



## TRANSCRIPT

May 2023 U.S./global climate media call

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Hosted by NOAA NESDIS Public Affairs

<https://www.noaa.gov/media-advisory/noaa-monthly-us-global-climate-report-call-june-15>

Victor (Operator):

At this time, all participants are on a listen only mode until the question and answer session of today's call. Question from the phone lines, please press star one and record your name at the prompt. If you have any objections, please disconnect at this time. I would now like to turn a call over to your host, John Bateman. Thank you, sir. You may begin.

John Bateman:

Thank you. Good morning and thanks for joining this monthly climate update call, part of the suite of climate services that NOAA provides to government, business, academia, the media and the public to support informed decision making. I'm John Bateman with NOAA communications and I'll be facilitating the call today. If you have any additional questions after the conclusion of today's call, my colleague John Leslie and I can both be reached by email at nesdis.pa@noaa.gov, that's nesdis.pa for public affairs at noaa.gov. Today's update will feature three short presentations followed by an operator assisted question and answer session. A copy of the presentation our speakers will follow, can be downloaded from the link in the media advisory.

And with that, I will introduce our speakers today. The first presenter is Rocky Bilotta, a climatologist with NOAA's National Centers for Environmental Information who will provide a summary of the May 2023 US and Global climate report, as well as the latest drought monitor update. Our second presenter is Jeremy Wolf, the climate program leader at NOAA's National Weather Service Forecast Office in Spokane, Washington, who will review the extremely warm May across the Pacific Northwest as well as the smoke from the Canadian wildfire that created air quality issues across the region. And our third speaker is Brad Pugh, a meteorologist at NOAA's Climate Prediction Center, who will provide the latest El Nino, La Nina update, as well as the US temperature, precipitation, and drought outlook for July, August and September. Our first speaker will be Rocky from NOAA NCEI.

Rocky Bilotta:

Thank you, John, and thanks to everyone who joined the call today. If you could please turn your attention to slide number two and we'll begin with the global temperatures for May and for the March through May period.

The May global surface temperature was 0.97 degrees Celsius or 1.75 degrees Fahrenheit above the 20th century average. This was the third warmest May in the 174-year record. As you can see from the temperature map on the left, temperatures were above average throughout most of North America, South America, and Africa. Parts of Western Europe, Northwestern Russia, Southeast Asia, the Arctic, the Northern and Southern Oceania also experienced warmer

than average temperatures this month. Sea surface temperatures were above average across much of the Northern and Southwestern Pacific, the central and Southern Atlantic and Indian Ocean. Temperatures were near to cooler than average across parts of the Southeastern United States, Greenland, Eastern Europe, Central and Southern Asia, Australia and Antarctica. Sea surface temperatures were near to below average over parts of Central, Eastern and Southeastern Pacific and the Northwestern Atlantic. Regionally, North America and South America each had a record warm May, Africa had its eighth warmest, Asia 16th warmest, and Europe it's 20th warmest May on record. Conversely, Oceania had a lower than average May temperature. It was the region's coldest May since 2011.

The March to May global surface temperatures was 1.06 degrees Celsius or 1.91 degrees Fahrenheit above the 20th century average. This was the third warmest March through May in the 170-year record. Looking at the temperature map on the right, temperatures for the season were above average throughout most of Northern, Eastern and Southern North America, South America, Europe, Africa, Eastern and Western Asia, and the Northern and Southern reaches of Oceania. Parts of the Arctic, South America, Western Europe, Western and Southeastern Asia and Micronesia experienced record warm temperatures this March through May season. Sea surface temperatures for the season were above average across much of the Northern, Western and Southwestern Pacific, the Central and Southern Atlantic and the Indian Ocean. Temperatures were near or below average across parts of Western North America and Alaska, Northern Scandinavia, India, Pakistan, and Antarctica. Sea surface temperatures were near or below average across parts of the equatorial Eastern and Southeastern Pacific Ocean. Regionally, South America had its second warmest March through May on record, Africa tied 2020 for its third warmest, and Asia had its eighth warmest period on record. Conversely, Australia had its coolest autumn since 2012.

