeners who don't know what we're talking about, there is a pretty massive, one of the more significant tornado outbreaks in Minnesota history that's been recorded occurred on March 29, 1998. And one of the tornadoes, there were multiple tornadoes, but it was all really from the same storm. So, if you blurred your eyes, you would kind of see one tornado track, although after Todd Krause and the Weather Service had kind of done their surveys, what it really was was multiple tornado tracks, but roughly along the same path. And one of the tornadoes was 60 some miles in length where it was on the ground continuously for over 60 miles. And when that tornado family moved into St. Peter, the

tornado width on the ground was about one mile. Most people can't really fathom that. You picture a tornado from the Wizard of Oz or you picture those kind of classic funnel or elephant trunk-shaped shaped tornadoes and this was a massive thing. So, that tornado moved across the Gustavus campus, and it essentially swallowed the entire campus. You know, it wasn't as if it moved across campus and, you know, one area was getting hit and then it moved away and hit another part of campus, it was like there was a moment where it was covering the entire campus. This is a tornado that for those of you who live in the Twin Cities, it would be wider than Lake Harriet. If you just freeze it in time, so it was a big deal. And these tornado scars, they do take some time to heal. I remember when I my childhood tornado went across parts of Lake Harriet went through the Roberts bird sanctuary.

**J** Jim du Bois 25:22  
1981, June of 81.

**K** Kenny Blumenfeld 25:25  
Yep. And the scars were there for about 15 to 20 years. You know, if you were to go into the bird sanctuary by the late 1990s to early 2000s, it would be hard to tell, because you know that once a tree's 20-25 years old, you know, it's harder, it's kind of hard to tell, is it, what's the difference? And plus the damage in that area was pretty complete. But yeah, for, you know, good 10-15 years, at least, you could very easily tell that this was a disturbed natural landscape. Yeah, so it's, it's always interesting, you know, we've had other tornadoes that have hit Minnesota, the one that went through North Minneapolis in 2011, as of a couple years ago, it was still the track was still visible from satellite. So, you could still see it on, you know, Google Earth imagery or satellite imagery, you could still make out that swath of damage. I think, you know, as of probably 2020, or so, I believe it's harder to make out. But yeah, it was visible. So...

**J** Jim du Bois 26:35  
Well, speaking of severe weather, we have Severe Weather Awareness Week coming to Minnesota starting, I believe, on the 12th of April, and going through Friday, the 16th of April. There will be a tornado drill on Thursday, the 14th, weather permitting, in other words, if there's severe weather, it'll be postponed to the next day. But Kenny, since it is severe weather season, next time we chat, we should probably talk about that.

**K** Kenny Blumenfeld 27:02

Yeah, indeed. Especially since you know, we got off to an early start. We've already had tennis ball sized hail in the Twin Cities. That was back in early March. So yeah, I think a good refresher for all of us on on severe weather and what the risks are and what it is that we're, and by the way, just in case listeners are interested if you type just Minneapolis into Google Maps, and then switch the view to satellite, you will see a faint tornado scar running from southwest to northeast, it's still there. And it's across the northwest corner, maybe eighth or so of of the city of Minneapolis. So, you can see it runs from just east of Theodore Wirth park right up into the border with Fridley. It's clear as day still. So, yeah, scars do remain on the landscape for sure.

J

Jim du Bois 27:57

Well, Kenny, enjoy this beautiful stretch of weather ahead. We'll keep our fingers crossed for some much needed precip coming up next week, and you and I will reconnect. We'll hopefully talk about the beautiful weather and some rain and talk about Severe Weather Awareness Week as well.

K

Kenny Blumenfeld 28:16

Sounds good to me. Look forward to a Jim. Thanks a lot, and enjoy the lovely weekend.

J

Jim du Bois 28:22

This is Way Over Our Heads. It's a weather and climate podcast. I'm Jim du Bois, Kenny Blumenfeld climatologist, we'll catch you next time.