TRANSCRIPT

NOAA 2024-2025 Winter Outlook Press Conference

Thursday, October 17, 2024 at 11 a.m. EDT via GoToWebinar

Media advisory about news conference

https://www.noaa.gov/media-advisory/noaa-to-issue-2024-2025-us-winter-outlook

Winter Outlook news release

https://www.noaa.gov/news-release/us-winter-outlook-warmer-and-drier-south-wetter-north

Hello everybody, welcome to the webinar. We have a number of reporters logging in and we're going to give them another minute or two before we start today's media briefing.

2:26

All right, good morning everyone and thank you for joining us today for NOAA's announcement of the 2024 2025 US winter outlook, including predictions for temperature precipitation and drought across the country.

2:39

This news conference is being recorded.

2:41

So if you do not want to be recorded, please disconnect at this time.

2:45

My name is Erica Grow Cei and I am a Public Affairs Specialist for NOAA's National Weather Service.

2:51

My colleague, Marissa Anderson is also on the line and she'll be assisting with this webinar.

2:57

A news release and graphics related to today's announcement will be available on NOAA.gov shortly and a direct link to the news release will be added to the chat box on the right of your screen once the outlook is announced.

3:12

Following the announcement of the winter outlook, you will have the opportunity to ask questions.

3:17

If you have additional questions following the news conference, I can be reached at erica.grow.cei at noaa.gov or at nws.pa at noaa.gov.

3:30

And I am putting that information into the chat box right now.

3:35

The beginning of today's news conference will consist of about 10 minutes of remarks from our experts, and then we will take questions from reporters.

3:43

If you would like to ask a question during the Q &A portion of this briefing, please click the hand icon next to your name in the attendees list that appears to the right of your screen.

3:53

You may also submit your question in the Q &A box and we will read it for you.

3:57

Be sure to include your full name and media affiliation.

4:01

And please only use the Q &A box for questions, not the chat.

4:06

We will start today with comments from Dr. Michael Morgan, NOAA's Assistant Administrator for Observations and Prediction.

4:14

Then Jon Gottschalk, Chief of the Operational Prediction Branch at NOAA's Climate Prediction Center will deliver the outlook for the upcoming winter season.

4:23

And without further ado, I would like to welcome Dr. Morgan for his remarks.

4:29

Thank you, Erica, and good morning, everyone.

4:32

First, I'd like to thank you all for coming to hear today's announcement.

4:36

This is always a big day for NOAA. The winter outlook, one of the most viewed and used outlooks that NOAA produces, is a vitally important look at temperature and precipitation patterns across the country for the upcoming winter season.

4:49

The Winter Outlook is produced in order to give American communities the best possible scientific prediction of how we think the winter will develop across the nation. Our Climate Prediction Center issues these seasonal forecasts so users can assess their risks and opportunities when making climate-sensitive decisions.

5:08

The Winter Outlook is one of the National Weather Service's tools for providing vital information to the public and our critical core partners such as the agriculture industry, energy providers, regional tourism, transportation interests, and commodities markets.

5:24

No two winters are the same. And even in a warming world, we continue to see weather extremes manifest in the coldest months as highly impactful events, ranging from blizzards and ice storms to the rapid onset of drought.

5:38

NOAA continues to invest in weather and climate forecasting technologies and infrastructure that serve the needs of communities and businesses across the country.

5:48

Just last month, we announced a $100 million investment into NOAA's high performance computer system that will further enhance our current forecasting capabilities by utilizing the latest in machine learning technology.

6:01

This advancement is essential for making longer term predictions like the winter outlook. But ultimately it comes down to the people of NOAA, the 12 ,000 employees who work around the clock keep Americans safe and help them prepare for what lies ahead. We are fortunate to have dedicated scientists like those at NOAA's Climate Prediction Center helping to build a more weather and climate ready nation.

6:23

With that I'll now hand it to Jon Gottschalk of the Climate Prediction Center for the details of the 2024-2025 winter outlook. Jon.

Thank you Dr. Morgan. Unlike the autumn of 2023 when a strong El Nino was in place. This year ENSO neutral, neither the cool or warm phase of the El Nino Southern Oscillation or ENSO is currently in place. A transition to La Nina remains favored this autumn, although it is most likely to be a weak, shorter duration event with a continuation of ENSO neutral conditions not out of the question through the winter.

7:04

The October ENSO outlook calls for 60% chance of La Nina emerging in the September, October, November timeframe. And by November, December, January, the chance of La Nina increases to near 75%. La Nina typically affects winter temperatures and precipitation throughout the world by impacting the strength and location of the jet stream. High variability or frequent week to week

changes are more likely this winter as compared to more persistent or prolonged periods of more consistent weather conditions.

7:34

Along with ENSO, short-term climate prediction models and longer-term temperature and precipitation trends inform the outlook. Given these climate factors, this is what we're expecting for temperature, precipitation, and drought this winter.

