

# NWS Winter Outlook 2021-22

Washington County

Andy Bryant, NWS Portland

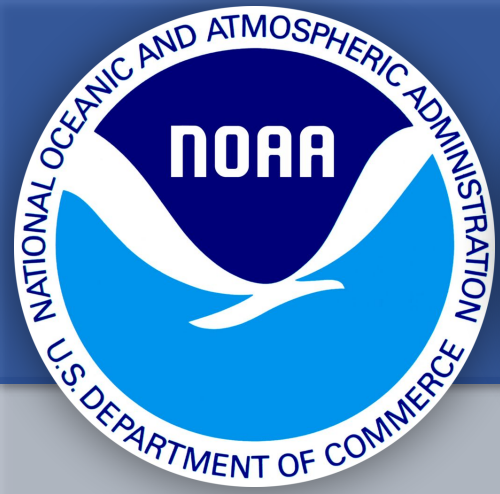
Weather Forecast Office

Portland, OR

Wednesday, October 20







# NWS Winter Outlook 2021-22

Washington County

Andy Bryant, NWS Portland

Weather Forecast Office

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# Key Points

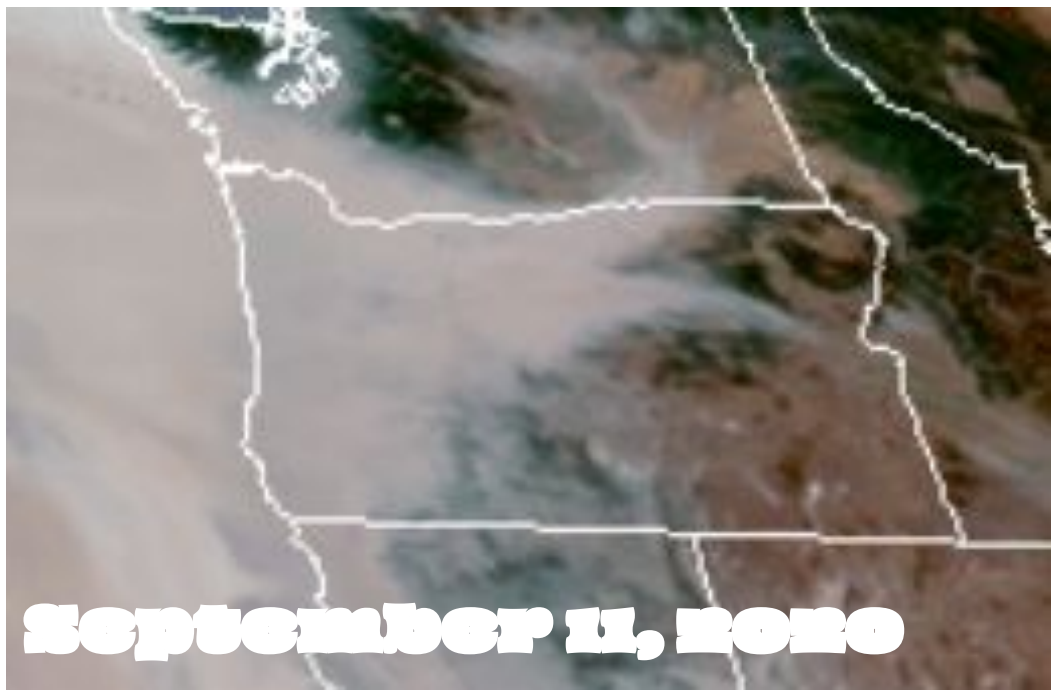
- **Review of Oregon Weather Events (September 2020 - September 2021)**
- **La Niña conditions now and 80-90% likely to continue through winter**
- **Second-Year, or “Double Dip” La Niña**
- **NWS Climate Prediction Center (CPC) outlooks:**
  - 1) a Wetter than Normal Fall 2021, and**
  - 2) a Cooler and Wetter than normal Winter**

