



TRANSCRIPT

NOAA Monthly U.S./Global Climate Media Telecon

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Media advisory about briefing

<https://www.noaa.gov/media-advisory/noaa-monthly-us-global-climate-report-call-december-21>

Vanessa (Operator):

Welcome and thank you for standing by. At this time, all participants are in a listen only mode until the question and answer session of today's conference.

At that time, you may press star one, unmute your phone and record your name to ask a question. I would like to inform all parties that today's conference is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the conference over to your host, Mr. John Bateman. Thank you. You may begin.

John Bateman:

Thanks, Vanessa. Good morning and thank you for joining this monthly climate update call part of this 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 today's call, my colleague John Leslie and I can both be reached by email and I will spell that email address for you. It is N-E-S-D-I-S-P-A @ N-O-A-A.GOV, that's nesdis.pa, for public affairs, @noaa.gov.

Today's update will feature three short presentations filed by an operator's assisted question and answer session and the copy of the presentation our speakers will be following can be downloaded from the link in the media advisory. With that, I'll introduce our speakers. Our first presenter is Karin Gleason, Monitoring Section Chief from NOAA's National Centers for Environmental Information who will provide a summary of the November 2023 US and Global Climate Report, as well as the latest drought monitor update. And our second presenter is Matt Rosencrans, a meteorologist with NOAA's Climate Prediction Center who will provide a review of the 2023 Atlantic and Pacific hurricane season, which ended on November 30th. Matt will also review the latest El Nino update and provide the US temperature, precipitation and drought outlooks for January, February and March 2024. Our first speaker will be Karin Gleason from NOAA NCEI.

Karin Gleason:

Thank you John, and thanks to everyone for joining the call today. Let's begin by looking at slide number two and global temperature data for November 2023. We see that the global surface temperature anomaly was 1.44 degrees Celsius

above the 20th century average, making this the warmest November on record, and the sixth consecutive month of record warm global temperatures. This departure value was 0.38 degrees Celsius above the previous record from November of 2015. Global ocean temperatures in November also set a record now for the eighth consecutive month with a departure value of one degree Celsius.

When looking at land only we see that the 2.42 degrees Celsius warm anomaly value is also a record for the month. Looking at continental averages, we see that South America, Africa, and Asia each had their warmest November on record. North America was second-warmest, Oceania fifth warmest, and Europe ranked 15th warmest for the month. Record warm temperatures, which can be seen in the dark red areas in the map on the right of the slide, covered nearly 13% of the world's surface, which is the highest percentage for November since the start of this record in 1951.

Looking now at slide number three, it shows us the global temperature departure from average and percentile maps for the most recent three month, which is the Northern Hemisphere autumn season, and Southern Hemisphere spring. The September to November 2023 global surface temperature was 1.41 degree Celsius above the 20th century average. This ranks as the warmest September to November period in the 174-year record, and is a substantial leap, 0.39 degrees Celsius, above the previous record from 2015. The past 10 September to November periods have been the 10 warmest such periods on record. And in addition, this departure for this three-month season, it also marks the largest positive seasonal temperature anomaly on record. All continents, with the exception of Oceania, had their warmest September to November on record, and Oceania ranked fourth warmest for the season.

Shifting our attention now to slide number four, we see the global temperature percentile map for the January to November period, the most recent year to date period, and the 2023 year to date temperature comparison of the 10 warmest years on record. The January to November global surface temperature was 1.15 degrees Celsius above average, and this is the warmest January to November in the 174-year record. Looking at the time series on the right, we see that as we get closer to the end of 2023, the year to date anomaly value continues to pull away from the pack of the warmest years on record. And according to NCEI's temperature ranking outlook statistical analysis, it is virtually certain with one month remaining in the year that 2023 will be the warmest year on record. Moving on now to slide number five and a little bit closer to home, we see that November temperatures averaged 44.4 degrees Fahrenheit, which was 2.7 degrees Fahrenheit above average.

This was the 19th warmest November in 129 years of recordkeeping. Looking at the temperature rank map on the left, we see that in general temperatures were above average across much of the contiguous US. While near normal temperatures were observed along portions of the southern tier and east coast, no state ranked among their top 10 warmest or coldest Novembers on record. Precipitation for the month averaged 1.38 inches, which was 0.85 inch below the long-term average. This was the 12th driest November on record. Looking at the precipitation map on the right, we see that precipitation was below average across a large portion of the contiguous US and much below average across parts of the Midwest, where Indiana ranked third driest. Florida was the only state to have an above average ranking for the month.