7:49

The winter 2024 temperature forecast favors warmer than average temperatures for the southern tier of the U.S. northward to include the eastern Great Lakes, eastern seaboard, and New England, as well as northern Alaska. These odds are strongest for parts of the southwest, southern Texas, and along the Gulf and southern Atlantic coasts. Cooler than average temperatures are most likely in southern Alaska and from the Pacific Northwest eastward to the northern Great Plains.

8:17

The winter 2024 precipitation forecast favors wetter than average conditions are most likely in the Great Lakes states for the Pacific Northwest and northern Rockies, as well as in northern and western Alaska, drier than average conditions for the southern U.S. from the southwest to the southern plains along the Gulf Coast and for the southeast as well as southeast Alaska. The highest likelihood for below normal precipitation is indicated for parts of the southwest southern Georgia and much of the Florida Peninsula.

8:50

As for the drought conditions this winter we anticipate widespread moderate to extreme drought will persist across much of the Great Plains and portions of the central Rocky Mountains. Drought is most likely to develop for many areas of the southwest, southern plains, and parts of the southeast. Meanwhile, drought conditions are expected to improve or end for the mid-Atlantic, New England, Central Appalachians, Ohio Valley, Pacific Northwest, and Hawaii.

The winter outlook is probabilistic in nature, meaning that the maps show those areas that are most likely to be warmer or colder than normal and wetter or drier than normal. However, the nature of a probabilistic forecast means that other outcomes are are always possible, though they are less likely. In fact, for our probabilities to be consistent with the nature of this outlook, the less likely outcomes must occur from time to time.

Now I'd like to turn it back over to Erica to moderate the question and answer session.

9:46

All right, thank you very much, Jon.

9:48

And at this time, I would like all of our presenters to turn their cameras back on and we'll take questions from reporters about NOAA's winter outlook. If you would like to ask a question, please either raise your hand by clicking the hand icon in the window next to your name in the attendees list, or you can type it into the Q &A box. If you type it, I will read it out loud for you. Otherwise, when called on, please unmute yourself, state your name and your news outlet, and if you are directing your question to a specific expert, you can do that at that time.

10:24

So our experts for Q &A today are Dr. Michael Morgan, as you just heard from him in his opening remarks. He is the Assistant Administrator for Observations and Prediction at NOAA, Jon Gottschalk, who you just heard to deliver the winter outlook. He is the Chief of the Operational Prediction Branch at NOAA's Climate Prediction Center.

10:44

On the line, we also have Brad Pugh, the Operational Drought Lead with NOAA's Climate Prediction Center, and Tom DiLiberto, a climate scientist with NOAA's Office of Communications. And without further ado, I will start with questions.

11:00

I do not see anyone with their hand up at this time, so I'll go to the first question that is in the Q &A panel.

11:07

And that question is from Tony Edwards at the San Francisco Chronicle.

11:12

How might global warm sea surface temperatures such as those in the Northwest Pacific Ocean impact U.S. weather this winter?

11:22

Right now, with generally weaker conditions in the tropics, we do expect quite a bit of variability.

11:31

And warmer temperatures at some of the higher latitudes in the Pacific and Atlantic Ocean, especially in the Pacific, may raise the threat or likelihood of potentially more wetter storms that could impact the West Coast.

11:46

There's quite a bit of high uncertainty with that though, as many of the different factors that come into storminess, linkage with tropical moisture, for example, and the intensity of the storm itself can play a large role with respect to average, actually whether precipitation will be above or below normal along the West Coast, especially California.

12:05

It's one reason why the current outlook for much of California is for equal chances because of the relatively weak And so a forcing or driver this year and a lot of the variability that will come from the West Coast precipitation could be related to within season or sub-season or week to week variability in storm systems.

12:24

And so it's a lower predictability winter than say last winter with the strong El Nino.

12:31

Okay, thank you, Jon.

12:32

Our next question is from, let me see, who is it from? Karl Plume, and he would like to know what does this winter outlook mean for water levels in the Mississippi River?

12:48

Right now the flows as they are typically during the autumn months are running below normal, but there is some some good news with the prediction as we go into the winter months.

12:58

Typically during La Nina conditions, the Ohio Valley, parts of the Great Lakes, especially later on in the winter months, say January, February, and so on, we do see often, even though this is a weak La Nina, favored to have above normal precipitation.

13:13

So that would be very helpful to the Mississippi River as a whole, because a large fraction of that comes from the Ohio River input in the central Mississippi Valley.

13:23

So favoring above normal precipitation in the area associated with La Nina and other factors may help water levels in time by the end of the winter for one of those for that reason.

13:33

Further south we do expect drier than normal conditions, but that in the lower Mississippi Valley where there's probably most likely less input than say some of the further north into the central and upper Mississippi Valley. Okay thank you.

13:49

Brian Sullivan has our next question.

13:51

Brian is from Bloomberg and he asks does the lack of a La Niña make it more difficult to come up with a seasonal forecast and how much more weight do things like the NAO have in a year like this?

14:04

Thanks, Brian.

14:04

Great question.

14:05

Just to be clear, we are favoring the development of La Nina conditions.

14:09

But as you note, ENSO neutral is still a possibility, but we are favoring at 60% and 75% probability that we will go into a La Nina this winter.

