

CATHY If you like cool nights and warm days, you are loving this weather right now. Let's take a deeper dive into what's happening with our weather. MPR's chief meteorologist Paul Huttner is with us right now. Hey, how are you doing?

PAUL HUTTNER: Hey, I'm doing great. Thank you. What a weird looking sky out there today with all that wildfire smoke?

CATHY Right. I know. So where is all this smoke coming from?

PAUL HUTTNER: Yeah, there are literally 100 of wildfires in the Western US, from California into the northern Rockies, Idaho, Western Montana, the real concentration there, Cathy. And they're just belching out these thick smoke plumes.

Most of that smoke between about five to 15,000 feet aloft. And the mid-level wind flow has been from west to east, so that's blown it right into the Dakotas, right into Minnesota. The thickest plume really over Minnesota right now. And those southerly winds that we'll have tomorrow finally will start to blow that smoke a bit to the north.

So the good news is most of the smoke has stayed aloft. I do see the latest MPCA air quality readings 53 just into the moderate range in the Twin Cities. And this is good because most of it's going to stay aloft.

Now sometimes, we get a cold front that can push in heavier air, denser air. We get subsidence, that sinking air in the lowest part of the atmosphere. That's the condition that can force that down to ground level, but it doesn't. Look like that'll happen this time.

The main plume too, Cathy, I'm watching, winds have shifted out in the Northwest. And so it's blowing north into Canada. So there's less smoke now to the west of Minnesota. So tomorrow, we might actually see a bit of a break in this smoke layer over Minnesota.

CATHY Winds are going to kick up as well, which are going to help. So can I ask you about the meteorology of smoke forecasting? I've always wanted to know about that.

PAUL HUTTNER: And it's interesting because there's a group at the Minnesota Pollution Control Agency of meteorologists that, of course, deals with our air quality. But increasingly, they've seen wildfire smoke events in Minnesota. So they are forecasting and tracking these plumes using computer models to do that.

And really what happens is it stays aloft, as I said. They're looking for conditions that will force that smoke to the ground and then see it in their monitors. So it's a tough thing to forecast, whether that subsidence will occur and get it down to ground level. But Pollution Control Agency meteorologists like Daniel Dix who used to work at the Weather Channel are on that every day.

CATHY Let's talk about rain. I know that there is rain in the forecast, starting what, tomorrow night?

PAUL HUTTNER: Yeah. And I think that's mainly a northern Minnesota event. And there could be some heavy rainfall up there. Basically, draw a line from Brainerd over to Duluth. I think everywhere along and north of that line will get an inch-and-a-half-- inch, inch-and-a-half of rain, but it'll be heavier as you go north.

So Iron Range, Northshore, Grand Marais, up toward Ely could get one to three, maybe four inches of rain mainly Thursday night, Friday, into the weekend. Twin Cities, I think, just a chance tomorrow evening. And then a better chance Friday for some afternoon thunderstorms, Cathy. The heaviest rains will be in northern Minnesota, but we'll have scattered thunderstorm chances into Friday and Saturday. And highs still in the low 80s, so it still feels like summer out there.

CATHY It'd be nice to get some rain in the Twin Cities. Of course, I've not been following this. It's been dry, but how dry--
WURZER: what's the-- how far off are we when it comes to rainfall amounts?

PAUL Well, about six inches overall on precipitation. Since the first of the year, Cathy, in the Twin Cities, we started wet
HUTTNER: and then it just shut off as we head into June and July. It's not as bad as last year.

86% of Minnesota was in drought status last year. 36% was extreme to exceptional. Now, it's 9% in Minnesota, but about 25% of Minnesota is what we call abnormally dry or in drought. And the moderate drought area really goes from the Twin Cities southwest toward Redwood Falls, southwest Minnesota. But severe drought now central and southern Twin Cities, especially Hennepin and Scott counties.

As I said, we're down about six inches this year. Water level in the lakes is dropping. You're seeing it in the lakes and the rivers. Lake Minnetonka came up in the spring to about June 1st about eight to 10 inches. But now, it's down. Again, lower than it was.

So the lakes are dropping. The rivers are dropping. The Minnesota River around Mankato, the reading 1.94 feet. That's close to the top 10 lowest of 1.8 feet back in 1974. So that drought area, lakes and rivers are very low. Northern Minnesota doing much better on rainfall this year.

CATHY We should remind people as we go into fall then to maybe water your trees and some of the-- well, I'm thinking
WURZER: about trees specifically because they could be stress going into winter.

PAUL Oh, absolutely. That's a great idea. And what they like is a long slow soak. So if you can just put the hose out
HUTTNER: there and turn it on gently, and that's the best way to water your trees and shrubs.

CATHY Climate cast. What's happening tomorrow on climate cast?
WURZER:

PAUL There's a bit of a rural energy, renewable energy renaissance going on, Cathy. Renewable energy, wind and solar
HUTTNER: actually creating some economic benefits in rural Minnesota, the USA as well. Studies show increase in jobs. Farmers are getting money for solar and wind leases on their land. Property values are actually going up faster in counties that have renewable energy than counties that don't.

Tomorrow, I'll talk with Elle Michelle Moore. She wrote a book called *Rural Renaissance: Revitalizing America's Home Towns Through Clean Power*. And that we will air on climate casts tomorrow, *All Things Considered*, in the 3 and 5 o'clock hours.

CATHY We'll be listening. Before you go, of course, you know that my track record was seeing the aurora is horrific. I've
WURZER: missed every single opportunity. I know. I know. So just tell me, are there better chances coming up here in the fall?

PAUL There are. And we've had a couple of decent events here in the last couple of weeks, especially in northern
HUTTNER: Minnesota. You really got to get away from the city lights to do that. But they're actually two times more likely in spring and fall.

We get about six days of geomagnetic disturbances, March, April, September, October versus three days in the summer and winter. And researchers call that the Russell-McPherson effect. That basically around the equinoxes cracks open up in earth's magnetic field and it takes less solar wind to cause an aurora. It's still evolving area of research, but hey, get out there. The fall equinox, 8:03 PM next Thursday, September 22nd, Cathy.

CATHY What? Already?

WURZER:

PAUL Yeah, I know.

HUTTNER:

CATHY I don't know. OK, it's fine. It's good. It has to happen somewhere along the line.

WURZER:

PAUL We're going to be OK.

HUTTNER:

CATHY I know it's going to be fine. I hope you have a good day. Thanks.

WURZER:

PAUL You too. Thanks, Cathy.

HUTTNER:

CATHY That's our chief meteorologist, Paul Huttner. By the way, you can listen to Paul later this afternoon with Tom
WURZER: Crann on *All Things Considered*.