TRANSCRIPT

NOAA Monthly US/Global Climate Media Telecon

December 15, 2023 at 11 am ESY

Hosted by NOAA NESDIS Public Affairs

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

Cortney (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 on your phone 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 John Bateman. Thank you, you may begin.

John Bateman:

Thanks Courtney. Good morning, and thank you 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, and I will spell it, nesdis.pa@noaa.gov.

Today's update will feature three short presentations, followed by an operator assisted question and answer session at the end. A copy of the presentation our speakers will follow can be downloaded from the link in the media advisory. With that, I will introduce our speakers. The first presenter is Karin Gleason, the monitoring section chief at NOAA's National Centers for Environmental Information, or NCEI, who will provide a summary of the November, 2022 U.S. and Global Climate Report, as well as the latest drought monitor update.

Our second presenter is Jon Hitchcock, senior forecaster from the National Weather Service Forecast Office in Buffalo, New York, who will provide a review of the historic Lake Effect snowfall that struck parts of western and central New York last month.

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 U.S. temperature, precipitation, and drought outlook for January, February, and March. Our first speaker will be Karin, from NOAA NCEI.

Karin Gleason:

Thanks John, and thank you for joining our call today. Let's begin by turning our attention to slide number two in the slide deck, and the global temperatures for November. The November, 2022 global surface temperature departure was the ninth largest for November in the 143-year record, with global land and ocean departure value at 0.76 degrees

Celsius, or 1.37 degrees Fahrenheit above the 20th century average. As you can see from the temperature departure map on the left, with red shades denoting warmer than average, and blue shades denoting cooler than average temperatures, the month of November was characterized by warmer than average conditions throughout most of Europe and southern Asia, as well as across parts of eastern and southern North America, Northwestern Canada and Alaska, northwestern Africa, southern South America, and northeastern and southeastern Oceania. Sea surface temperatures were above average across much of the northern, western, and southwestern Pacific, and the Atlantic Ocean. Temperatures were cooler than average throughout much of the western North America, eastern South America, northern and northeastern Asia, Australia, and across parts of north central Africa.

Consistent with La Nina, sea surface temperatures were below average over much of the south central, central, and eastern tropical Pacific Ocean. Additionally, much of the Indian Ocean had cooler than average temperatures. The map on the right-hand side of this slide shows how departure values on the left compared to the 143 years of record for each specific red box. As you can see from the bright red colors on the map, parts of northern Europe, southeastern Asia, southern South America, and northeastern and southeastern Oceania experienced record warm temperatures for the month. Overall, record warm November temperatures encompassed about 8.7% of the world's surface. This ties with 2015 as the second highest percentage for record high November temperatures.

Moving on to slide number three, we see global temperature percentiles for the most recent seasonal period, September through November, which is meteorological autumn in the northern hemisphere, and meteorological spring in the southern hemisphere. The September to November global surface temperature was 0.84 degrees Celsius, or 1.51 degrees Fahrenheit above average. This translates to the fifth warmest September to November temperature in the 143-year record. The 10 warmest September to November periods on record have all occurred in the most recent 10 years. Over the land surface, air temperatures for the season were above average across much of Europe, Asia, northern North America, northern and southern South America, northern and southern Africa, and northeastern and southeastern Oceania. Below average temperatures were observed across portions of Australia. Sea surface temperatures for the season were above average across much of the northern and western Pacific, parts of the southeastern Pacific, and most of the Atlantic and eastern Indian oceans. Sea surface temperatures were below average over much of the central and eastern tropical Pacific.

Moving on to slide number four, we see the global temperature percentiles for the most recent year to date, that's January through November, and a comparison with the current year to date global temperature anomaly, compared to the 10 warmest years on record. The January to November global surface temperature for this period is 0.86 degrees Celsius, or 1.55 degrees Fahrenheit above average. This translates to the sixth warmest such period on record. Record warm temperatures were present across portions of Europe, Asia, and parts of northern and the southern Pacific Ocean. Consistent with La Nina patterns, these surface temperatures were below average over much of the south central, central, and eastern tropical Pacific Ocean. According to the National Center for Environmental Information's statistical analysis, 2022 is very likely to rank among the 10 warmest years on record, and it has less than a 1% chance to rank among the five warmest years on record. We're 11 laps into a 12-lap race, with one month to go. We're really zeroing in on where 2022 will finish after the end of December.