14:19

Given its weak nature and shorter duration event, we do have less confidence in some of the impacts.

14:24

May not be as wide ranging as may be typical, let's say, with the strong La Nina.

14:28

But in general, certainly with the forecast was more difficult this year than say last year where we had a very strong El Nino and that particular phase and strength, we have a lot more reliability and impacts.

14:43

So with respect to your second part of your question is that we rely on in these cases rely on other factors. For example, we do rely on short term climate prediction models. These are similar to weather forecast models but are run out in time further throughout the season through the winter and we have a number of those and we're able to look at patterns and consistency among those model predictions and outliers and so on to help us make the seasonal outlook.

15:13

But also we can rely on long-term temperature and precipitation trends. I'll say trends over the last 10 years as compared to our base period normal that we rank or equate to our long-term probabilities and anomalies that you see.

15:28

So with respect to the AO, NAO, for example, you're right, a lot of the sub-seasonal variability or changes within a month, each of the months, will play a larger role in the eventual seasonal departure from normal by the end of the winter than say a more persistent pattern of like a strong El Nino.

15:47

So, but those patterns are not predictable, really beyond two or three weeks. And we'll have some more understanding as we get further into the winter. But at this time in mid-October it's very difficult to say how those the AO will behave throughout January, February into March for example. Thank you Jon.

16:06

We have a question from Barbara Moran from WBUR in Boston.

16:12

She asks are we done with the most active part of the hurricane season or do you expect it will go out with a bang?

16:17

I would say to preface this question with more specifics on the hurricane outlook please reach out to me. I will connect you to Matthew Rosencrans, the lead hurricane seasonal forecaster. His focus is hurricanes and hurricanes only. But Jon, do you have anything that you'd like to add about the rest of the hurricane season?

16:39

Not really.

16:40

I think that would be the best approach, but we are entering almost entering November and officially the Atlantic hurricane season, for example, ends November 30th. So we still have another month, but we are on the other side of the peak of mid-September.

16:53

So, but I would uh follow-up Matt.

16:56

Yeah follow-up with Matt um he would be happy to to answer her any questions that you have about the hurricane season and uh just a reminder that you may ask a question verbally if you wish um you just have to click the the raise hand icon in the attendees list next to your name um and uh I see in here Judson Jones um in the Q &A but you did not ask a question So perhaps that's what you were trying to do.

17:24

So if you want to raise your hand, if you want to ask one verbally, feel free to do so.

17:30

Next question from Jon Doman at WTOP Radio in DC.

17:36

Can you be somewhat specific about the DC Metro region, the Mid-Atlantic region for this winter outlook? Sure, for the Mid-Atlantic region or greater DC area, we are favoring above normal temperatures along the Eastern Seaboard, including the DC metro area.

17:54

For precipitation, I'm kind of in a middle zone, favoring drier to the south across parts of Southern Virginia and the Southeast with wetter conditions that I mentioned further west into parts of Western Pennsylvania, New York, and the Ohio River Valley.

18:09

One thing that's often the case with La Niña to further along with that is that typically with the warmer conditions and a more storm track to the west, there typically is less snowfall in the Mid-Atlantic region.

18:22

If you look at composites for all La Nina events, including strong ones, there is a drier signal for less snowfall in that region, but there's more uncertainty given the weaker La Nina.

18:33

So generally warmer, kind of uncertain with precipitation, potentially less snowfall this year for the D.C. area.

18:42

Thank you, Jon.

18:44

And this question is for either you or Brad Pugh, and it comes from Ian James. He would like to know about the winter outlook for California, is drought likely to emerge or not.

18:56

Right now with the current drought outlook, the favorite for drought development is more focused in the southwest, eastward across much of the southern plains, south central plains, and into the

southeast, associated with the favorite forecast and the seasonal outlook as well as the monthly outlook.

19:14

For California, there was quite a bit of uncertainty as I mentioned and what the eventual precipitation will be going into the winter So right now there's drought is not favored to develop in California at the current time But it's something that we'll be watching very closely as we go into the winter Because La Nina events do sometimes have a dry signal, especially in Southern, California So we'll have to watch that very closely That would be good news Erin Douglas from the Boston Globe asks with the warmer than average temperatures favored in the South and New England.

19:46

Do you expect rain and less of the snow and frozen precipitation days than normal when it comes to precipitation in this winter?

19:57

Yeah, that's correct. That's what we're favoring.

20:00

But the warmer temperatures along the eastern seaboard and the storm track a little further inland or along the coast does bring in warmer temperatures.

20:07

Now for the parts of New England where it's typically almost, usually nearly almost always favored to be cold up to snow, there is a above average snowfall signal in northern New England and interior New England, but for the major cities along the coast, there's likely to be more rain and ice events mixed in with snow, snow changing terrain, events of that nature during La Nina events, and that's kind of what we're favoring right now.

20:35

Next question is from Jake Philpott at 118 degrees west and he wants to know is there any relationship between La Nina and early season atmospheric rivers that might impact the west coast or is there a way to broadly predict severity and frequency of atmospheric rivers?