Moving on to slide number three, here we see the global temperature percentiles for the most recent year to date. That's January through May. On the left, we see a comparison between the current year to date global temperature anomaly compared to the 10 warmest years on record. The January to May global surface temperatures for this period is 1.01 degrees Celsius or 1.82 degrees Fahrenheit above average. This year to date period ranks as the fourth warmest on record. Warmer than average conditions were observed across much of Eastern, Southern and far Northern North America, South America, Europe, Africa, the Arctic, Northern and Southern Oceania and Asia, with the exception of a small pocket of cooler conditions in India and Pakistan.

Sea surface temperatures were above average throughout most of the Northern, Western, Southwestern and subtropical Eastern Pacific, Central and Southern Atlantic and Indian Ocean. Meanwhile, near to cooler than average conditions were present across parts of Western North America and Western Alaska, India, Pakistan, Greenland, Australia, and Antarctica. Parts of the Southern and equatorial Pacific and Northern Atlantic oceans experience near to cooler than average sea surface temperatures during this year to date period. According to the National Centers for Environmental Information statistical analysis, 2023 is very likely to rank among the 10 warmest years on record and currently has a reasonable chance of ranking among the five warmest years on record.

Turning our attention to slide number four. At the contiguous United States, we see that the May 2023 temperatures average 62.4 degrees Fahrenheit, which was 2.2 degrees Fahrenheit above average, ranking 11th warmest in the 129 year record. Looking at the map on the left, you'll see that temperatures were above average across much of the west to the Mississippi River Valley and in the northern Florida Peninsula. With below average temperatures along the East Coast from Vermont to northern Florida. Washington ranked warmest on record for May while Oregon, Idaho, and Montana each ranked fifth warmest on record. Four additional states ranked among their top 10 warmest May on record, while South Carolina ranked 10th coldest on record for this month.

Looking at precipitation, we see that the average precipitation for the contiguous US was 2.56 inches, which is 0.35 inch below average, ranking in the driest third of the historical record. Looking at the map on the right, precipitation was above average across much of the Western Plains and the West and in parts of the Southeast and New England. While precipitation was below average from the Mississippi River Valley to the Mid-Atlantic and Southern New England and in

parts of the Northwest and Central Rockies. Wisconsin ranked fourth driest, while Pennsylvania ranked fifth, Maryland eighth and Michigan ninth driest on record.

Moving to slide number five. The spring season for the contiguous US, we see that the March through May 2023 temperatures averaged 51.5 degrees Fahrenheit, which was 0.6 degrees Fahrenheit above average, ranking in the middle third of the 129 year record. Looking at the map on the left, you'll see that temperatures were above average from the Southern Plains to the Great Lakes and to the East Coast, and in parts of the Northwest. Temperatures were below average from parts of the West Coast to the Northern Plains. Florida ranked fourth warmest. While Massachusetts ranked 10th warmest on record for this spring season.

The contiguous US spring precipitation total was 7.86 inches, which is 0.08 inch above average, ranking in the middle third of the March through May period. Looking at the map on the right, precipitation was above average from the West Coast to the Rocky Mountains and in parts of the Western plains, Northern Great Lakes and Southeast. Spring precipitation was below average from Central Plains to the Mid-Atlantic and in parts of the Central and Northern Rockies as well as Maine during the March through May period. Pennsylvania and Maryland each ranked ninth driest while Kansas ranked 13th driest on record for the spring season.

Looking at slide number six and our most recent year to date period, we see that temperatures from January to May average 45.2 degrees Fahrenheit, which was 1.9 degrees Fahrenheit above average. This ranked as the 18th warmest year to date period on record. Looking at the map on the left, temperatures were above average or across much of the Eastern United States and parts of the Northwest with near to below temperatures. Average temperatures from the Northern Plains to the West Coast. Florida ranked warmest on record while Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware and Maryland, each had their second warmest May, January through May period on record. An additional 22 states had a top 10 warmest year to date record for this five month.

Precipitation for this year to date period averaged 12.82 inches, which was 0.43 inch above average, ranking in the middle third of the record. Looking at the map on the right, precipitation was above average across much of California and the Southwest, and in parts of the Southern Mississippi Valley, Southeast, Northern Plains and Great Lakes. Precipitation was below average across much of the Mid-Atlantic and in parts of the Northwest and Central Plains during the January to May period. Utah and Nevada ranked 11th and 13th wettest on record respectively for this five month period. Conversely, Maryland ranked fifth driest while Pennsylvania ranked 12th driest on record for this year to date period.