Turning our attention to slide number five, and looking a little closer to home, we see that November of 2022 temperatures averaged 41.0 degrees Fahrenheit, which was 0.7 degrees Fahrenheit below average, this ranked in the middle third of the 128-year records. In general, across the contiguous U.S., temperatures were above average from the Mississippi River to the east coast, and below average from the northern plains and southern Rockies to the Pacific Ocean. Parts of the Pacific Northwest had their coldest November in nearly 40 years. Idaho's ranked fourth coldest, Washington's sixth coldest, and Oregon's seventh coldest. On the east coast, Maine had its fifth warmest November, and Florida, it's seventh warmest.

Looking at precipitation, we see that the average precipitation for the contiguous U.S. was 2.40 inches, which is 0.17 inches above average. That also ranked in the middle third of the historical record. Looking at the map on the right-hand side of the slide, precipitation was above average along the Gulf Coast and into parts of the northeast, as well as in pockets across the western Great Lakes and Central Rockies.

Below average precipitation occurred across portions of the Central Plains and Ohio River Valley. Temperatures on slide number six, for the September to November period, averaged 54.7 degrees Fahrenheit, which was 1.2 degrees Fahrenheit above average. This actually ranked in the warmest third, or the above average portion of the 128-year record. Looking at the map on the left, we see temperatures were above average from the Pacific coast to the Great Lakes, and into the Northeast. Maine ranked fourth warmest, while five additional states across the Northeast and Pacific Northwest ranked among their 10 warmest autumn seasons on record. Precipitation for this three-month averaged 5.92 inches, which is just about an inch below average. This translates to the driest third, or a below average portion of the historical record. Looking at the map on the right, precipitation was above average across portions of the east coast, and below average across the west coast states, and from the plains to the Great Lakes, and along the Mississippi River Valley. Nebraska ranked fifth driest, and four additional states experienced one of their 10 driest autumn seasons on record.

Looking at slide number seven, and our most recent year-to-date period, we see that temperatures for January to November averaged 55.2 degrees Fahrenheit, which is 1.5 degrees Fahrenheit above average. This ranked 17th warmest on record. Looking at the map on the left, you see temperatures were above average from the west coast of the Gulf of Mexico, and along the East Coast and eastern Great Lakes. California and Florida each ranked fifth warmest, while Massachusetts and Rhode Island were six warmest for this 11-month period. Precipitation for this year-to-date period averaged 25.61 inches, which is almost two inches below average, and that translates to a below average period ranking in the driest third of the record. Looking at the map on the right, precipitation was in general above average across parts of the northeast, and below average from the plains to the west coast. California ranked second driest on record, while Nebraska ranked fourth driest.

Looking at slide number eight, our current U.S. drought monitor map that was updated this morning, we see that approximately 53% of the contiguous U.S. is currently in drought. This is approximately 9.5% less drought coverage than what we saw at the beginning of November. We saw drought conditions during this period lessen or diminish across portions of the southeast, the southern plains, and parts of the west. We did see drought conditions expand or intensify across portions of the central plain. Outside of the contiguous U.S., Alaska and Puerto Rico have been without drought during this period of time, but we did see a lessening of intensity, and coverage of drought across much of the Hawaiian Islands.

With that, I'll turn the presentation over to Jon, to talk about the Lake Effect snow event that occurred last month.

Jon Hitchcock:

Okay, thank you Karin. This is Jon Hitchcock, of the National Weather Service in Buffalo. Moving your attention to slide nine, we just talked about weather and climate on a global and national scale. We're going to talk about something much more localized now, that was our historic Lake Effect snow event that occurred about a month ago now, in the middle of November. The map on the right is analyzed snowfall for this five-day Lake Effect snow event. East of Lake Erie, we had some really incredible snowfall numbers, between 60 and 80 inches, focused on the Buffalo south towns. We had a maximum report of just over 81 inches in Lakeview, that's a southern suburb of Buffalo, about 15 miles or so south of the city. East of Lake Ontario, Lake Effect snow off of Lake Ontario, 30 to 50 inches from near Watertown, east across northern Lewis County. Our highest report was 49 inches, in the little town of West Carthage.