20:53

Yeah, that's a great question.

20:55

Typically one of the things that we utilize very much for atmospheric rivers are linked to for let's say California and the west coast in general is one of those that some folks may not be familiar with is the Madden-Julian Oscillation, which is tropical rainfall patterns that move across the tropics, and sometimes those events can trigger atmospheric river events as the circulation or the flow pattern in the central Pacific can link with tropical moisture.

21:23

However, during La Nina events, the SSTs in the central Pacific are generally below normal, so sometimes MJ events are not as robust moving into the central Pacific, and that link is not always able to be made.

21:36

But given the weak ENSO conditions, overall, we've found that MJO activity, this very sub-seasonal changes in the tropics that I'm mentioning, can also be more active during weak El Niño, weak La Niño, or ENSO-neutral periods, as opposed to, say, a strong El Niño or a strong La Niña.

21:54

So the MJOs, what hedged MJO would be favored to be more active this year, but probably not as robust in the areas which tropical moisture links would feed into atmospheric river events. So it's a very uncertain situation, but that's the best way I think I can answer that question. Thank you, Jon.

22:12

Next question is for you as well, and it comes from Tony Wood at the Philadelphia Inquirer. He says, I believe this would be the 10th weak La Niña winter since 1950, based on our own data at the CPC. What would be the best analog winters for this? Yeah, that's a great question, Tony.

22:30

Well, What I ended up doing in preparing the outlook was that I took all the weak La Nina events and so neutral events actually in a composite sense to get a gauge on the bounds of what we might expect. And so that's kind of the way I handled it this year given the weak La Nina.

22:48

I didn't, especially with temperature, I wanted to use more recent 30 years with respect to the warming trend for temperature to focus more on the last 30 years or so. So that's mainly the way I handled that forecast, which was still remaining a slight tendency towards near to above normal temperatures along the eastern seaboard. And for precipitation, again, as I mentioned, kind of in the middle ground with respect to precipitation in the Philadelphia area. I hope that answers your question.

23:17

I'm going to go to a similar question, and this is from Judson Jones at the New York Times.

23:23

Also just kind of elaborating on the analog seasons, But he wanted to know, is it true that the average Heideke scores are lower in years when weak or neutral, and so conditions are predicted?

23:38

Yeah, I would have to go back and look at the exact numbers, but my feeling and tendency and past, you know, inspections of that is that that's the case. We have better predictability generally across the board during strong ENSO events, whether it be El Nino or La Nina. That's correct.

23:58

Next question from Tom Henry.

24:02

So given these conditions, are we likely to have a more traditional winter in the Great Lakes region, not sure what you mean by traditional, but maybe Jon you can say how this would compare to average conditions in the Great Lakes region. And what about ice cover in the Great Lakes.

24:26

Yes, I can take a stab at that.

24:29

With what we're expecting right now as compared to a traditional or average winter for the Great Lakes as a whole, is that early on, on November to December, we're favoring generally warmer conditions, favoring above average temperatures for most of the Great Lakes region.

24:43

But as we get into the later part of the winter, December and January and February, we start to see more of a tendency for lots of variability. We'll have more likely to have more arctic outbreaks than we had last year when we had very strong El Nino event and so there's a lot of we actually for a lot of the Great Lakes region we have actually equal chances because of that variability and uncertainty.

25:03

A little bit further to the west in the upper midwest we are actually favoring below normal temperatures and with respect to snowfall for an average winter in the northern plains and Great Lakes typically especially later in the winter there is a typical signal for above normal snowfall in that area and As a colby, I will say the Great Lakes are extremely warm right now.

25:28

We've had a very warm autumn and summer. Lake temperatures are well above normal. And obviously, it will take some time for ice to cover those lakes. And so lake effect is likely to be, if we do get Arctic air outbreaks in November during one of the peaks of the lake effect season into December and the lakes are remaining open and they remain warm, there could very high level of lake effect snow in the in the front part of the winter, November, December, and some of those downstream of the lake.

26:00

So that's something that's different this year that we need to be aware of. Last year with El Nino we generally had more warmer conditions, more high pressure so there was less arctic outbreaks and cold air coming over the lakes. This year could be very different and with the lakes being very warm above normal and open, potentially like later like if that could be a real issue this year in November and December. Now they can cool off very quickly with some of those arctic outbreaks but there could be a pretty quick burst in the first part of the winter. Thank you Jon.

26:31

Another question from Brian Sullivan and we're not going to get too much into like hyper local with the locations but I did want to highlight a couple of the questions that relate to regions because they help to tell the story of overall outlook. And this is what Brian asked. What about snow in NYC?

26:50

But he asks about the storm track. Is this pattern more conducive to inland storm tracks, coastal?

26:58

Do we get any signal from the ENSO or other patterns for this winter? Yeah, that's a great question.

27:04

With this situation that we have, even though it's a weak event, the storm track would be shifted inland.

27:10

Okay, so there would be more warmer water, warmer temperatures that would be impacted from the coastal area of the Atlantic Ocean. So there may be more ice, snow to change rain events than say during a typical Enso-neutral or an El Nino situation where the storm track is actually shipped to the southeast and further off the coast. So the answer to the question would be more of an inland or along the coast or inland storm track.