Moving on to slide number seven, our current US trial monitor map that was updated this morning. We see that approximately 25% of the contiguous US is currently in drought. This is approximately 6% more drought coverage than we saw at the end of May. During this period, drought conditions lessened or diminished across Western parts of the Great Plains, the Florida Peninsula, and in parts of the West. Drought conditions expanded or intensified across portions of the Great Lakes, Ohio Valley, the Mid-Atlantic, and in parts in the Northwest, Eastern Plains and Northeast. Outside of the contiguous US, drought intensity or coverage expanded in parts of Hawaii and Puerto Rico while Alaska remained free of drought during this period of time. With that, I'll turn the presentation over to Jeremy Wolf to talk to you about the warmth and smoke in the Pacific Northwest. Thank you.

Jeremy Wolf:

All right, thank you. We'll go ahead and move on to slide eight. Starting with the May 2023 average temperature ranking. This map breaks it down by county. The earlier map was showing it by state, but you could see Washington did have for the state the warmest May on record, but you could see the areas within Washington State county wise that set a record as well as North Idaho. And the warmest May on record was set for several cities including Spokane, Wenatchee, Omak, and Bellingham. And the readings were anywhere from about six to eight degrees above normal across many of those locations.

And going on down now to slide number nine. This shows the average temperature across Washington State for May by year. And you can see there the 2023 point being the warmest on record, it actually tied 1958 for the warmest on record. So it was a monthly record tie for Washington State.

All right, moving on to slide number 10. I'll take a little bit of time to explain this slide as it may not be obvious just from glancing at this. What this is showing, this is the weather pattern that we had for the month of May. And the orange and reddish colored shading there that you see across much of Canada, this is showing the weather pattern compared to normal. And basically that big large area indicates that there was anomalous high pressure over Canada and the Northern US and it was this area of high pressure that contributed to the record warm May over portions of Washington and North Idaho. And on that global map that Rocky was showing earlier, there was a bunch of areas in Canada that set a record for the warmest May on record as well.

So moving on down now to slide number 11. This is showing what resulted, well, not a direct result from the heat, but the heat did contribute to significant wildfire activity in Canada during the month of May. And particularly on May 15th, there was a cold front that swept across Northern Canada and this cold front was fairly intense. There was not much precipitation with it. And that front aggravated several large fires up in the area and the winds behind that front did turn out of the north. And so what happened was as all these fires became very active. The shift in the winds on May 16th, which is the right image here. On May 16th, that shift in the wind started to push that smoke south, especially east of the Rocky Mountain divide. You can see the air quality went down into the hazardous category there in Calgary and the air quality across Washington and Idaho was still good at this point.

But as we go down to slide number 12, we're looking at the air quality during the worst of the event over Eastern Washington and North Idaho where several sensors went down to the moderate category. The worst of the smoke did stay across Canada and east of the Rocky Mountain divide. We were very fortunate over Eastern Washington and North Idaho that we did not get a significant push of northerly winds. There was a weather system up in Southwest Canada at this time that stalled up in that area. But if that weather system would have continued to drop south, then it would've been much worse across Eastern Washington and North Idaho. But again, thankfully air quality for most locations only dropped down to moderate, but yet this was the worst air quality that had been recorded in Spokane during the month of May from wildfire smoke since the records began in 1999. And this was information that we received from Spokane Clean Air Agency. So with that, that is all I have. I'll now pass it to Brad Pugh at NOAA's Climate Prediction Center. Thank you.

Brad Pugh:

All right, thank you Jeremy. Moving to slide 13 now with an update on ENSO. So on the left-hand side are the average sea surface temperature anomalies from May 14th through June 10th, and that shows that above normal sea surface temperatures have expanded recently across the Central and Eastern Equatorial Pacific. And currently the oceanic and atmospheric observations reflect El Nino conditions. So a big change as we've had three consecutive years of La Nina. So we've made that transition recently from La Nina to El Nino conditions. And on right the right-hand side are the probabilities for the three ENSO categories, El Nino, neutral conditions and La Nina. And the forecast calls for more than a 90% chance of El Nino conditions persisting through January, February, March of 2024. So high confidence forecast that El Nino conditions persist through next winter.