Moving on to slide 10, just to give an idea of how we forecast these major Lake Effect snow events, we're trying to forecast something that's the size of a summertime thunderstorm many days or even a week in advance. We've looked a lot into something called analog patterns. Basically, we look at patterns that have produced heavy Lake Effect snow in the past, and we compare that to the large-scale pattern of the future. In essence, we're using past climate data to try and forecast a very small, localized event many days in advance. The map on the left is a forecast, mid-level pattern in the atmosphere during this event last month. The map on the right is the analog pattern of four major Buffalo events in the past, for the past 20 to 25 years. You can see, just by the eye test, a very similar pattern that we had last month, compared to past major, Lake Effect snow events in Buffalo.

Moving on to slide 11, we just captured a few radar images from this event. If you're not from the Great Lakes, one thing to keep in mind is how in incredibly narrow these Lake Effect snow events are. These were fairly wide bands actually, by Lake Effect snow standards, but even these were only about 20 miles wide. The image on the left was a radar image from about 1:00 AM on November 18th, the image on the right, from about 10:30 PM, on the 20th of November. Both of these bands were only about 20 miles wide. That's how we get these very localized, very intense snowfall events to [inaudible 00:13:49] the Great Lakes.

Moving on to slide 14, this was a historic event, but we have had similar events in the past. Looking back at some past major events, we had one of those very similar to this one in November of 2014. It produced 68 60 to 80 inches of snow in a very similar area, in the southern suburbs of Buffalo. Back in December, the end of December, 2001, into January 1st, 2002, we had a week long Lake Effect snow event that produced, again, 60 to 80 inches of snow in the Buffalo Metro area, and 80 to over 100 inches of snow across the Tug Hill plateau east of Lake Ontario. Back in January of 1997, we had 70 to 90 inches of snow across the Tug Hill plateau, east of Lake Ontario. In the middle of December, way back in 1945, another very similar event to this that produced 60 to 80 inches of snow across the southern and eastern suburbs of Buffalo. This does happen on occasion in the eastern Great Lakes.

When you look back at these historic events, it's a little bit of an apples to oranges comparison. Each one of these lasts for a different amount of time. This event in particular, we had 60 to 80 inches of snow over a four- or five-day period in the Buffalo south towns, but the majority of that fell in just a two-day period. It was a pretty short period where most of that snow fell.

Moving on to slide 13, some impacts from this Lake Effect snowstorm. We had hourly snowfall rates of up to six inches per hour, which produced nearly impossible travel at times within the heart of this Lake Effect snow band. The snow accumulation was too great in many areas to be removed by just using normal snow plow equipment. Snow needed to be hauled away, and removed by construction equipment. There was a significant disruption to travel and commerce in the Buffalo Metro area, and also east of Lake Ontario for several days, and some major road closures and travel bans as well in the Buffalo area, including about 40 miles of I 90, the New York State throughway, which is one of the biggest travel corridors in western New York.

Moving on to slide 14, some further impacts from this Lake effect snowstorm. This was a fairly wet snow, it weighed a lot. The heavy, wet snow result resulted in several building collapses, both in the Buffalo area and east of Lake Ontario. There were some power outages from downed trees and power lines, just because of the weight of the snow. We had three indirect fatalities, unfortunately, in the storm. I believe all three of those were from cardiac issues, from shoveling snow, or trying to clear the snow following the event, and storm cleanup. This storm was very accurately forecast by our office and others, many days, even up to a week in advance of the storm. It's about more than just getting the forecast right, it's about communicating the risk, and what's going to happen, what the impact is going to be, through the decision support services the weather service does with state, local, and even national partners.

The utilities were able to preposition power crews to aid in restoring power. Airlines proactively canceled flights even a day or two in advance prior to this event, coming into and out of Buffalo. Many schools and businesses were closed well ahead of the storm, before the first flake fell, based on the forecast. Early road closures as well, the major interstates closed in advance of the storm, so we didn't have big traffic tie ups that would have slow down snow removal following the storm.

That's all I have in my part of the presentation. I will pass it off to Brad now, to continue the presentation on slide 15.