*We'll wrap up with some NWS updates on services...*

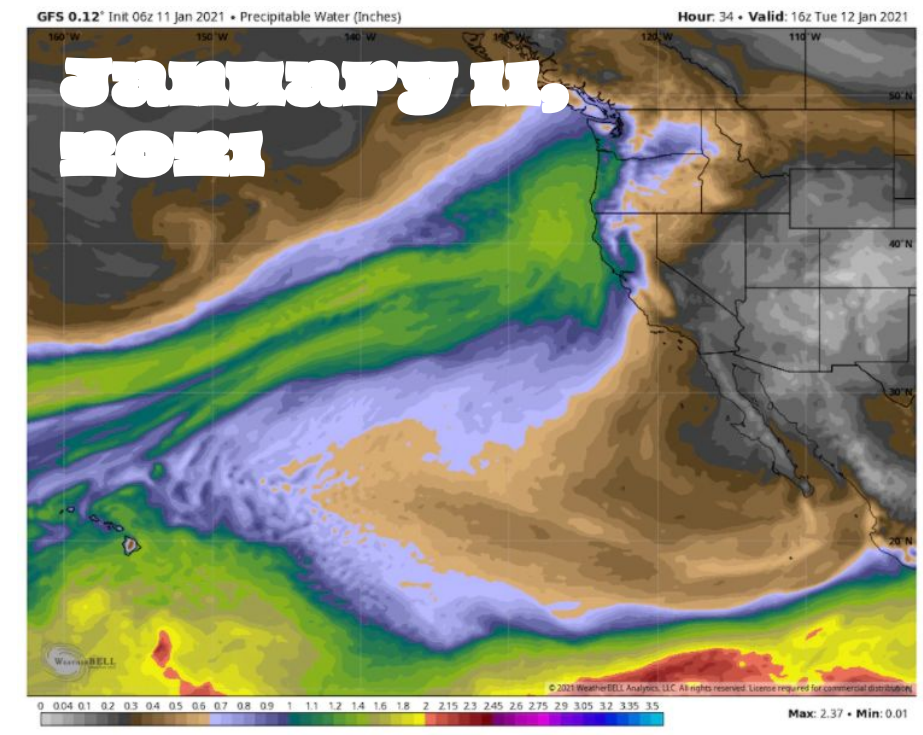




**November 17, 2020:**  
Structure of



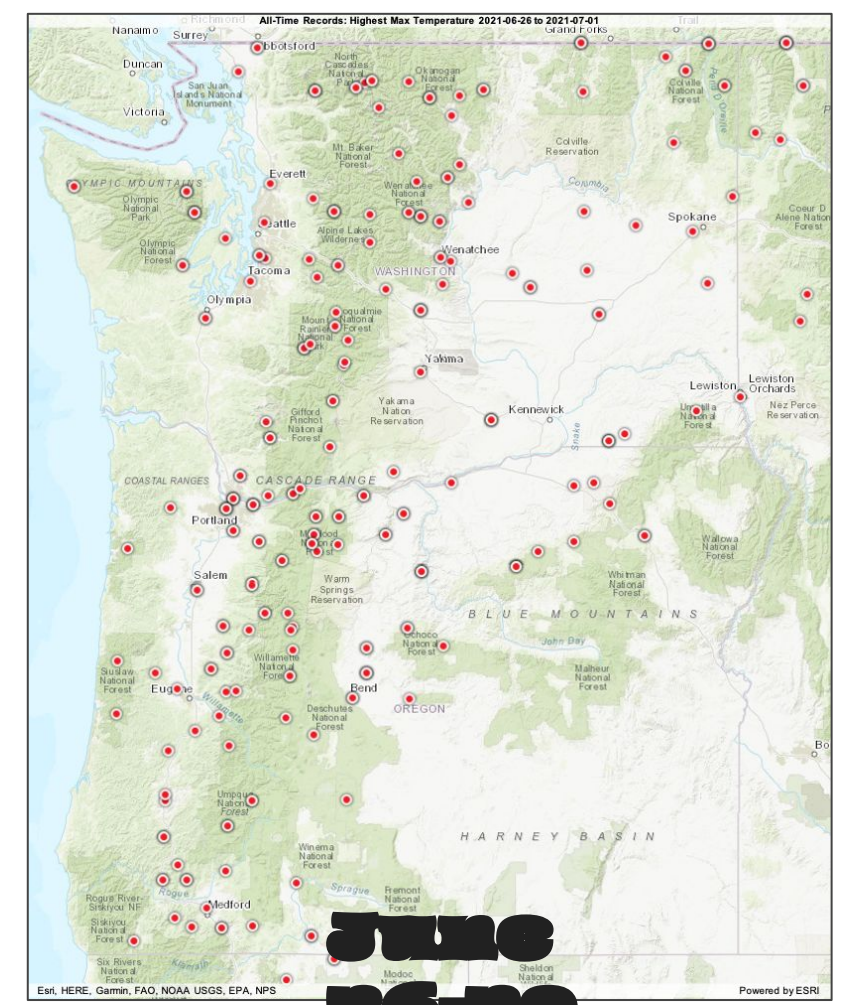
**September 11, 2020**



**FEBRUARY 13, 2021**

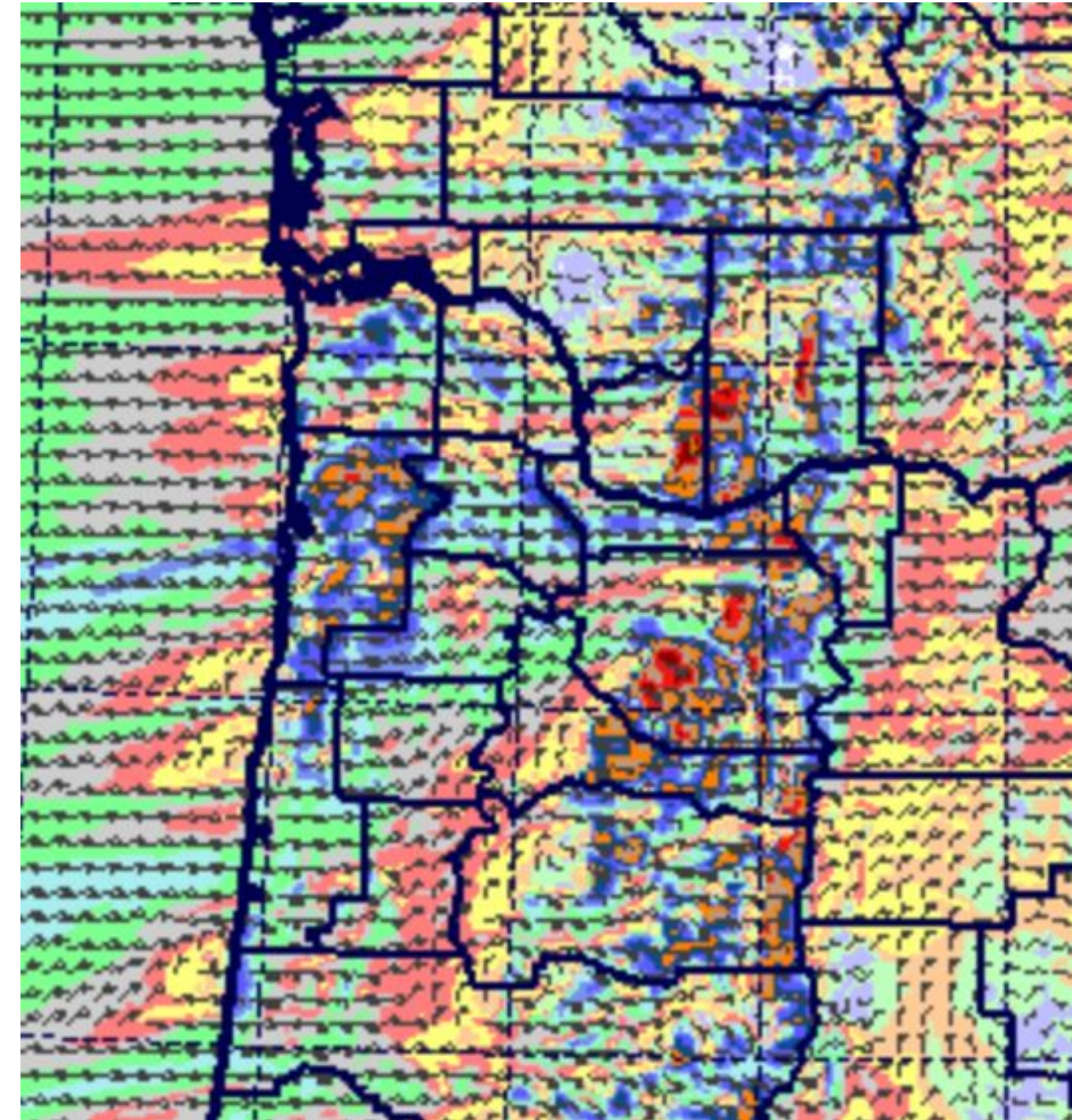
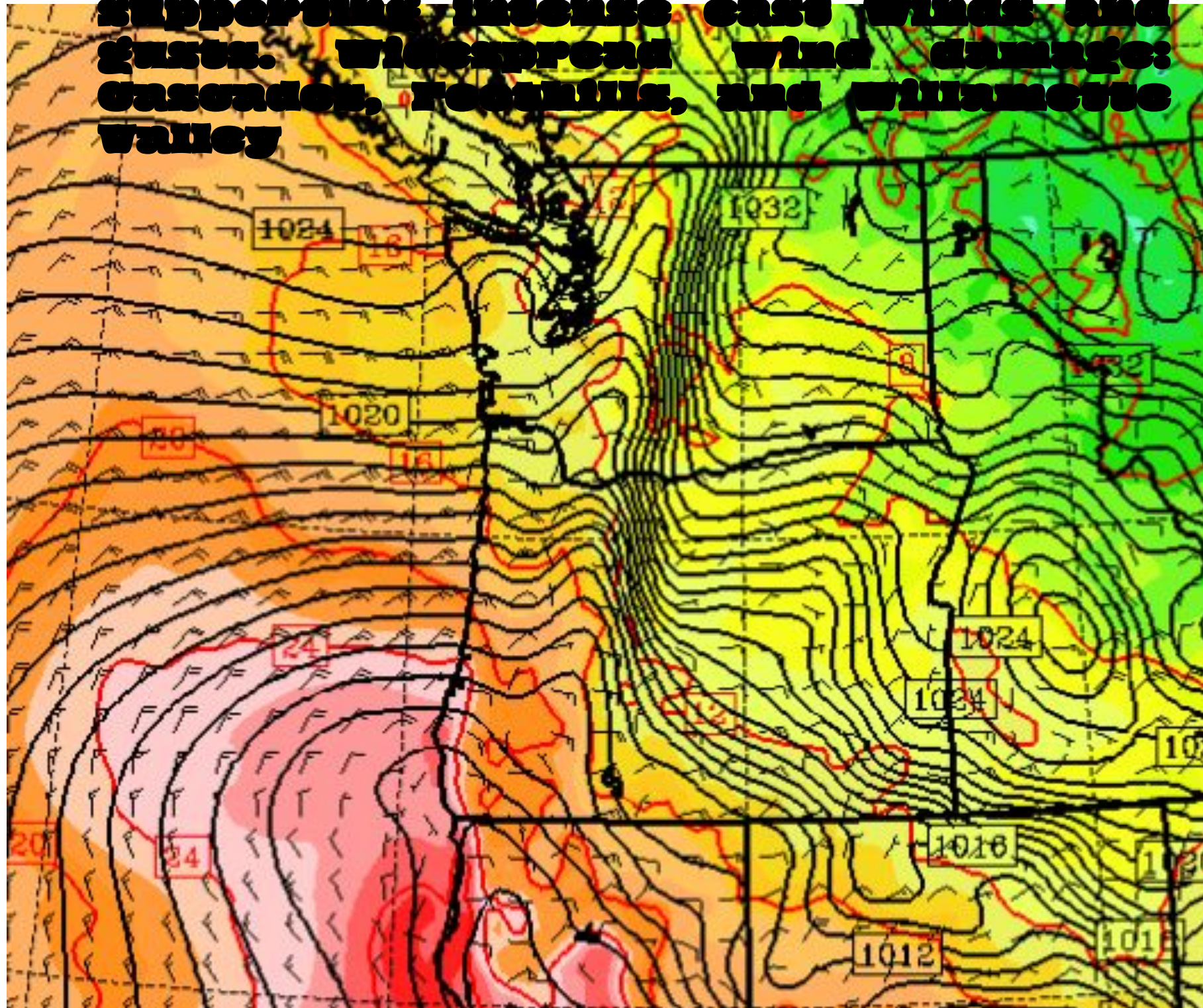


**FEBRUARY 14, 2021**





**Surface Pressure (black lines) the morning of September 8, 2020. Note the incredibly strong gradient along the Cascades as strong high pressure moved into the Columbia Basin - supporting intense east winds and gusts. Widespread wind damage: Cascades, Tualumns, and Willamette Valley**



**Corresponding model forecast of wind gusts - areas in red are greater than 70 mph**

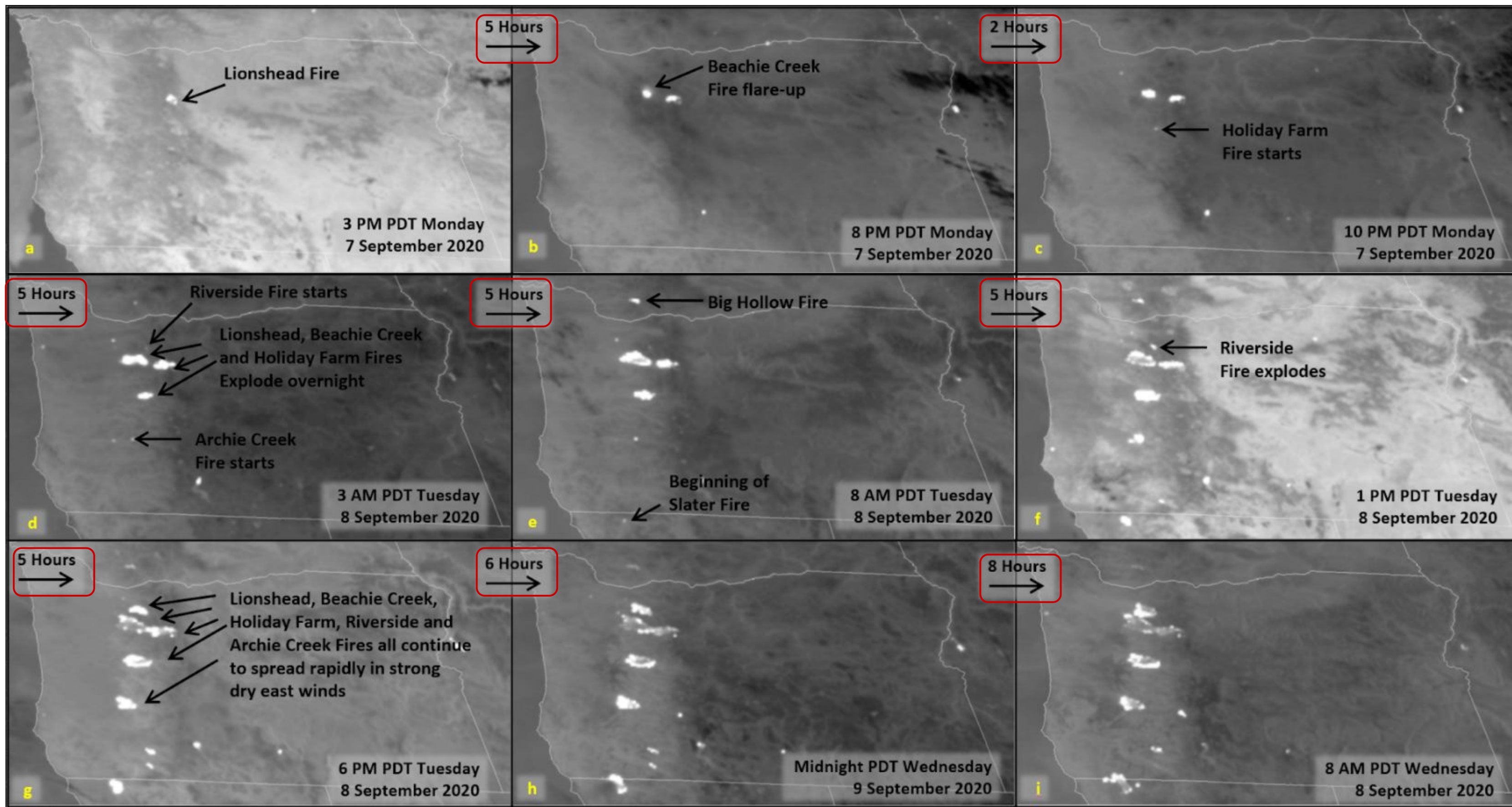






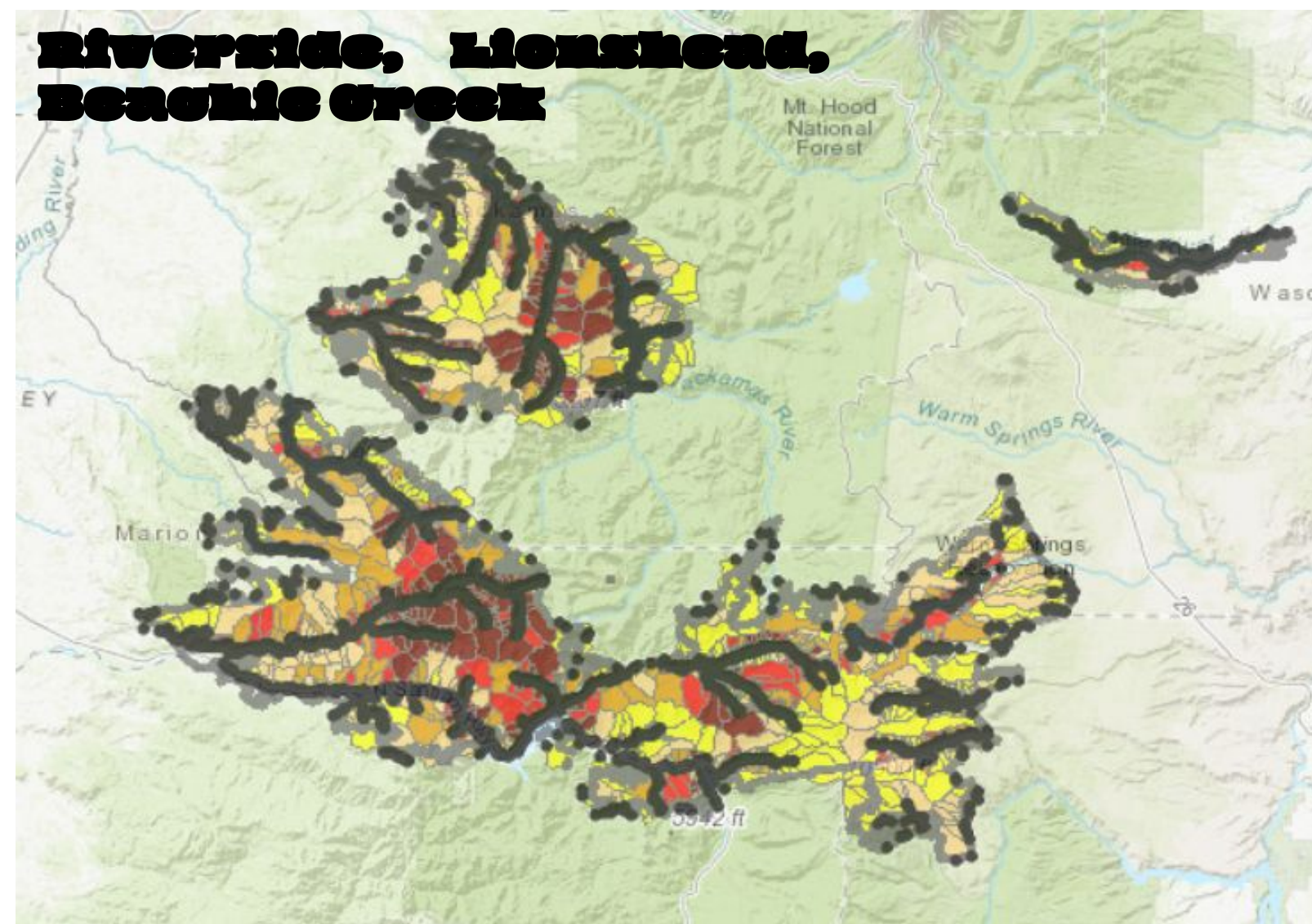
# Resultant Large Wildfires: September, 2020

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Portland, OR  
Wednesday, October 20



**~40-hour GOES-W, Band 7 (shortwave IR) satellite composite depicting the explosive wildfire growth September 7-8, 2020 during the strong**