Looking now at slide number six, we see the same, but for the fall season, September to November, temperatures averaged 56.1 degrees Fahrenheit or 2.5 degrees Fahrenheit above average. This was the sixth-warmest autumn on record for the US. Ranks map on the left shows that nearly all of the lower 48 states had above to much above average temperatures for the season. New Mexico and Texas ranked third-warmest while Maine was fourth-warmest. Precipitation totals averaged across the continuous US for the season were 5.66 inches, which was 1.22 inches below average, and this was the 15th driest autumn on record. We see that the ranks map on the right shows portions of the North Central US, Northeast, and Atlantic coast had above average precipitation, while the remainder of the lower 48 experienced average to much below average precipitation. Tennessee ranked third-driest on record for the season.

Moving on to slide number seven, we see that the year to date temperatures for the contiguous US were 55.8 degrees Fahrenheit, which was two degrees Fahrenheit above average. This is the 10th warmest such year to date period on

record. The map on the left shows the temperature ranks for the first 11 months of the year, and we see that temperatures were above average to record warm across all but portions of the West. Texas, Louisiana, and Mississippi each ranked warmest on record, with about 10 additional states along the Gulf and East Coast ranking second or third-warmest.

Precipitation for this year to date period averaged 25.89 inches, which was 0.7 inches below average. This falls in the lower third of the historical distribution, which equates to a below average season for precipitation. The ranks map on the right shows wetter than average conditions from parts of the West Coast to the plains and from the Great Lakes to the Northeast. Wyoming ranked seventh wettest. Dry conditions were scattered around the country with Louisiana ranking seventh driest and Maryland eighth driest for this year to date period.

Now looking at slide number eight and turning our attention to the latest US drought monitor map released just this morning, we see that approximately 33.3% of the contiguous US is currently in drought. This is down about 4% since early November. And then looking at the map, we see that drought conditions diminished or lessened across portions of the Northwest and the Northern tier. It also reduced in size across portions of Texas and the Gulf Coast, although severe extreme and exceptional drought does remain significant across portions of that region. We also saw a contraction of drought across portions of Carolinas and Virginia. On the flip side, we saw drought conditions intensify somewhat across the Midwest. And then looking outside the contiguous US, we saw significant improvement in drought across the islands of Hawaii.

All right, and now looking at slide number nine and the latest billion-dollar weather and climate disasters map, we actually had no new disaster events confirmed this month. In all, there have been 25 confirmed disaster events this year, each with losses exceeding a billion dollars. These disasters consisted of 19 severe storm events, two flooding events, one tropical cyclone, one winter storm, one wildfire, one drought, and a heatwave event. For this year to date period, the first 11 months of 2023 rank highest for disaster counts ahead of 2020 which saw 20 disasters. The total cost of the 2023 events exceeds \$81 billion to date and they have resulted in 482 direct and indirect fatalities. The 2023 Southern and Midwestern drought was the most-costly US event during the first 11 months of 2023 with losses exceeding \$10 billion. And with that I'll turn the presentation over to Matt.

Matt Rosencrans:

Thank you, Karin. One of those specific types of disasters is hurricanes. And the 2023 Atlantic hurricane season produced 20 named storms, seven hurricanes, and three major hurricanes with a total accumulated cycle and energy of 145 knots. That's 150% of normal, making it an above normal hurricane season. It ranks as the season with the fourth most named storms since 1950. Specific storms that had a major impact this year were Hurricane Idalia. It was the only landfalling hurricane to make landfall in the US, and it brought inundation of seven to 12 feet along parts of the Big Bend region of Florida, and then significant rainfall across the southeast leading to localized flooding. Tropical Storm Ophelia also made landfall bringing a lot of flooding into the Carolinas and kind of the tide water portions of Virginia.

Moving on to slide 11, the 2023 East Pacific Hurricane season produced 17 named storms, 10 hurricanes, and eight major hurricanes. The total cyclone energy for the East Pacific was 133 knots, which is 137% of normal for the East Pacific. The East Pacific season was also an above normal season. Hurricane Otis established a record as the strongest East Pacific Hurricane landfall in the modern era making landfall with winds of approximately 165 miles per hour, ranking it as a category five. Also of note, Hurricane Hillary resulted in the first issuance of a tropical storm related watch or warning by the National Hurricane Center for the coast of California.