27:36

A great follow-on question to that from Meghan Musseline, which is related to that storm track. Would that affect the risk of coastal flooding and coastal erosion? It could be a favorable storm track to avoid that, right?

27:56

That's correct. I mean, with respect to more inland storm track, you certainly will have easterly flow into those storms, but the strongest winds are likely to be a little bit further inland, higher valley, western parts of the mid-Atlantic.

28:09

Whereas during a normal winter or an El Nino winter, some of those storms are very juiced, very energetic because of the deep tropical moisture and the gradient between warmer and cold.

28:19

And those storms can really wind up right along the coast and hug the coast. And you can have much more typical, more intense storms and more erosion and coastal flooding. This could be a situation where it may not be as bad because the storm track is shipped a little further inland. But it doesn't roll out strong to where he starts during the winter. So everyone still needs to be very prepared for that, for all those conditions.

28:42

Thank you, Jon.

28:43

Next question is for Dr. Morgan.

28:45

And this is from Tony Wood at the Philadelphia Inquirer again.

28:49

Given the weakness of the ENSO signal, do other climate trends bear more of an influence?

28:56

Is that the key factor in the temperature outlook?

29:01

I would say we have, you know, excellent climate scientists at NOAA and we're fortunate to have one of them on the line today and I'd like to ask Tom DiLiberto to perhaps address that specific question.

29:15

Hi, thank you. This is Tom DiLiberto. Can you just repeat the question one more time for me?

29:20

Sure.

29:21

With the lack of a prominent ENSO signal, does the overlying climate trend kind of take center stage with this winter outlook?

29:33

So, you know, the forecasters at the Climate Protection Center, as Jon mentioned, look into a lot of different factors when they're coming up with their outlooks every winter.With that being said, winter for many regions across the United States is the fastest warming season of any of the seasons due to our changing climate and warming climate. So if you look on the long-term sorts of patterns, the signal is clearly warming for winter.

However, when it comes to an individual winter and an individual season, there obviously can be other factors that can override the longer term trend, which is warming that could lead to there being average temperatures or even below average temperatures for a season. It's one of the reasons why when you take a look at the outlooks, they're always probabilistic and they're always taking into account many different factors that include the trend, but not just the trend.

30:28

Thank you, Tom.

30:28

Our next question is from Jonathan Ingram, and he wants to know, are there any indicators that NOAA has been, that NOAA has seen heading into November, where areas in Colorado, Utah, the front range of the Rockies will continue to see extensive heat records happening with low precipitation falling?

30:47

Well, I think at this time, you're going into the late fall and early winter, the likelihood of impacts associated with that are obviously low, but as we saw with the drought outlook that was prepared by Brad Pugh, we expect drought to persist through the winter and develop further south, including parts of the Central Rockies in Colorado.

31:11

So that certainly stacks or tilts the dice, if you will, a little bit as we get into the spring, depending on all things being equal, depending on how the precipitation during the winter pans out in spring, that if dry conditions remain there and drought persists, yes, that's going to favor or hedge towards more potential extreme heat events going into the early summer months.

31:32

But we still have to wait a ways to see how the precipitation over the winter turns out.

31:38

Thanks, Jon. Next question is from Lizzie Acker.

31:41

And I know that you can't get into specifics on how much snow is going to fall in any location.

31:47

But she would like to know if this pattern is, or this outlook is favorable for the snowpack specifically in the Pacific Northwest.

31:57

Yeah, that's a great question.

31:58

Yes, again, it's a weak event, but during La Nina events above average snowfall is the favorite across much of the Pacific Northwest, the mountains, Northern Rockies, and even into the parts of Central Rockies. And even into parts of Northern California, depending on how strong the event is. But yes, it would favor hopefully a increased snowpack by the time we get into the spring months or later spring months for that part of the country.

32:28

Thank you.

32:30

Next question is from Matt Noren.

32:32

Can you speak to the overall snow outlook in terms of volume and frequency?

32:40

Okay, well, it's important to know.

32:42

it doesn't actually does not produce official snowfall forecast but I can comment as I mentioned earlier with some areas in which during what we're expecting climate drivers this winter is that as I mentioned we're looking at more snow across specific northwest parts of the north central rockies also some areas in the northern plains and western great lakes were basically upper midwest especially later in the winter and also for the northeast and northern part of the northeast New England, where we're expecting a little bit less snowfall again on average, given the factors that we're looking at would be the mid-Atlantic, but also the south-central high plains and great plains, meaning the Texas Panhandle, Oklahoma, and Colorado, and Kansas.

33:27

Those areas don't necessarily get a lot of snow, but during La Niña events, storm track has shifted north and we're generally favoring warmer temperatures as well as drier conditions, so the snowfall is usually below average in those areas. And again, I mentioned already early on in the winter in this particular season with respect to lake effect. So I hope that answers the question.

33:49

Thank you, Jon.