And the next slide, number 14 is the July temperature and precipitation outlooks. So the July outlook shows elevated probabilities of above normal temperatures throughout the South Central and Eastern US. With equal chances for below, near or above normal temperatures for most of the west. Above normal temperatures are favored for much of Alaska. And on the right-hand side the July precipitation outlook. A little background on the southwestern US, we're coming off a very snowy winter and spring throughout much of the Western US. Soil moisture conditions are quite moist. So with those initial conditions, we are expecting a slow start to the monsoon. Monsoon typically begins early July across Arizona and New Mexico, but we're expecting a pretty sluggish start to the monsoon. So therefore we're favoring

below normal precipitation across parts of Arizona and New Mexico. Three areas are favored wetness include the Western Gulf Coast, the Mid-Atlantic, and parts of the Northern Plains and Northern Rockies. With below normal precipitation favored for parts of Northern Alaska.

And the next slide, number 15 is the seasonal outlook covering the three month time period of July, August and September. And the seasonal temperature outlook calls for increased probabilities for above normal temperatures throughout the West Gulf coast region. And much of the Eastern US. Probabilities though do vary. The highest probabilities more than 60% chance were above normal temperatures of forecasts across Arizona and equal chances of below, near or above normal temperatures forecast for the Northern Plains. And across Alaska the most likely outcome is for above normal temperatures during the July, August, September time period.

And the precipitation outlook on the right-hand side there, below normal precipitation is favored for the southwest. To the north and to the east of that favored dry area above normal precipitation more likely for much of the Great Plains extending westward towards the Northern Rockies. Leaning slightly towards below normal precipitation for parts of the Great Lakes. Also, the Pacific Northwest. With slightly elevated probabilities for above normal precipitation for the Florida Peninsula. And across Alaska equal chances are forecast for much of the state, although there is a small area with below normal precipitation being favored for Southwestern Alaska.

And the final slide is the seasonal drought outlook, which is valid from today, June 15th through the end of September. Drought removal is likely across Florida due to sea breeze convection, and summertime is a very wet time of the year there in Florida. Also expecting improvement across much of the Great Plains. This is based on recent beneficial rainfall, especially as you move towards the High Plains. And also a wet pattern is forecast during the latter half of June. And above normal precipitation is favored during the July, August, September time period.

Development is expected throughout the Great Lakes during the next few weeks and persistence is forecast for the Ohio Valley and also the Mid-Atlantic. And across the west, persistence of long-term drought is the most likely outcome. And also development is forecast for parts of Washington and Oregon. And a small area of development is denoted in New Mexico. If the monsoon does turn out to be very dry, then that development area could be larger in coverage. Consistent with El Nino, development of forecasts throughout Hawaii and Alaska and Puerto Rico are expected to remain drought free. And that's all I have and I'll turn it back to John now.

John Bateman:

Thanks Brad. We will now take questions from the call participants. Please be sure to identify who you would like to answer the question if possible. And Victor, could you please remind the call participants how they can ask the question and then please queue up the first question?

Victor (Operator):

Absolutely, sir. If you would like to ask a question from the phone lines, please press star one. Ensure your phone is unmuted and record your name at the prompt. To withdraw your question, press star two. One moment please for incoming questions.

And our first question comes from Brian Sullivan with Bloomberg News. Your line is open.

Brian Sullivan:

Hi, thanks. I have two quick questions for you. One is, what's the significance of the record ocean temperatures and what kind of issues can that raise for the world? And then the second one is, what are the chances the smoke may return to the East Coast out of Canada?

Rocky Bilotta:

Hi, this is Rocky Bilotta with NCEI. I think I'll take a swing at the first question you had there. The significance, having record warm oceans temperatures, sea surface temperatures like that. Of course, warmer oceans may lead to increased water vapor in the air, which can lead to more intense precipitation events, things like heavier rainfall, flooding events, snow events, things like that. Warmer oceans also help fuel tropical storms. Warmer oceans can affect marine ecosystems, things like ships and fish populations as such. And then also can contribute to sea level rise through thermal expansion.

Brian Sullivan:

Thanks.