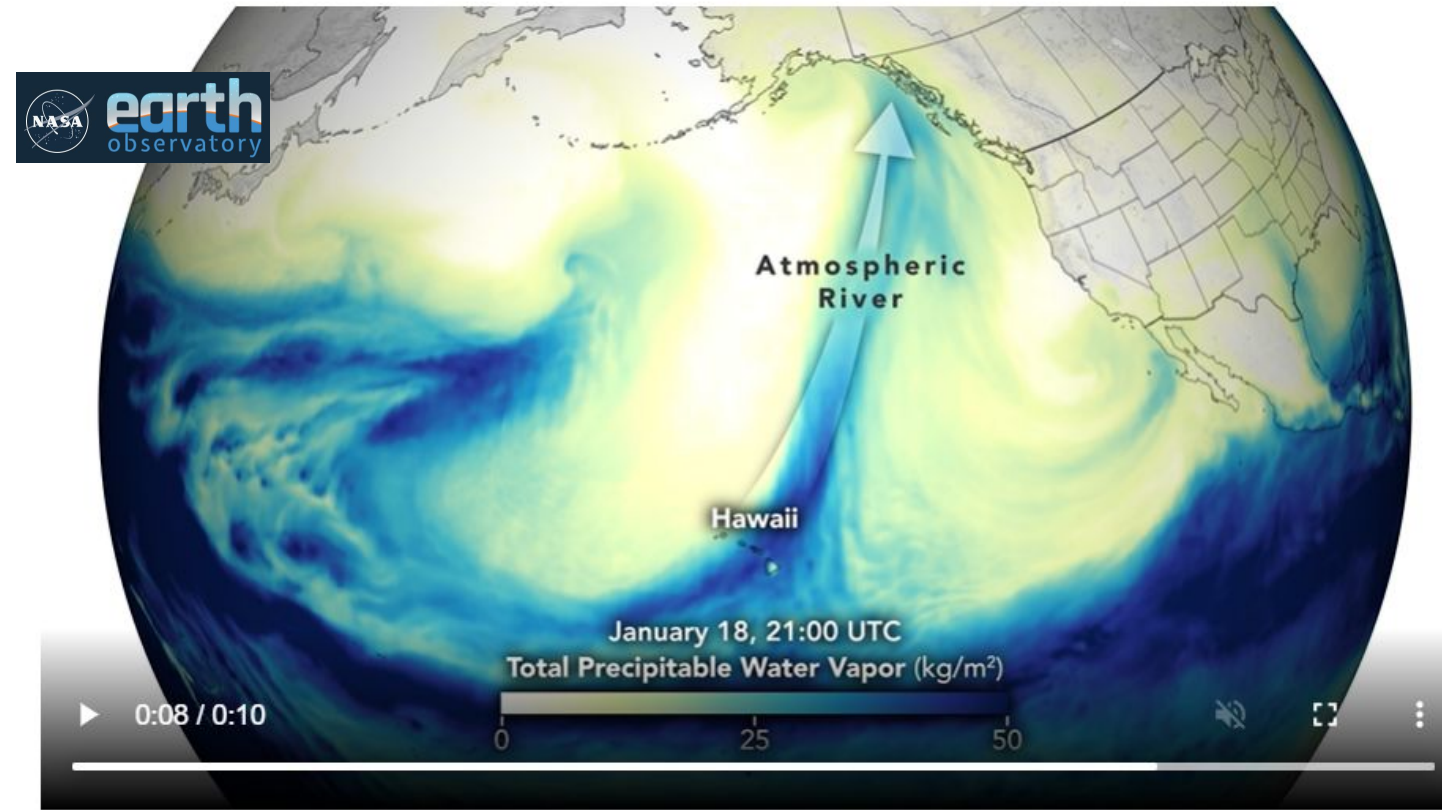




**Composite of September 2020 Oregon wildfires (left), and zoomed-in burn intensity maps for the Riverside, Lionshead, Beachie Creek, Holiday Farm, and Archie**



Anomalous moisture feed led to periods of heavy rain, resulting in **river flooding, mudslides, and landslides.**



January 11 - 18, 2021

MPEG

## Main Stem River Flooding:

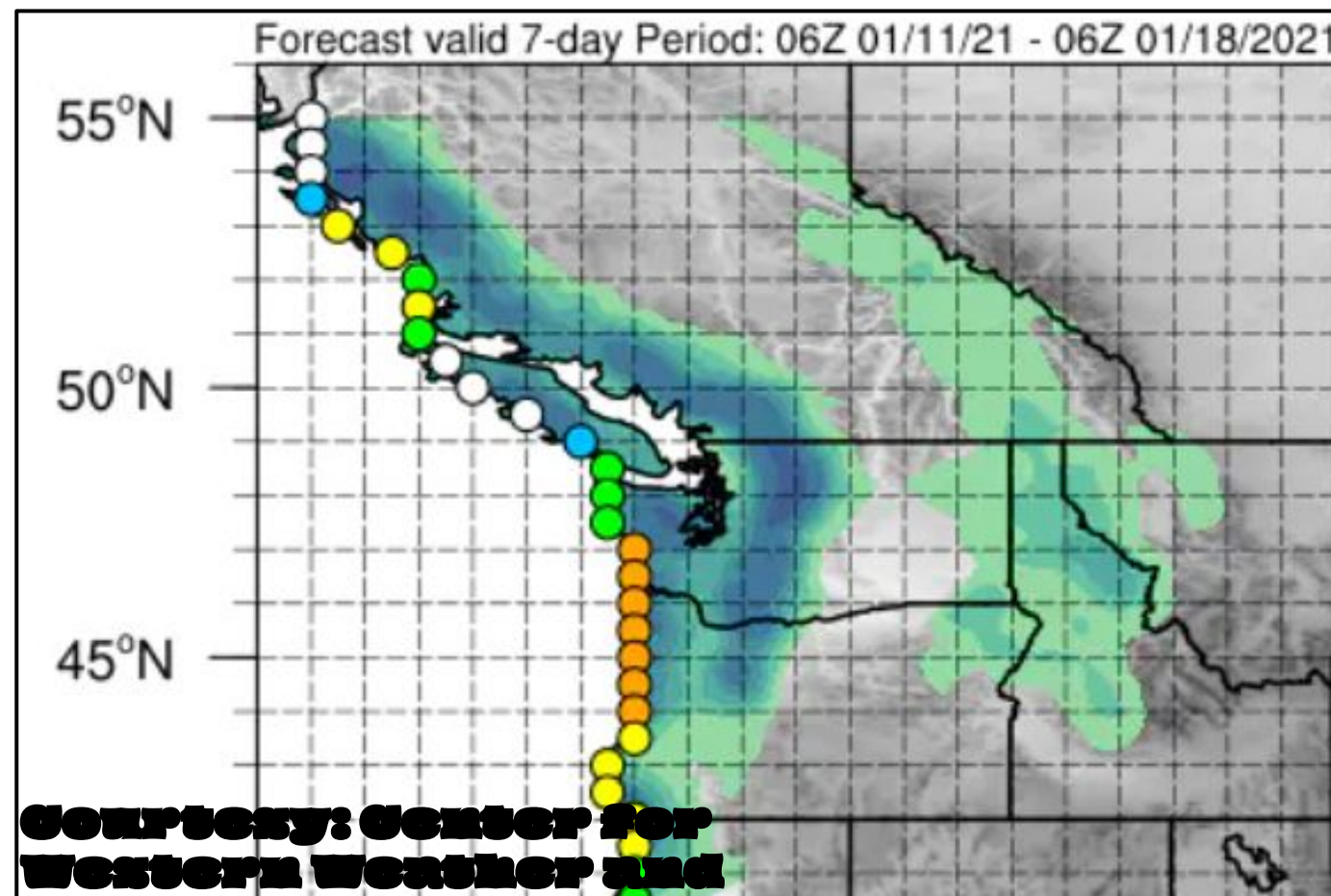
1. Wilson R near Tillamook
2. Trask R near Tillamook
3. Alsea R near Tidewater
4. Nehalem R near Vernonia
5. Nehalem R near Foss
6. Siuslaw R near Mapleton
7. Siletz R near Siletz
8. Marys R near Philomath
9. Tualatin R near Dilley
10. Luckiamute R near Suver
11. Tualatin R near Farmington
12. Clackamas R near Estcada

## Large Creek Flooding:

1. Fanno Creek in Portland
2. Johnson Creek in Portland



Photo: ODOT



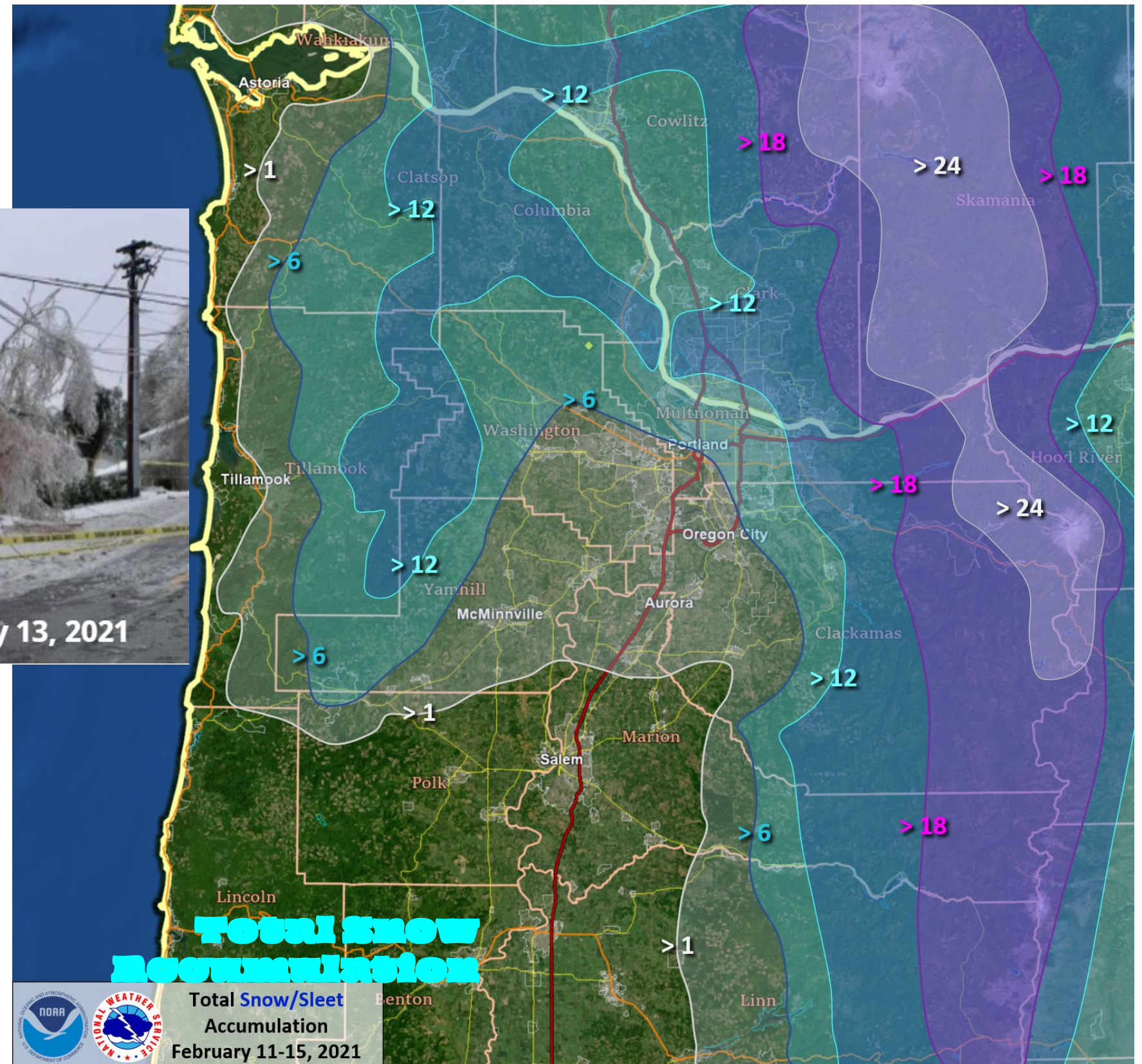
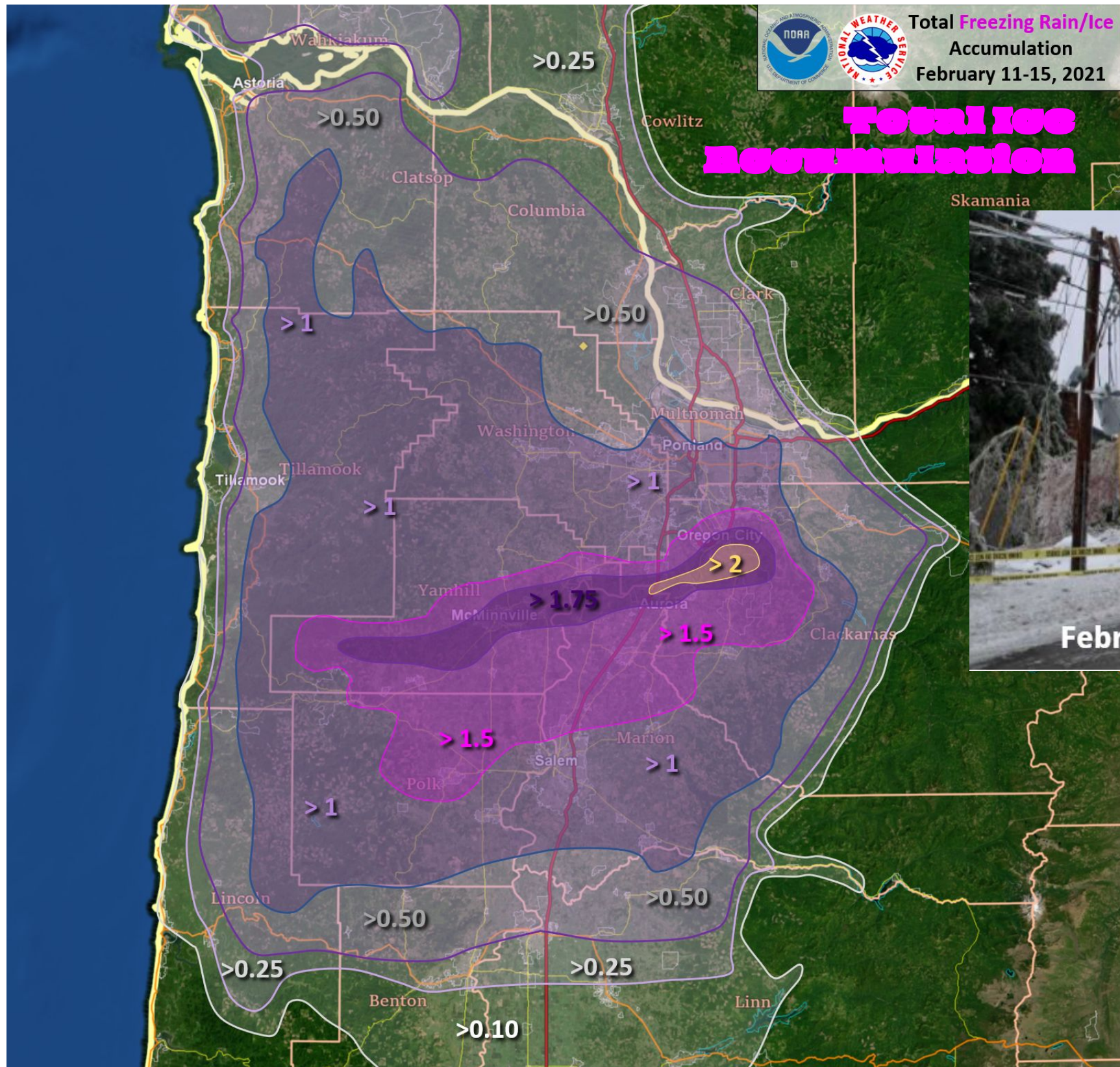
**Courtesy: Center for Western Weather and Water Extremes**