Moving on to slide 12, just giving some background on what we think caused the... Or contributed to the active hurricane season in 2023. There's typically two major forcings that explain most of your variability in the hurricanes over the Atlantic and those are El Nino or La Nina, so the state of ENSO, and also the local sea surface and wind conditions in the Atlantic. This year we had an El Nino during most of the hurricane season and we can see that graphic on the left-

hand side here where we can see the trace for 2023 to 2024, we were greater than 0.5 degrees since the beginning of the hurricane season. So that El Nino and then the attendant atmospheric response coming [inaudible 00:15:02] later, so we can say we had El Nino conditions for this hurricane season. We did also have a record warm Atlantic sea surface temperatures.

So these are kind of competing factors because El Nino usually means less tropical activity in the Atlantic while warm sea surface temperatures [inaudible 00:15:19] more. And given that we had such high activities, the fourth most on record, the initial thoughts are that the Atlantic Sea surface temperature has dominated over El Nino. We are looking into other ways that El Nino did impact the season, because we did not notice in this year the normal percentage of storms that would form in the Gulf of Mexico or even near the coast of Central America. And that's actually typically where the wind shear and the atmospheric pattern changes associated with El Nino are felt the most.

If we go to slide 13, there's a bit of a diagnosis of the wind shear in the plot in the upper left, it does show that there was elevated wind shear across most of the Gulf of Mexico, especially near the coastline of the US, and there was actually some high wind shear near the coast of Central America. Going out to the main development region over the Atlantic, which is the kind of deep tropical Atlantic and parts of the Caribbean where most of the hurricanes form and especially most of the major hurricanes form, the wind shear there was quite low during the August, September, October period.

So we do see some of the wind shear pattern that was reflective of El Nino, but it didn't have as much of an impact as it has in prior years. We had 60% of the named storms, so 12 out of the 20, formed in the main development region, which is a higher fraction than normal. While only 10% of the named storms formed in the Gulf of Mexico, which is a much lower percent of [inaudible 00:17:07] normal. The wind shear over the main development region that allowed those 12 named storms to form was the eighth-lowest on record since 1950. So not a record lowest, but in the lower portion of the range of values that we have observed.

I also mentioned before that Hurricane Idalia was the only hurricane to make landfall in the US. Looking at the steering currents from August, September, and October, those are the winds that kind of guide the general tropical storm and hurricane motion, there was a mean low pressure area over the Northeast US, and that kept most of the storms off to the east. And even Idalia, when it made landfall, was moving from Southwest to Northeast, it had the trajectory of a storm that had already recurved. So that did result in a relatively low amount of landfalling storms despite the higher activity.

Slide 14 is a quick review of our forecasts that were made for this season. Our May outlook, the number of hurricanes and major hurricanes was forecast correctly. The number of named storms was a little bit lower than we thought. There was quite a bit of uncertainty on the interplay between El Nino and the local Atlantic conditions. By the time we made our update in early August, we had realized that the conditions in the Atlantic would likely persist through the season and could dominate the El Nino impact. So our forecast, we increased our values and all four of our forecast categories, our forecast range did surround the observed range of values.

Turning our attention now to the current sea surface temperatures and the state of El Nino, we do see that the sea surface temperatures in the last four weeks over the equatorial Pacific were above average across most of that Pacific Ocean. There are some near average sea surface temperatures in the Western Pacific Ocean. Some of the sea surface temperatures in the central and eastern Pacific are greater than two degrees cent grade above their normal, so quite warm. The tropical Pacific atmospheric anomalies, so the wind patterns above that are very consistent with El Nino and we're starting to see some of those impacts and relations into the atmosphere in the traditional winter impact setting. There's the first rains coming into California now are likely related to some of that. Going forward, the forecast is that El Nino is expected to continue through this Northern Hemisphere winter with a robust El Nino, so it's potentially of historical strength.