Victor (Operator):

Our next question comes from Seth Borenstein with The Associated Press. Your line is open.

Seth Borenstein:

Yes, thanks. And just to continue on the warmer ocean and adding one more factor for you. So it's two months now of record... Almost off the chart warmth in the Atlantic in April and May. And now you add, according to Copernicus this morning, the first 10 days of June were the first time in the summer that the world's been more than 1.5 degrees C over pre-industrial. So it's basically record warmth in the beginning of June. I guess the question, and this would be probably for Rocky, are we seeing feedback from the warmth here? Is this connected to El Nino even though it started before the El Nino was pronounced? Is this an acceleration? I mean, are we seeing... Is this just a blip that we're seeing right now between the warmer oceans and the first 10 days of June or are we seeing something bigger? And what does that mean for June? Thank you.

Rocky Bilotta:

Yes, this is Rocky again with NCEI. Great question. I think we're still sort of observing and collecting and sort of seeing how things play out currently at the moment. So it's hard to put your finger on one specific item as you know. But with this relationship with El Nino, of course there tends to be a lag between the warming of the equatorial waters of the Pacific influencing the global air temperatures. So we would anticipate the merging or intensifying of an El Nino to have more influence on the 2024 season of global temperatures rather than currently in 2023. But that doesn't necessarily mean that we're not already seeing an effect of that, but it probably would have more effect later in this year, going up. But it is something interesting, I think there's a lot of ideas kind of going around right now, but with climate change and global warming, things like that, it's been an interesting start to the season and we'll just kind of have to see where it goes from here. Thank you.

Seth Borenstein:

Thank you.

Victor (Operator):

Our next question comes from Rachel Ramirez with CNN. Your line is open.

Rachel Ramirez:

Hey all, thanks for doing this. And I wanted to sort of continue this conversation from the first two questions because I've been talking to scientists and climate experts lately as well, and many of them are expressing alarm, and I'm sure

some of you have seen it online or on Twitter about the state of things right now from sea surface depth, as you all mentioned, temperature anomalies and whatnot. And one of the experts that I talked to even said that this was the strangest El Nino ever, and he was saying, how are you supposed to define or declare an El Nino when everywhere is hot? So I was just wondering, can maybe Brad or Rocky or everyone in the panel kind of give their own expert reactions or thoughts to the state of things or the planet right now and maybe put into context what's different this time? Thank you.

Brad Pugh:

Hi, Rachel. Yeah, this is Brad Pugh at the Climate Prediction Center. So we're just beginning to see the coupling between the warming Equatorial Pacific and the atmosphere. Just over the past month, the trade winds of east across Equatorial Pacific. Beginning to see more enhanced convection across the Pacific and just depressed rainfall across Southeast Asia and Indonesia. So we're just beginning to see that coupling with the atmosphere. And I mean this has been a fairly fast transition from La Nina to El Nino. Now in terms of influences on the mid-latitude circulation pattern that typically occurs more towards the fall and the winter months. El Nino typically has more at this time of year, more of effect on the tropical cyclone development. So yeah, we're certainly keeping a close eye on it. And the latest forecast calls for 56% of a strong El Nino by November, December, January, so the chances for strong El Nino are elevated right now.

John Bateman:

We have another question. Is that right, Victor?

Victor (Operator):

Yes, sir. Our next question comes from Brian Sullivan with Bloomberg News. Your line is open.

Brian Sullivan:

Yeah, I'm back again. I want to ask about the warm oceans again and when was the last time we've had two record months of warm oceans in the world or is this something that's never happened before? And then I'd also like to remind folks... I just wanted to ask about the smoke too, what are the chances of the smoke coming back to New York?

Rocky Bilotta:

Hi, this is Rocky Bilotta with NCEI. I am not the global expert, but if this is something I can get back to with the specific statistics and things like that, I can share that information. As far as I know there's not something... It's not been two consecutive months of record temperatures, but I can't say that with absolute certainty because I'm not the expert in this area. But I'm happy to dig up stats, get it and go offline with it if you would like.

Brian Sullivan:

Yep.

John Bateman:

Awesome. And I don't know if somebody else wants to take the smoke question. I appreciate that.