# Major Snow and Ice Storm: February 11-14 2021

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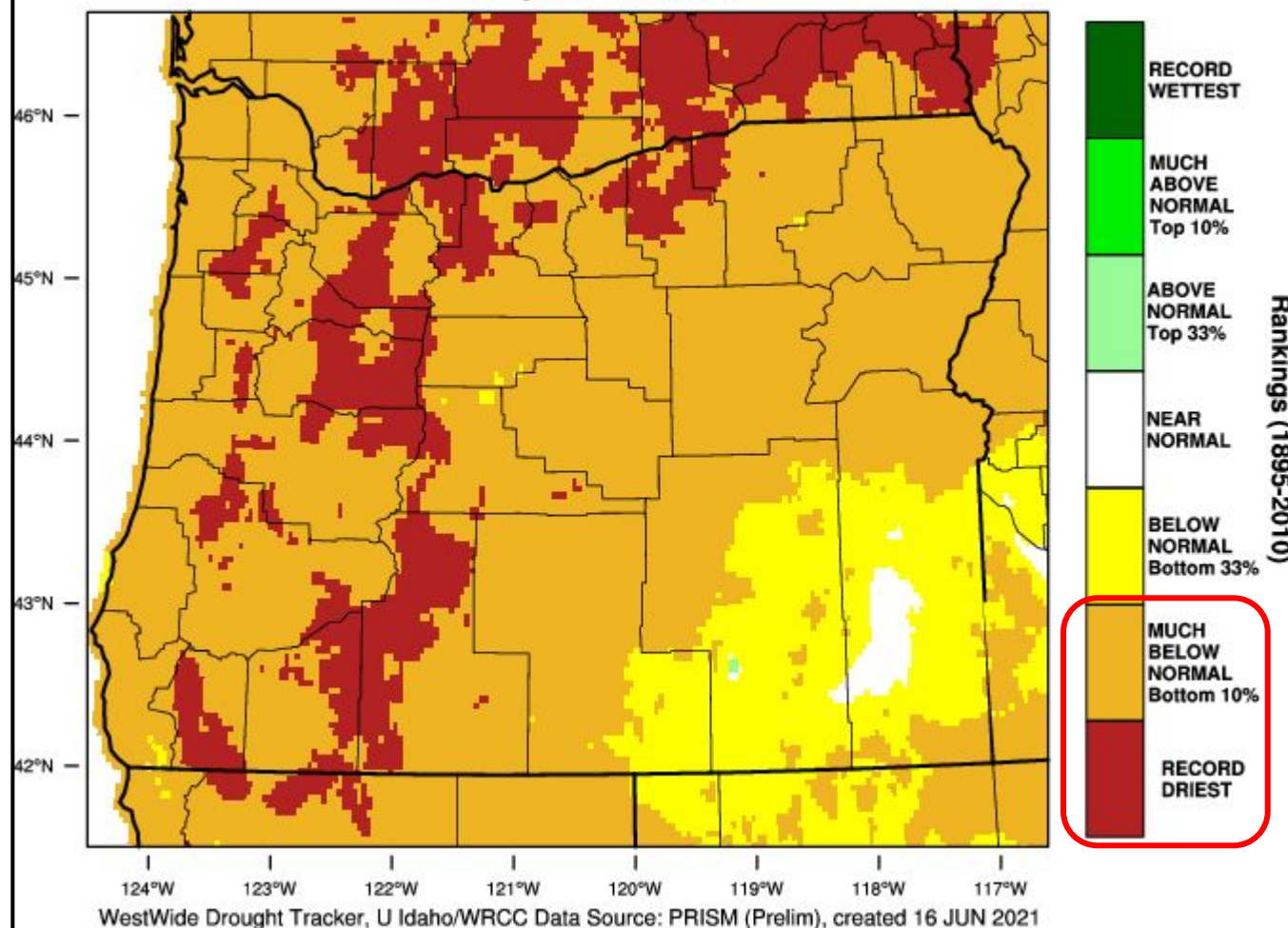




# Record Setting Dry Spring: March to May 2021

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Oregon - Precipitation  
March-May 2021 Percentile

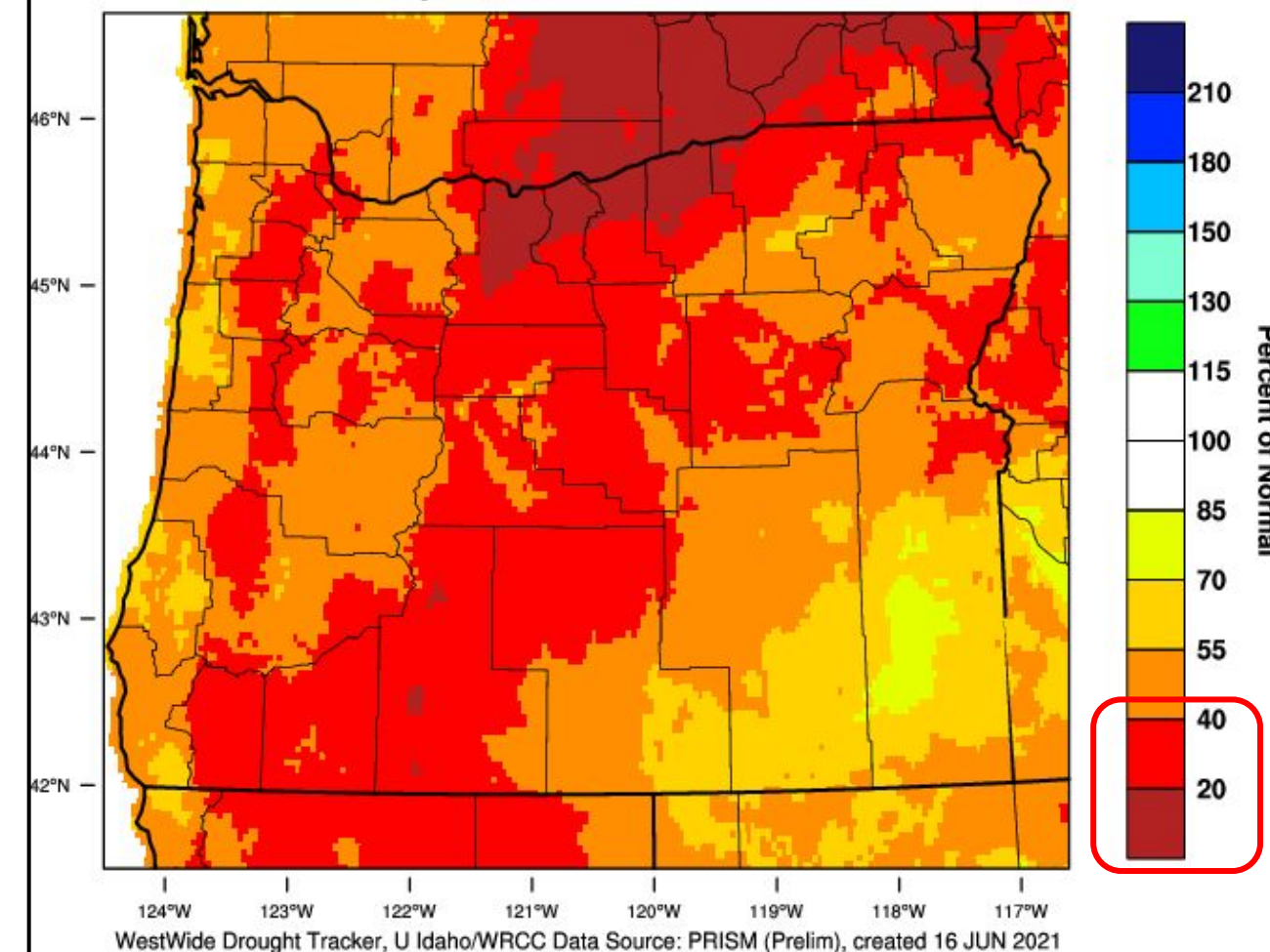


**Many areas across Oregon (and Washington) experienced the driest March-May on record.**

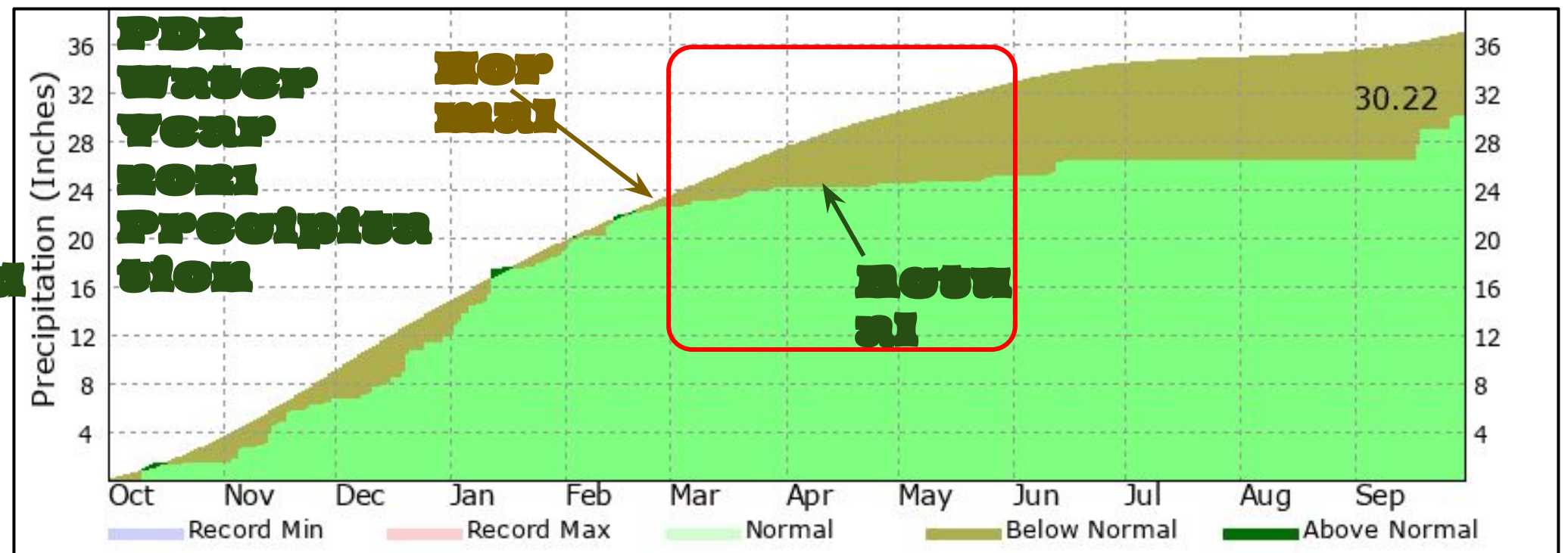
**Many areas received only 15-40% of normal precipitation March-April-May 2021.**