33:51

Another question from Tom Henry, and he asked the kind of specific thing about the forecast for the Great Lakes region, but what he asked that I would like to really bring to you is how will this winter compare to last winter?

34:28

Um, El Nino and um, that tend a lot of warm pacific air flooding in the North American continent and warm temperatures across the entire Northern tier in Southern Canada.

34:42

And so, yes, last year's verification for the winter, for example, was basically warm across the entire country, some near areas of near normal in the central part, but that was the outlook at that point.

34:54

And typically, one thing that was really important last year that we don't expect this year is we had very strong snow drought, meaning mainly driven by warmer than normal temperatures, which was the forecast as well as what was observed and so even though the precipitation may have been average as far as the type of precipitation they were way below normal snowfall wise by the end of the winter into the early spring and that plays a role in water levels because you don't have a slow recharge of the river system in the spring with snow melt it's more basically melts away right away and so that's a big difference than what we're expecting this year, expecting near to below normal temperature in some of those areas with actually enhanced odds for above normal precipitation.

35:41

So very different.

35:43

Thank you, Jon.

35:45

Erin Douglas again from the Boston Globe.

35:48

She would like some clarity on what you meant by high variability within the ENSO outlook.

Great question.

35:56

What I mean by that is that during a strong El Nino event, there's a little bit more of persistence, meaning the multiple weeks could be strung together with similar weather conditions, meaning warm and dry, warm and wet, things like that.

36:09

During a more weaker ENSO event, whether it be a weak La Nina or weak El Nino event or ENSO neutral, there's changes in the jet stream that are much more frequent. And so you may have one to two weeks of a certain weather pattern or conditions, warm and wet, and you could change to, in the next week or two, to cold and dry.

That more of those changes within each month and with an overall the whole season from December to February is what I mean by that hopefully that makes sense. Excellent Another question from Tom Henry.

36:43

He said I know you can't predict when the jet stream will wobble. Thank you for knowing that. But are you able to say how stable it is and what the odds are of having one of those polar vortex?

36:56

Arctic outbreaks when you have this setup This is a great question. I would say, given, like I mentioned earlier, one of the questions, very different than last year with the strong El Nino, with weekends of forcing and what we're seeing in the model guidance, it's probably more likely that we'll have a weakening stratospheric polar vortex at times this winter than, say, last winter.

And the reason that that's important, that causes the wobbles that he's mentioning there, and when those wobbles occur, there's greater chance for Antarctic air to break off of the really cold pool at the pole. So I would say that's a little bit more likely than last year. There's a few other factors that make it, however, less likely statistically, which I necessarily won't go into too much, but basically some current conditions in the stratosphere and in the current week and so strength.

37:50

Both of those tend to limit or reduce statistically over many events, release basically of what's called a sudden stratospheric warming or weakening of the stratospheric polar vortex and those more arctic air outbreaks. But you can certainly have one of those at any year, multiple during time during the winter. But if I was the hedge, I would say those two factors are competing with each other.

38:17

All right, we have a couple hands raised.

38:20

I'm gonna go to Ian James first.

38:22

Ian, I have unmuted you and you are free to ask your question.

38:28

Oh, thank you. You had, you did answer my question about California. I also would like to ask, it looks like the forecast calls for significant emergence of drought conditions in the Colorado River Basin. Is there anything you would add about that?

38:44

Correct.

38:46

Given the La Nina conditions and the drier precipitation of sigma that we see with during La Nina events, we do expect drought development to occur. I don't know if Brad, if you wanted to add in any way to that question to help answer the question.

39:03

Brad's right here with me.

39:08

Yeah, hello.

39:10

Yeah, in terms of the drought outlook for the next few months, Colorado River Basin, one of the factors that would lead to drought development here is the past 30 days has been on the drier side. So yeah, that would certainly increase the chances. With that being said, there is going to be some precipitation over the next week, so that might tend to slow down the drought development, but for the season as a whole, by the end of January, we are expecting a drought to expand throughout the Four Corners region, including the Colorado River Basin.

39:49

Thank you.

39:52

Thank you, Brad.

39:53

Another raised hand, Judson Jones, New York Times.

39:58

I am unmuting you, and you may ask your question.

40:03

Hey, thank you all so much for doing this once again. I think I just wanted to get a little bit of clarification just maybe in more normal speak of just about the variable jet stream and the stratospheric warming. You said that maybe this forecast and those are at odds and that that maybe we wouldn't see that. I just want to get more clarification in that response from earlier.

40:33

That's a great question. And I think I would like to clarify that.

40:36

So there's two factors, one with respect to during a weak ENSO phase, very often the ENSO has a relationship with the stratospheric polar vortex, but more when there's a strong El Nino or strong La Nina, but we don't really have that going on right now. So there's not, that would tend to favor not having much in the way of impacts on the stratosphere, one way or another to impact the troposphere and the mid-latitudes where we are. And also with respect to the westerly QBO, which is quasi-bionic oscillation, but basically the winds in the stratosphere, those are more in the westerly wind phase, which also tends to, in a statistical sense, over many cases, limits the potential arctic air masses and stratospheric influences that would result colder temperatures and arctic outbreaks with that. So that's what I tried to communicate there.