Brad Pugh:

Yeah. Hey Brian, this is Brad Pugh at the Climate Prediction Center. So yeah, great question about the smoke. So last week we had this very deep area, low pressure across Southeast Canada and the East Coast, somewhat of an unusual pattern for early June. So that helps to funnel the smoke down from the Ontario, Quebec area. So it's tough to tell

whether that pattern will return. Typically, the flow pattern during the summer months is more from the west or the south across the East Coast. So that would keep the smoke to our north away from the East Coast, but it doesn't mean it couldn't return later this summer. Yeah, tough to tell right now.

Brian Sullivan:

Thanks.

Victor (Operator):

Next question comes from [inaudible 00:35:00] with the New York Times. Your line is open.

Speaker 10:

Hi, thank you. I was wondering if you could talk just a little bit more, you mentioned very briefly some of the potential results of these hot sea surface temperatures, but sort of more about some of the risks and repercussions that we could see as a result of that over the summer in terms of more water vapor in the atmosphere and other impacts of that.

Rocky Bilotta:

Hi, this is Rocky Bilotta with NCEI. I'll try to answer the question. I think with continued record temperatures, we're going to see just... It'll be an interesting year, I guess, for the rain, 2023 as we move into 2024, especially with El Nino coming into play. But I think a lot of things we could potentially see is just additional... Depending on where you're at geographically speaking, possibly droughts emerging in certain areas, continued wildfires and stuff. But also in the Southern parts of the United States, we might be able to see more like winter storms and things like that, that will occur thanks to El Nino. But with just the typical warmth and the continued record warmth, the atmosphere, it can hold more moisture. So again, we're going to see... It's more likely to see heavier storms, both rainfall and solid precipitation, things like snowfall through parts of the US but also again on the other side since the atmosphere can hold more moisture, you probably worry about... Rapid transpiration happening, causing further drought conditions and potentially wildfires as well.

Brad Pugh:

Yeah, this is Brad Pugh at the Climate Prediction Center. Just echoing what Rocky just said. During El Nino, typically the Southern tier of the country is, what are the normal? So as we go later into the fall and the winter, we'll be monitoring that prospects for heavy precipitation.

Victor (Operator):

I have another question from Rachel Ramirez from CNN. Your line is open.

Rachel Ramirez:

Hey guys, it's me again. I was just wondering, can one of you speak on the heat wave forecast down south right now for Texas, parts of Texas, Louisiana, and even Mexico? There was an analysis from Climate Central that came out last night that said this forecast was made five times more likely by climate change, and I just was wondering if I could get your thoughts on that?

Rocky Bilotta:

Hi, this is Rocky again with NCEI. I have not seen... And I apologize. But again, seeing sort of the record heat waves, we've seen a number of them already this year in the Pacific Northwest as well. But again, just sort of fueled with that



same warmer temperatures leading to more hotter conditions and more pulling of moisture sort of from the ground up into the atmosphere and stuff. I would need to look into more of that before I can give a more solid answer, but I'm happy to leave it open to the other speakers if anybody else has any additional information.

Brad Pugh:

Yeah, this is Brad Pugh at the Climate Prediction Center. So I don't have any additional info on that specific question, but Climate Prediction Center does issue a week two temperature outlook and also a week two hazards product. And we are calling for a persistence of that heat wave through the end of next week across the Texas area. And that's associated with a very strong area of mid-level high pressure anchored across Texas and Northern Mexico.

Victor (Operator):

There are currently no other questions on the phone line.

John Bateman:

Okay, thanks Victor. If there are no further questions, I will wrap up the call. First, I'd like to thank all of our speakers for their time and to everyone else for participating in this conference call. And I will end by reminding you to mark your calendar for a few upcoming events. The release of the June 2023 US Climate Report is scheduled for July 11th. The release of the June 2023 Global Climate Report is scheduled for July 13th. And NOAA will hold its next monthly US and Global Climate Media call at 11:00 AM Eastern Time on Thursday, July 20th. Lastly, an audio file of this call will be posted on the [noaa.gov](https://noaa.gov/media) media advisory site later today. And if you have any further informational needs, please feel free to email me, John Bateman. My contact information is available at the top of the media advisory. Thank you.

Victor (Operator):

That does conclude today's conference. Thank you all for your participation. You may disconnect your lines at this time.

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