Oregon - Precipitation

March-May 2021 Percent of 1981-2010 Normal



**Comparison of normal versus actual accumulated precipitation in Portland for the water-year Oct. 2020 through Sep. 2021.**

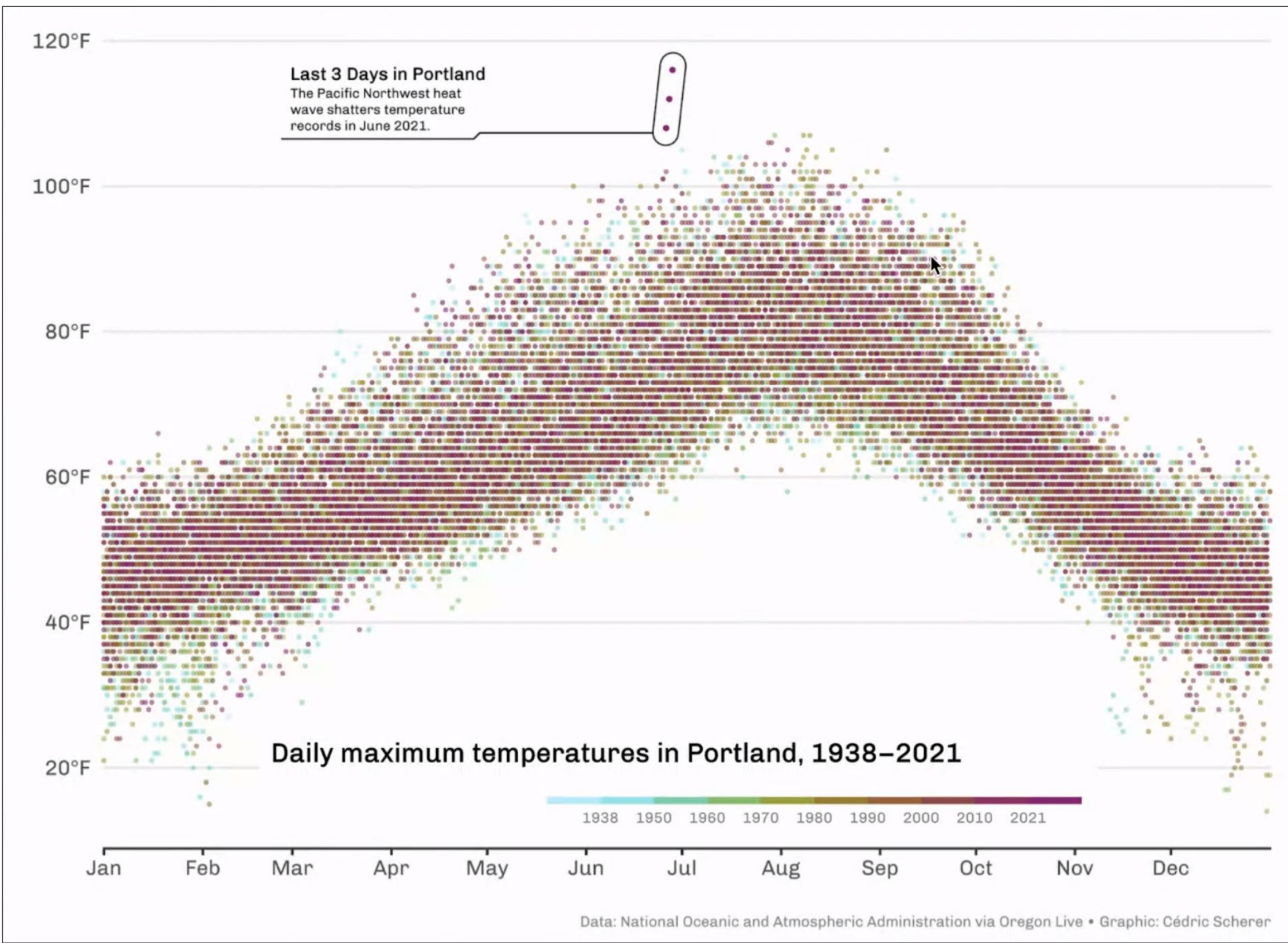




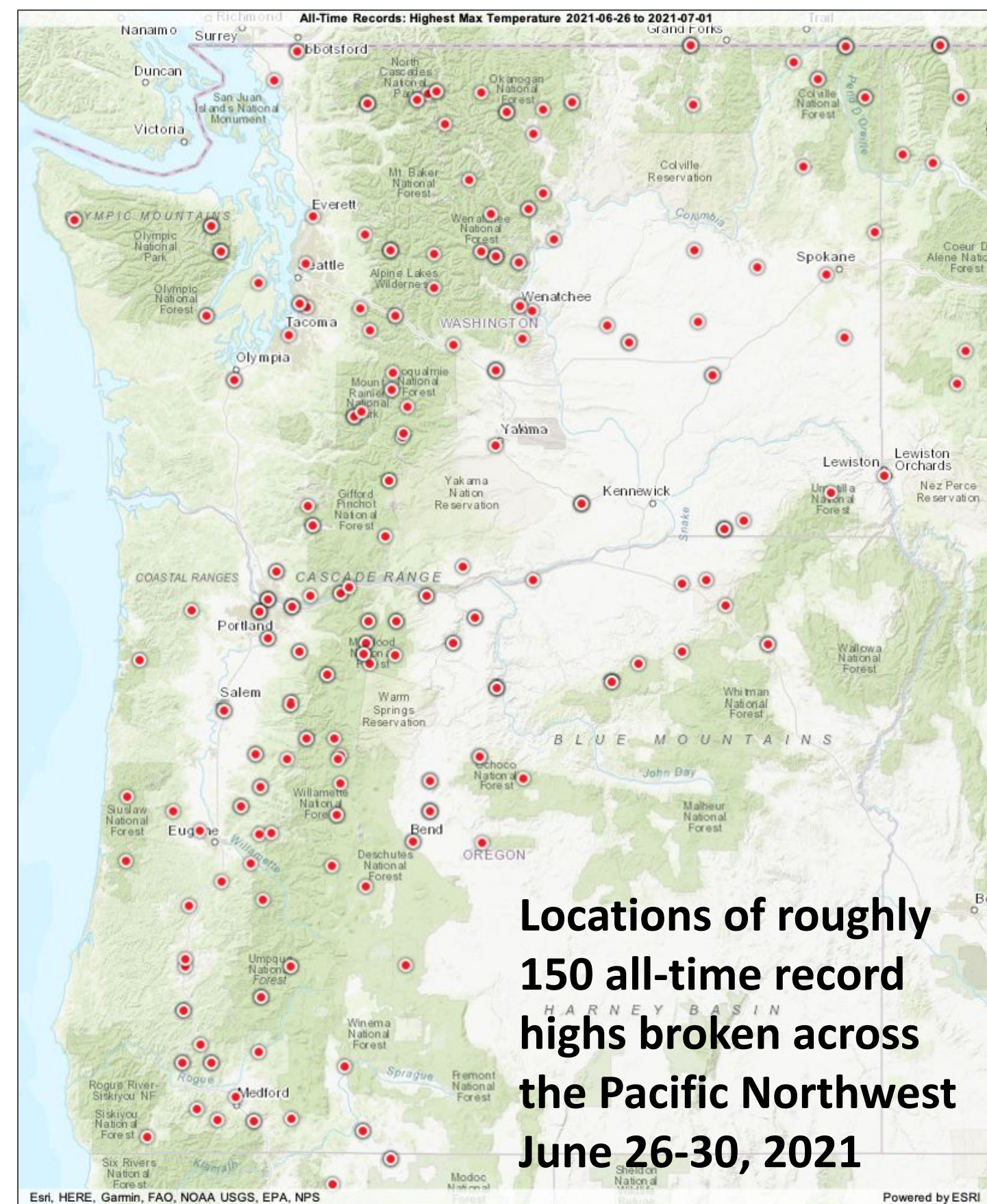


# Historic PacNW Heat Wave: June 26-29, 2021

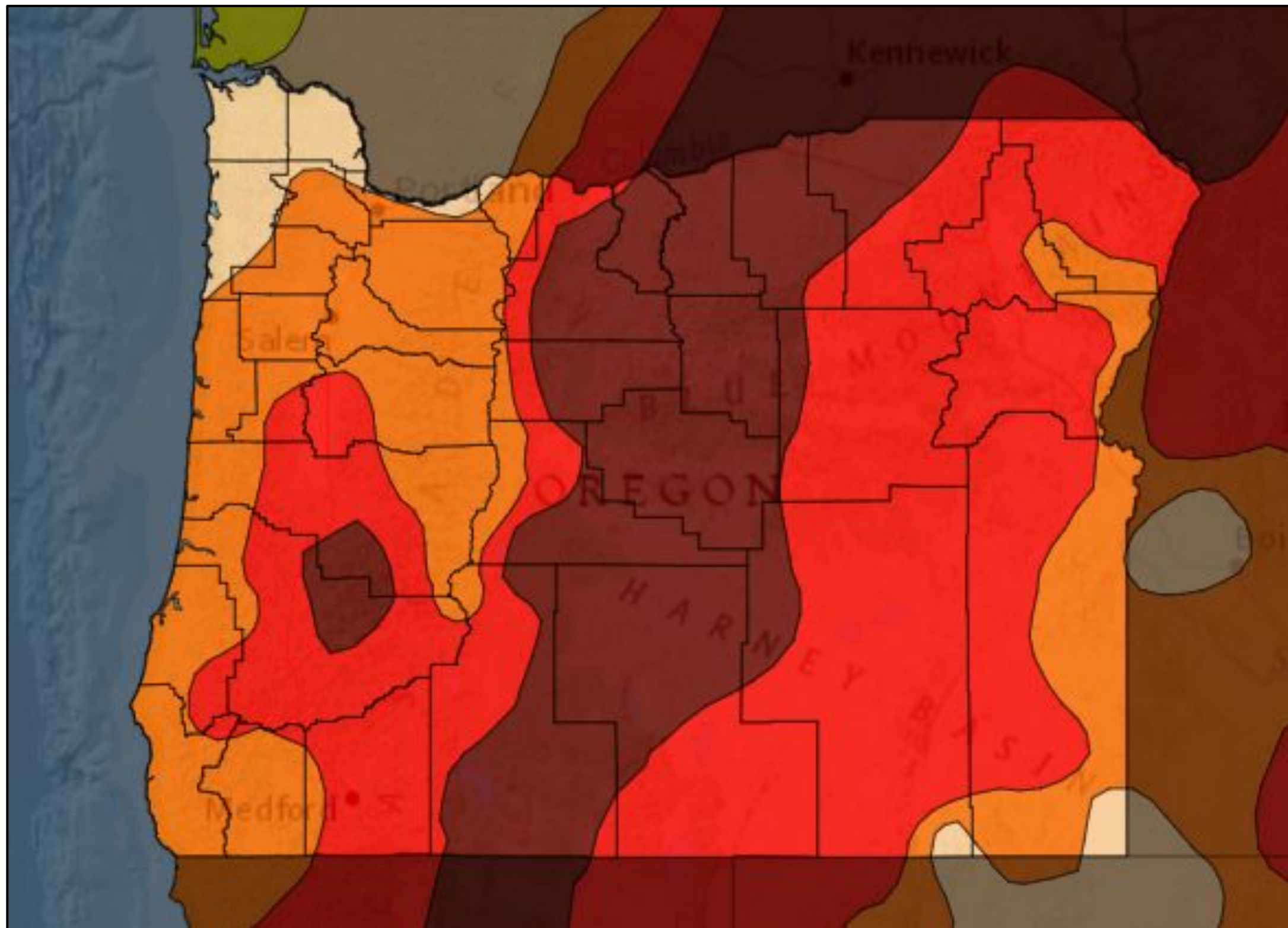
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Graph showing all high temperatures in Portland, OR 1938-2021. The extreme outliers of June 26-27-28, 2021 are noted at top.