41:37

So right now we're favoring there's more variability so we may get that with respect to not having a strong ENSO phase right now but with respect to the stratospheric polar vortex which was the question those the other conditions we have right now are really not favoring that so that's kind of what I meant by there's there's a lot of uncertainty with that sort of signal not predictable at this range. I hope that helps a little. Thank you Jon. Next question going back to the Q &A box.

42:09

Tim Miller at University of Florida wants to know, this one might be for Jon, it might be for Tom, because he wants to know about the ENSO outlook and we've been in a La Niña watch now for months and months. So how high is the confidence that La Niña will indeed develop or emerge in this You know, cracking that, as we mentioned, we're favoring La Nina to develop just this autumn at 60% probability.

42:39

That is, we have been expecting La Nina to develop over the last few seasons.That hasn't happened. We're still in a La Nina watch. But conditions, and 75% as we get into the winter, but conditions in the Pacific are improving. Temperatures in the central Pacific have cooled recently. Some of the one area that we monitor very closely for the first time is a minus 0.5 degrees, which is the, just for the weekly average, is over the barrier for like a week of La Nina event. We've had increased trade winds there. So there are, and we still have colder ocean water at depth below the surface. So all those things still point that we're still on the track towards La Nina development.

It's just been delayed a little bit from what we can say, but I'll turn it over to Tom to further clarify from his perspective. I was going to say Jon that covered it. I was going to say just what Jon said.

43:33

That's just that. Great, thanks. All right, I have another question. This one is from Emily Jones.

43:45

She would like to know, and this might be beyond the winter outlook, this might be going into the spring, so just caveat with that. But she is thinking back to a very strong 2021 La Niña when we saw rapid earlier So even if we do get good out west, um, does La Ni with a later than normal any correlation?

44:10

Typical with a later melt off.

44:14

On northern areas, at least, a bit of snowpack above there tends to be below and linger even into the January through March seasons, late winter to the very early spring. So usually statistically on average over many events, typically it actually is a later snow melt. However, and even somewhat more of a controlled snow melt, which is a good thing. However, weather can change obviously very much. And if you have a period of high pressure, upper level high pressure or ridging and warmer temperatures and also wet conditions, For example, for the Pacific, the snowpack can melt extremely quickly, not only from warmer temperatures, but also the melting that occurs with rainfall. And so that can happen.

And that's just a function of how the weather conditions are in April and May during that time period, which we can't really say at that level at this forecast lead time.

45:18

Let's see here.

45:19

We've covered most of the regions of the country as far as what this means for them.

45:25

We do have a question from Erica Rodriguez asking about what we can expect for the Southeast. She said specific to Florida because Florida seems to be a different animal, but I was looking for something a little bit more specific as far as temper precip for Erica's question, but she would like to know, hey, we just went through these two terrible hurricanes, what are we expecting as we head into the winter in Florida?

45:49

Yeah, for Florida, the actually good news with respect to the forecast is that certainly with all the heavy precipitation, we are favoring during La Nina events and from what we're seeing and with other factors that drier than normal conditions are our forecasts are favored for the winter, beginning in, you know, December, January and February here, but also continuing through, you know, January, February, March and during that period, which is consistent with La Nina and the short-term climate prediction models we're seeing.

46:20

So from the precipitation front, that is good news. And also generally favoring warmer than normal temperatures. So actually more, perhaps warmer during the winter overall. So warmer and drier.

46:38

Next question is from Wen Bryan from the Richmond Confidential.

46:43

Wanting to know, given a major heat wave hit the San Francisco Bay area two weeks ago, what are the chances that a similar situation were to play out in the upcoming months?

46:55

I think that it's quite unlikely, just given the seasonal cycle, meaning where we're at in the season, you can have late season autumn heat waves like this. We had one last year in the South and also this year in the Southwest and into California, but it's unlikely as we're getting into October, in November, that even extreme heat with respect to above normal temperatures will approach the warning levels, if you will, health levels like we've had recently, just because of the overall climatology or normal decreasing as we get into the later fall and winter.

47:33

Next question is from Amy Graff of SFGATE.

47:37

She would like you to elaborate a little bit on the might impact California's winter? Do you think that this could be a dominant factor, especially since we have a weak La Nina signal? That's a great question.

47:55

The way I would answer that is the temperatures are quite above normal in the Pacific Northwest because of the storminess that the North Pacific storm track and storminess that's occurred over the last few months has been, has made like the Bering Sea and very wet conditions in Alaska and that's continued But also to the south of that more raging and high pressure, less precipitation, a shifted storm track to the north, has raised those ocean surface temperatures in that region.

48:23

At higher latitudes like this, the sea surface temperatures are much more variable. So they can be used much less for predictability at longer lead times. So what I'm saying is those ocean temperatures that you're identifying in the Northwest Pacific could easily change within a period of a couple of weeks once the storm track changes and or the jet stream changes, let's say. And so using those as a predictor are quite challenging at the higher latitudes in the North Pacific, for example. So it's certainly something we will be watching if it persists, but those typically change quite a bit and are very difficult to use as longer-term outlaw predictors.