Brad Pugh:

All right, thank you Jon. This is Brad Pugh, at the Climate Prediction Center. We're moving on to slide 15 now, which, on the left-hand side, shows the average sea surface temperature anomalies for the period November 13th through December 10th. That slide does show a continuation of below normal sea surface temperatures throughout the central and eastern Pacific Ocean, near the equator. These oceanic observations, along with atmospheric observations, currently reflect ongoing La Nina conditions.

On the right-hand side is a forecast going forward. We have January, February, March, and following three-month time periods, February, March, April; March, April, May, as you can see in the bar graph there. For the January, February, and March three month time period, there's a 50% chance of either La Nina or ENSO neutral conditions. If you move forward, the three-month time period covering February, March, April, the chances for ENSO neutral conditions increase to near 70% for that three-month time period.

Moving to slide number 16, the monthly forecast for January, 2023. On the left-hand side is the monthly temperature outlook, and it depicts elevated probabilities of above normal temperatures across the eastern U.S., also parts of the south-central U.S., and California. Below normal temperatures are more likely for the northern plains and the upper Mississippi Valley. For Alaska during January, below normal temperatures are favored in southeast parts of the state, with above normal temperatures more likely for southwestern Alaska and the Aleutians. On the right-hand side is the January precipitation outlook. Below normal precipitation is favored throughout the southern tier of the country, with the largest probabilities exceeding 50%, focused over parts of the Southwest and Texas. Conversely, above normal precipitation is more likely for the Ohio Valley and Great Lakes, extending westward to the northern plains, northern Rockies, and Pacific Northwest. For Alaska, below normal precipitation is favored for the panhandle, with above normal precipitation more likely for western Alaska.

Moving next to slide 17, this is the seasonal forecast for January, February, and March, and the temperature outlook for that three-month time period is on the left-hand side. That depicts increased probabilities for above normal temperatures for the eastern U.S., also the southern tier of the country, with the largest probabilities for above normal temperatures focused across the southeastern U.S. Below normal temperatures are favored for the northern plains, westward to the Pacific Northwest. There's a large area of equal chances of below, near, or above normal temperatures throughout much of the plains, Midwest, and Great Lakes, due to the expectation of a highly variable temperature pattern during this three-month time period. For Alaska, colder than normal temperatures are favored for southeastern parts of the state, with a slight lean towards above normal temperatures for northern Alaska.

The seasonal precipitation outlook for January, February, and March calls for drier than normal conditions for parts of the southeast along the Gulf Coast, central to the southern plains, southwest, and southern California. Conversely, wetter than normal conditions are more likely for the Ohio Valley, Great Lakes, parts of the northern plains, northern Rockies, and Pacific Northwest. For Alaska, just a slight lean towards below normal precipitation for southeastern parts of the state, with above normal precipitation favored for western and northern mainland Alaska.

The final slide is slide number 18. The seasonal drought outlook, which is valid through the end of March, 2023. The most like likely outcome for California, the southwest, and central to southern Great Plains would be for drought persistence, or development, also calling for drought persistence and development for parts of the southeast. Meanwhile, drought improvement or removal is more likely for parts of the Midwest, extending southward into the lower Mississippi Valley, and also parts of the northern plains, northern Rockies, and Pacific Northwest. Lastly, in Hawaii, drought improvement is also forecast. With that, I'll pass it back to John.

John Bateman:

All right, thanks so much Brad. We will now take specific questions from the call participants. Please be sure to identify who you would like to answer the question, if possible. Courtney, could you please remind the call participants how they can ask a question, and please queue up the first question.

Cortney:

Thank you. If you would like to ask a question, please press star one and record your name. If you need to withdraw your question, press star two. Again, to ask a question, please press star one.

I'm showing no questions at this time. I'd like to turn it back to John Bateman.

John Bateman:

Okay, thanks so much Courtney. If there are no questions, I will wrap up the call. First, I'd like to thank all of our speakers for their time, and everyone else for participating in this conference call. I will end by reminding you to mark your calendar for a couple of upcoming events. The release of the 2022 U.S. climate report, and billion-dollar disaster update is scheduled for January 10th, 2023. The release of the NOAA/NASA 2022 Global Climate Report is scheduled for January 12th, 2023.

Lastly, an audio files of this call will be posted on the noaa.gov media advisory site later today. 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.

Cortney:

That concludes today's conference, thank you for participating. You may disconnect at this time.

# # #