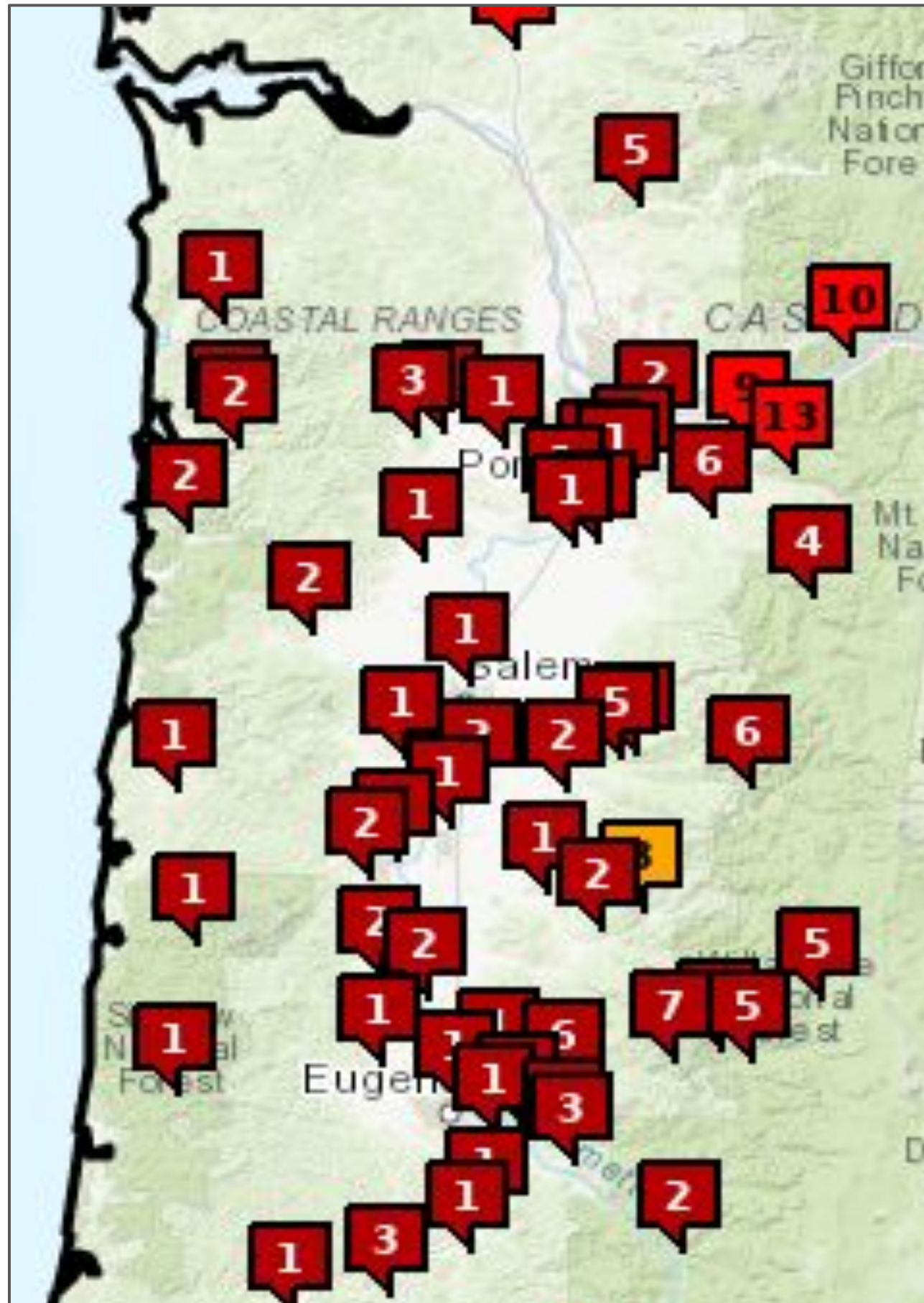
	<b>D0 - Abnormally Dry</b> <ul style="list-style-type: none"> <li>Ski season is impacted</li> </ul>	<b>100.0%</b> of OR
	<b>D1 - Moderate Drought</b> <ul style="list-style-type: none"> <li>Some fields are left fallow</li> <li>Water levels begin to decline; recreation and other uses are impacted</li> </ul>	<b>100.0%</b> of OR
	<b>D2 - Severe Drought</b> <ul style="list-style-type: none"> <li>Pastures are brown; hay yields are down, and prices are up; producers are selling cattle</li> <li>Fire risk increases</li> <li>Marshes are drying up, little water is available for waterfowl and wildlife; bears are moving into urban areas</li> </ul>	<b>96.5%</b> of OR
	<b>D3 - Extreme Drought</b> <ul style="list-style-type: none"> <li>Planting is delayed</li> <li>Wildfire activity is high</li> <li>Reservoirs and lakes are very low compared to normal; irrigation water is scarce</li> </ul>	<b>72.1%</b> of OR
	<b>D4 - Exceptional Drought</b> <ul style="list-style-type: none"> <li>Power generation is reduced</li> </ul>	<b>26.6%</b> of OR





# Accumulated Runoff: April through September 2021

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TUALATIN - AT FARMINGTON (FRMO3) Period Rankings - 1948 to 2022 APR-SEP Normal -- 176 (KAF)				
Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
1	2010	314.42	178	1.333 %
46	2022	139.48	79	61.333 %
71	2015	77.20	44	94.667 %
72	1977	70.19	40	96.000 %
73	1965	66.25	38	97.333 %
74	2021	53.13	30	98.667 %



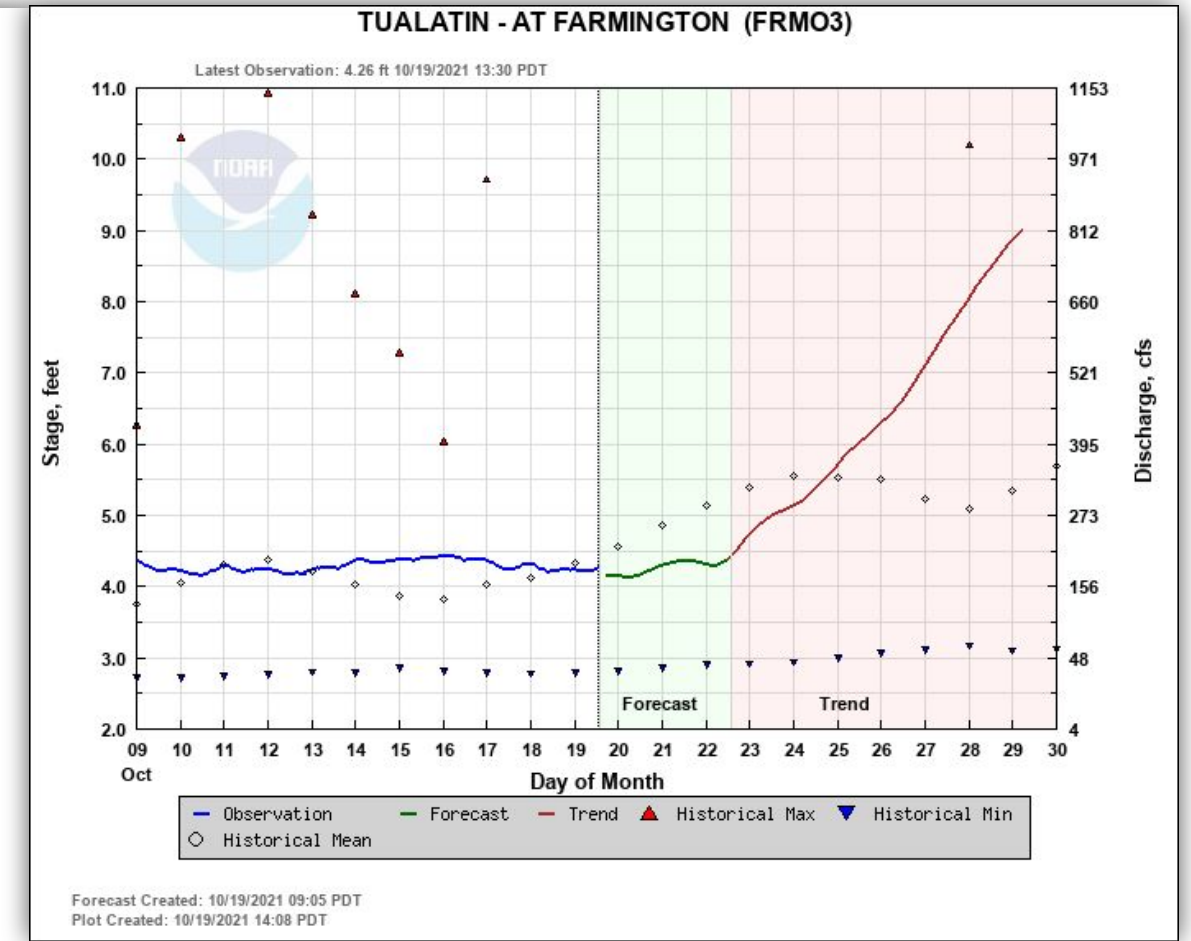
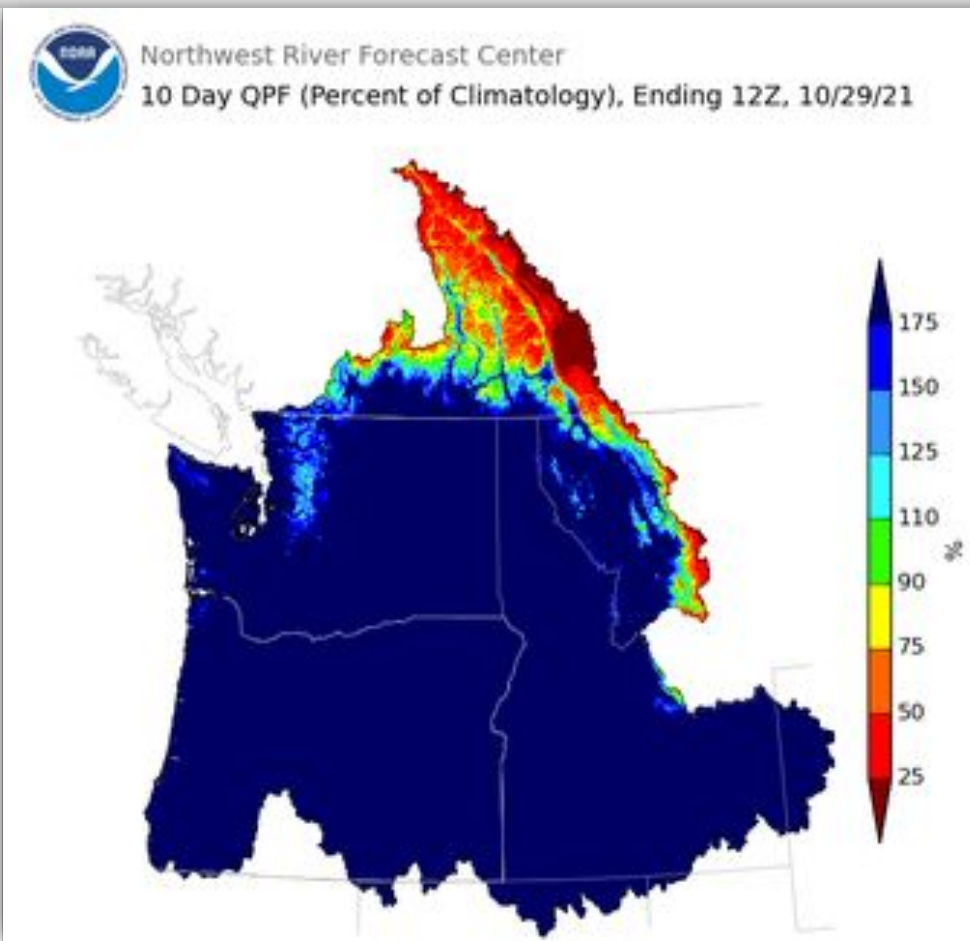
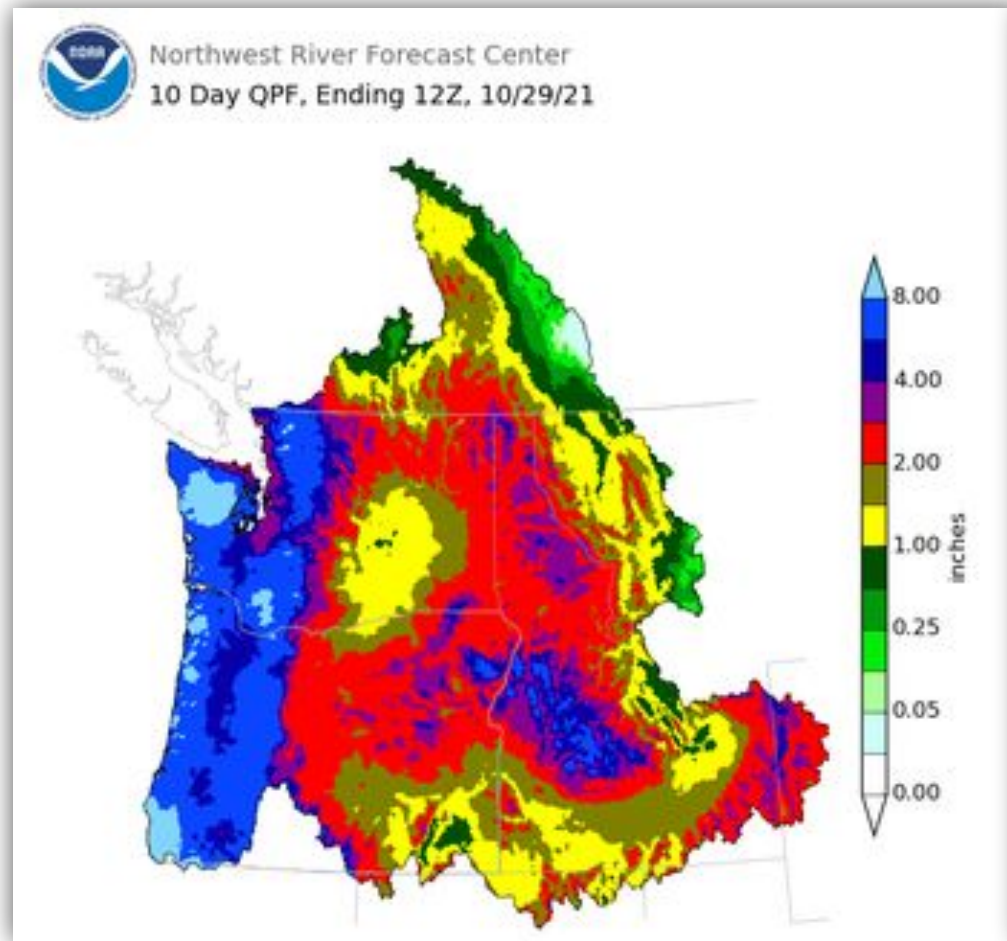