Another question from Jonathan Ingram.

49:07

Is there Any data showing that the liquid housed in the snowpack is becoming more dry? Is snow water equivalent shrinking as winter seem to be warming?

49:21

I'm not sure I would rather probably pass on that question and we might want to turn that over to either Tom. Perhaps we may know more about that given the climate change angle or warming angle if possible.

49:37

Yeah, I might also at the best, I don't know about the snow water equivalent and the trends in snow water equivalent.It might be something we reach out to the National Water Center, some other folks to look at.

49:52

And Jonathan, you can go ahead and send us an email at nws.pa at NOAA.gov. And that goes for everyone on this call. The more than 120 of you that are still on this call. Any follow-up questions or if you would like to request a one-on-one interview, just feel free to follow up with us. Let's see here. What other questions do we have? Okay, Jacob Philpott has another question. 118 degrees west is his outlet.

50:25

Is there a relationship between weak La Nina conditions and impactful winter surf conditions?

50:33

Great question.

50:36

That I would have to say, you know, surf conditions, I believe for an El Nino event where there's a stronger jet stream, typically there is an enhanced wave action. But for a weaker, weak La Nina event or even El Nino event, I don't think there would be a strong signal for that just because of the forcing that is required. Typically, I think during, we need strong jet stream activity with what you would see across the with El Nino. We're not expecting that this year. You certainly can have that

during periods of the winter of course, but as far as a longer term on average, it's a very difficult question to answer reliably.

51:15

I've got another difficult question for you, because we did say that snow amounts are not something that we can we can forecast. Jack McGowan has a slightly different angle on this. He would like to know if we have any predictions for snow depth across the northern tier of the U.S.

51:39

No, they're obviously very much related. We don't do the official snowfall outlooks, including snow depth. We can only comment on our typical precipitation forecast and what the most likely outcome being linked to those two forecasts. I mean, the snowfall outlooks are an area of not outlooks, but variability is a research activity that's going on within NOAA. It's just the Climate Prediction Center doesn't officially make those outlooks currently.

52:12

All right.

52:14

We already talked about the Great Lakes region a little bit, but Patty Wetley was wondering if you could just get a little bit more specific about expectations for the Chicago area.

52:30

Again, as I mentioned, all of the Great Lakes are considerably above normal, though, surface temperatures.And so, in the peak lake effect months, you know, November, December, depending on exactly when the cold air or the outbreaks occur, it could be a high, you know, high, an early spike with respect to lake effect snowfall, including Chicago, because basically depending the orientation of the winds associated with the frontal passages and arctic air that's coming over the Great Lakes, Chicago will also have that threat as will Buffalo and other areas depending on the

exact configuration of the cold air mass coming over the Great Lakes. So they also would be favored to have probably an early start to the lake effect season if we do get cold air masses coming across due to the warm water at the lakes.

53:28

And you already did talk about the polar vortex, but Doyle Rice from USA Today did want to know if you had any predictions for whether a polar vortex outbreak is less likely, more likely, any signal for this winter.

53:48

Right, I mean, as I mentioned a little bit earlier, two factors that I conveyed would hedge that it's less likely, but again there's a lot of, they're extremely complicated, there's a lot of factors involved, but the current situation in the stratosphere and the current relatively weak ENSO state, both of those tends, again statistically over many events, tend to favor less likely perhaps of a stratospheric polar vortex into displacement of arctic air.

54:18

However, you know there may be more likely compared to last year because we had a strong El Nino event and warmer temperatures so that we didn't have many of those events. so it's a very complicated question to answer because just over many events over the last 20-30 years, probably yes. I mean probably not, sorry, but with respect to last year, probably more likely given the strong El Nino event last year.

54:45

Hopefully that makes some I think it does. Yeah, it made sense to me. So hopefully all our reporters on the line got the gist of that. So we have just one more question in the Q &A.

55:01

And before I ask this question, I want to confirm that we don't have any questions in the chat. And it looks like we're good there. So everyone has been using the Q &A. Thank you very much everybody for your excellent questions. And a few people did raise their hands. So we got some questions via audio as well. So we'll end with a question from Ben Noble. He would like to know how this winter outlook will affect Santa's route on Christmas Eve.

55:32

That's very complicated. We have a very specific model for that, but we run that after Thanksgiving. and I'll be very happy to report on what that shows at that time after Thanksgiving. But I will definitely report that, pass that on.

55:49

Thank you.

55:50

Yeah, thank you, Jon, for that.

55:52

And thank you, Dr Morgan and Tom DiLiberto and Brad Pugh for answering questions from our reporters today. And so now that we have no further questions, just wanna remind everybody that if you did want to set up one-on-one interview or if you have any questions lingering at the end of this call. Think of anything this afternoon. Just get in touch with me via email at erica.grow.cei at noaa.gov or nws.pa at noaa.gov. Both of those email addresses are in the chat as is the link to the press release that was just posted on NOAA.gov. So you can find that there. Thank you again, everybody, for joining us today. And this concludes our press briefing.