There is a 54% chance of a historically strong El Nino during the November through January season, and that would be defined as one with greater than two degrees centigrade in the Nino three four region. So on slide 16, we're looking at

how El Nino and the other climate factors could impact the month of January. We typically do see an enhanced southern storm track during... Which is just the term for where do most of your storms and low pressure systems move. And we typically see that having an impact into California, especially southern California. And then we see a lot of development across the Gulf region into the Southeast US. So those are two regions that we favor above normal precipitation for the month of January. That southerly shifted storm track would also relay results in below normal precipitation for much of the Great Lakes and into the Ohio Valley region. Some of those areas Karin noted have had a recent lack of precipitation that may continue through January.

El Ninos typically also result in above normal temperatures for most of the Northern tier of the country, and we do favor above normal temperatures, especially Northern California up to the Pacific Northwest, and then across the northern tier of the contiguous US to the Great Lakes. El Ninos typically also support above normal temperatures for much of Alaska with our highest probabilities being from most of mainland Alaska.

On slide 17, those impacts extend out into January, February, and March with the continuation of above normal temperatures from California to the Pacific Northwest and across the northern tier of US with some relatively high probabilities also in the Northeast. We do have a forecast for near normal temperatures across portions of the southern plains and across portions of the southeast. And those are really due to competing signals. El Nino would normally support below normal temperatures across the southern gear of the US but we also have strong trends in those regions that counteract that, so we would result in a near normal forecast for those regions.

Looking at the precipitation outlook for January, February, and March, that Southeast area of the contiguous US, kind of from Texas to Florida, then up the East Coast, that is a favored storm track during El Nino winters. We also are favoring above normal precipitation for central and southern California, across the Sierra Nevadas, and into the Four Corners region with an extension for a slight tilt for above normal precipitation into the Central Plains. That signal across the Central Plains typically does emerge more during February and March, for which the January, February, March outlook covers that period. January, February, March also look like a period when we could have below normal precipitation across the Great Lakes and into the Ohio Valley.

Moving on to slide 18, the likely impacts from that are that we will have a lot of drought reduction and improvement in the drought condition across the Southeast, but we could have quite a bit of intensification in the drought across some parts of the Midwest and across parts of the Central Plains. So in those areas where [inaudible 00:24:01] below normal precipitation is forecast, especially in the Ohio Valley and portions of the middle Mississippi Valley. There could also be some drought intensification and development in the Pacific Northwest into the Idaho and Montana and the Northern Rockies. While the southern storm track that's likely during El Ninos could bring some drought relief to the Four Corners region. That's all I have and I'll turn it back to John to finish the call.

John Bateman:

All right, thanks so much Matt. We will now take specific questions from the call participants. Please be sure to identify who you'd like to answer the question if possible. And Vanessa, could you please remind the call participants how they can ask a question, and if they have any questions, could you please queue up the first one?

Vanessa (Operator):

Thank you. We will now begin the question and answer session. If you would like to ask a question, please press star one, unmute your phone, and record your name. Your name is required to ask a question. If you need to withdraw your questions, press star two. Again, to ask a question, please press star one. We have one question in queue, Ms. Smith of the Los Angeles Times, your line is open.

Ms. Smith:

Hi, thanks. Good morning. So as you mentioned, we have six consecutive months of record-breaking temperatures. Can you talk a little bit about why you think this is happening? And also can you say whether December is looking like it will be a record as well?

Karin Gleason:

Yes, this is Karin Gleason from NCEI. The six consecutive months of global temperatures primarily result from the combination of factors, but for this year in particular, I think one of the main factors is the presence of the strong El Nino, that has definitely helped to enhance global temperatures, which it's a known quantity. We have some analyses that show global temperatures broken down by El Nino southern oscillation or ENSO phase. And during La Nina years there tends to be a slight cooling effect, whereas during El Nino years it tends to boost global temperatures. So the overall trajectory, the trend is warming and then you have these influences of which ENSO is a primary player.

So really the main reasons for the record, I would say, this year compared to prior years is that we flipped from being in a La Nina phase, which kind of suppressed those global temperatures to El Nino, which kind of gave it a boost. So we have the underlying sort of warming basins remained warm even during the La Nina, but global temperatures kind of stayed in the top five or six years on record. And then this year breaking into this strong El Nino just kind of broke through the barrier and we're starting to see temperatures, anomalies that we really haven't seen historically in the record. So that's really what's been going on and what's driving this.

Vanessa (Operator):

Okay, we show no further questions in queue. Therefore, that concludes today's conference. You may disconnect at this time. Host, please stand by for your line count.

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