# Winter Seasonal Outlook

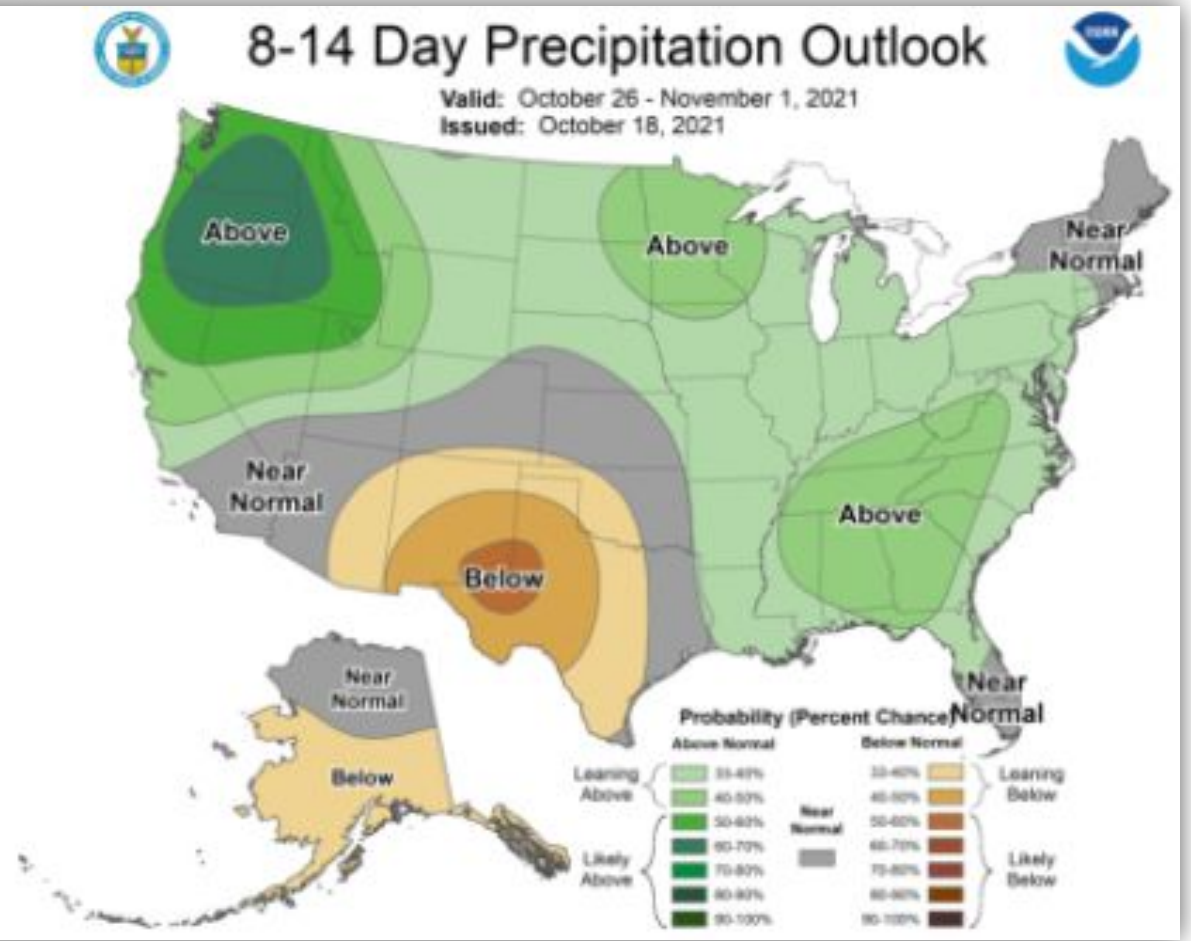
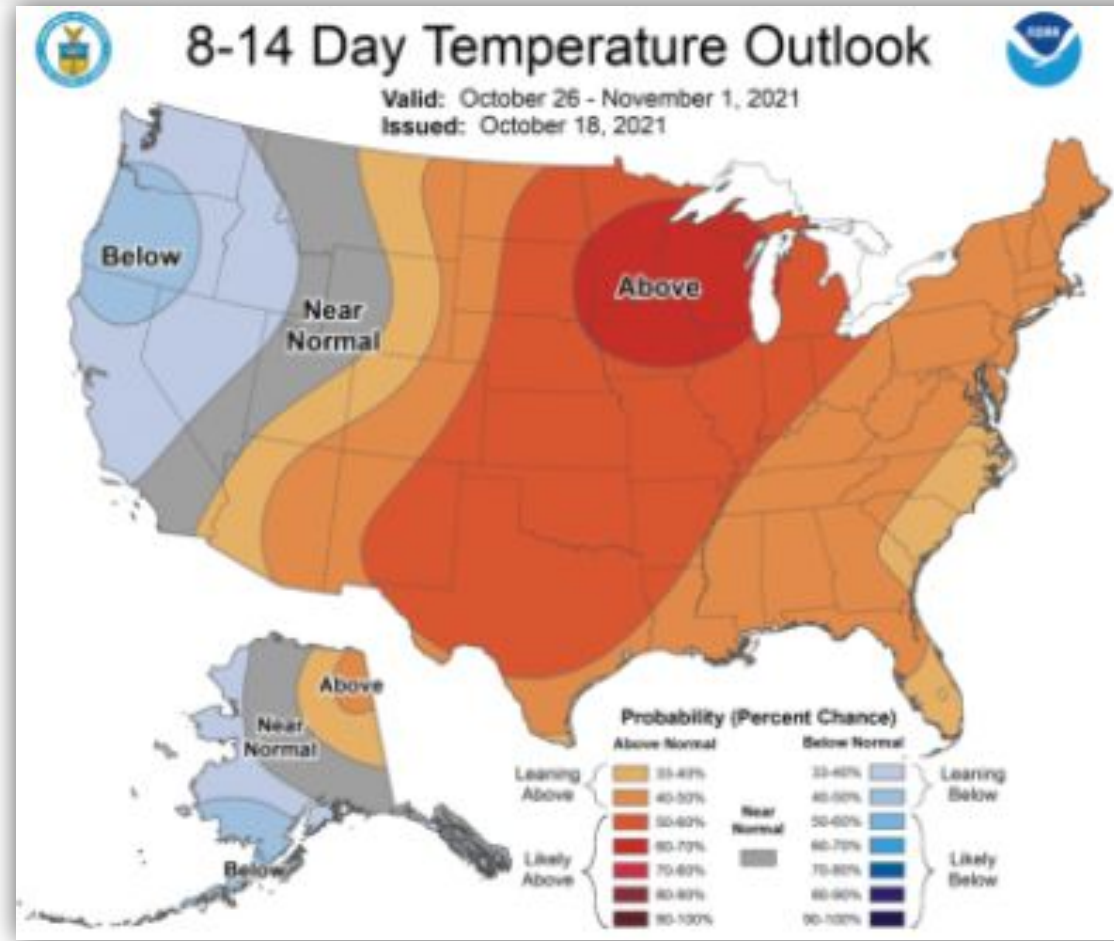
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# Winter Season Outlook 2021/2022





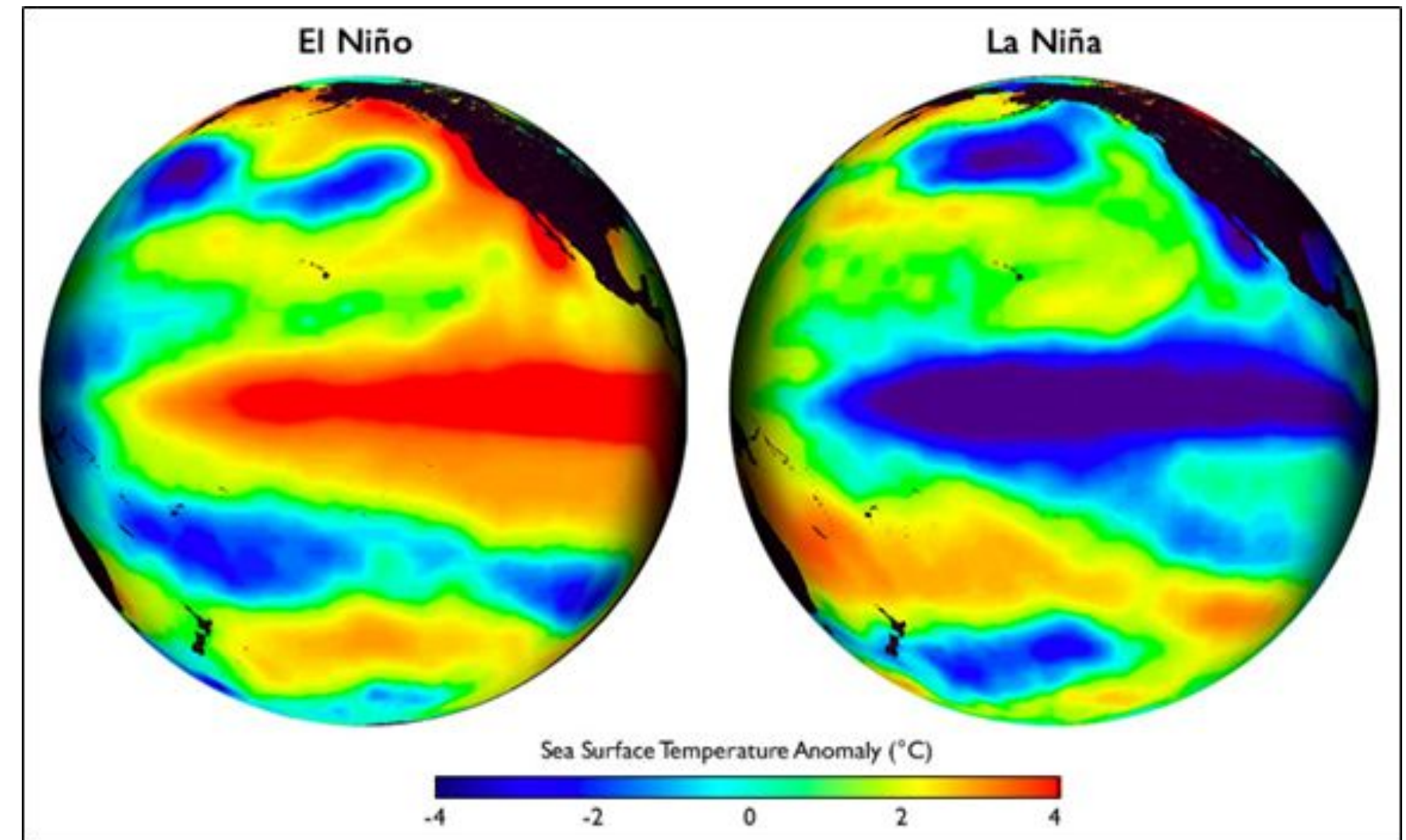
Next 2 weeks look WET,  
but flooding is unlikely.





# What is ENSO?

El Niño and the Southern Oscillation, commonly referred to as ENSO, is a periodic fluctuation in sea surface temperature (SST) and the overlying atmosphere across the equatorial Pacific Ocean.



## ENSO has three possible stages:

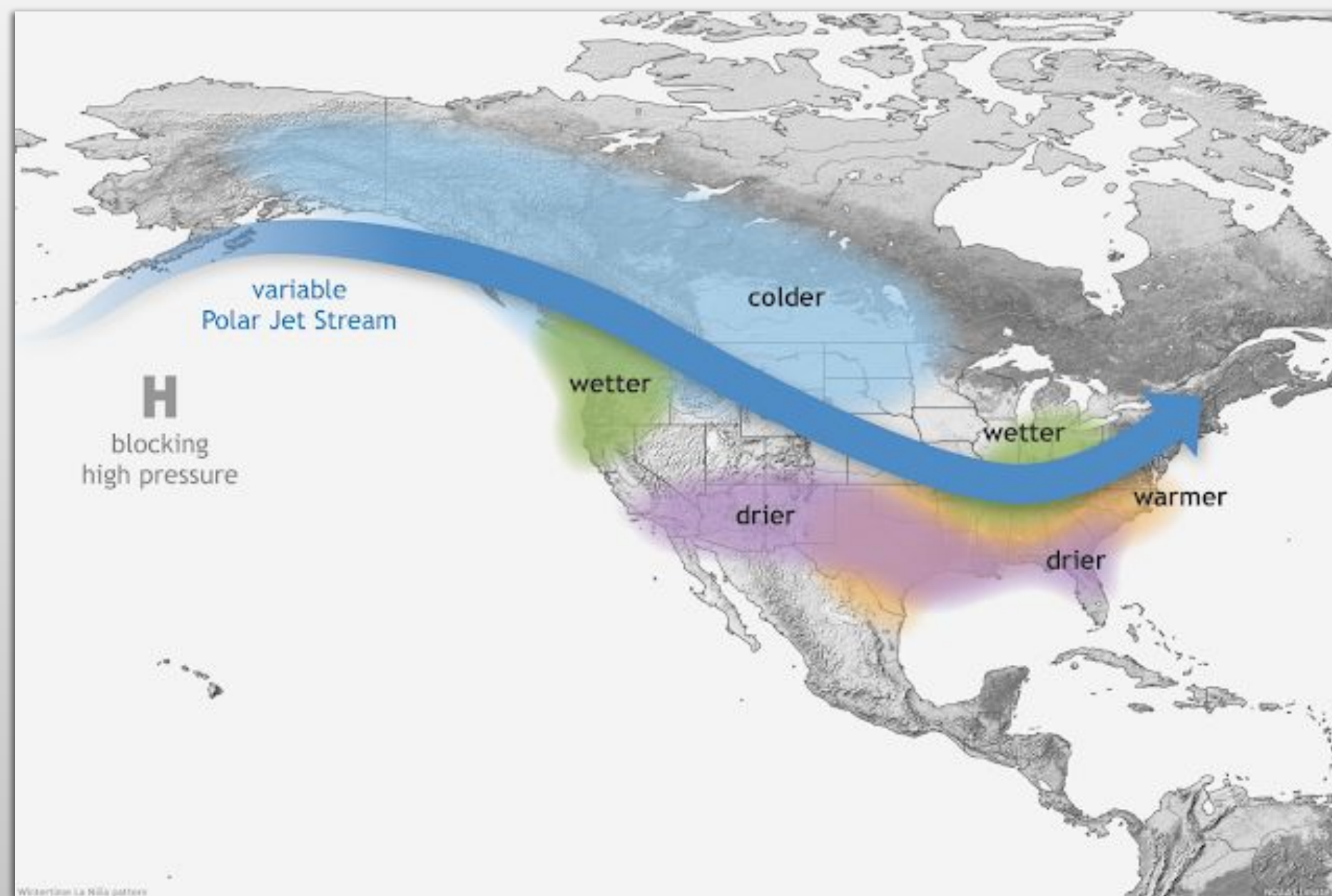
- ENSO-neutral (near-normal water temps across the equatorial Pacific)
- **La Niña** (relatively **cool water** across the equatorial Pacific - **above right**)
- **El Niño** (relatively **warm water** across the equatorial Pacific - **above left**)



# La Niña Status

ENSO Alert  
System  
Status:

**La Niña  
Advisory**



La Niña conditions have developed and are expected to continue with a **85-90% chance of La Niña during the Northern Hemisphere winter 2021-22.**



NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION



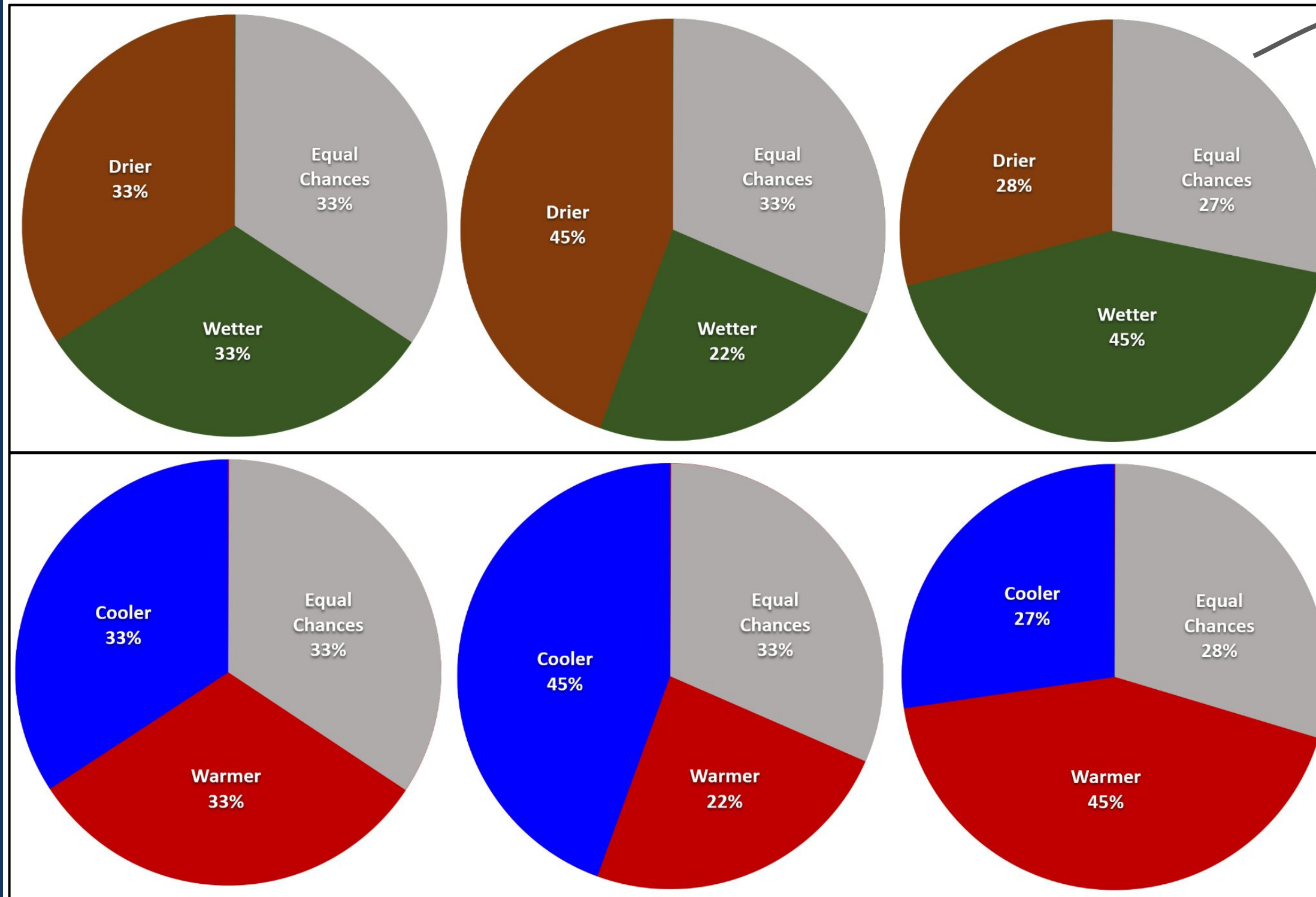


Precipitation

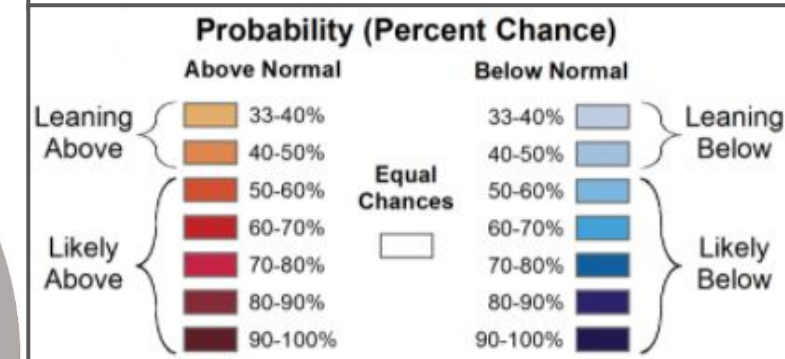
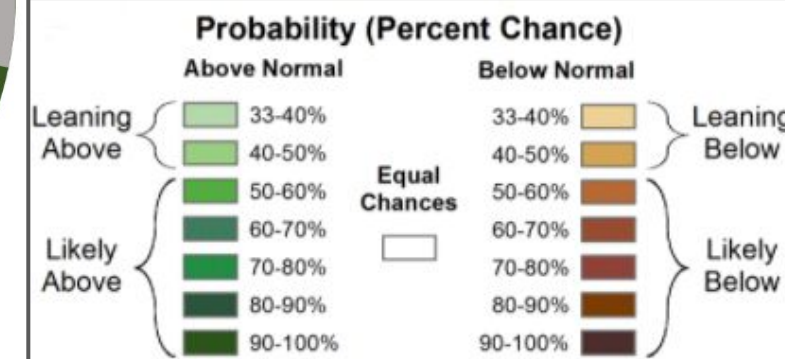
## How to Interpret Seasonal Outlook Probabilities



Temperatures



The higher the probabilities get to "favor" a certain tendency - the more it changes the wedges on the pie charts



**Also: It's important to remember that these outlooks are an *accumulated average* of the 3 month outlook period.**





# CPC October-December 2021: 3 Month Outlook

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Wednesday, October 20

## Oct-Dec Outlook Favors



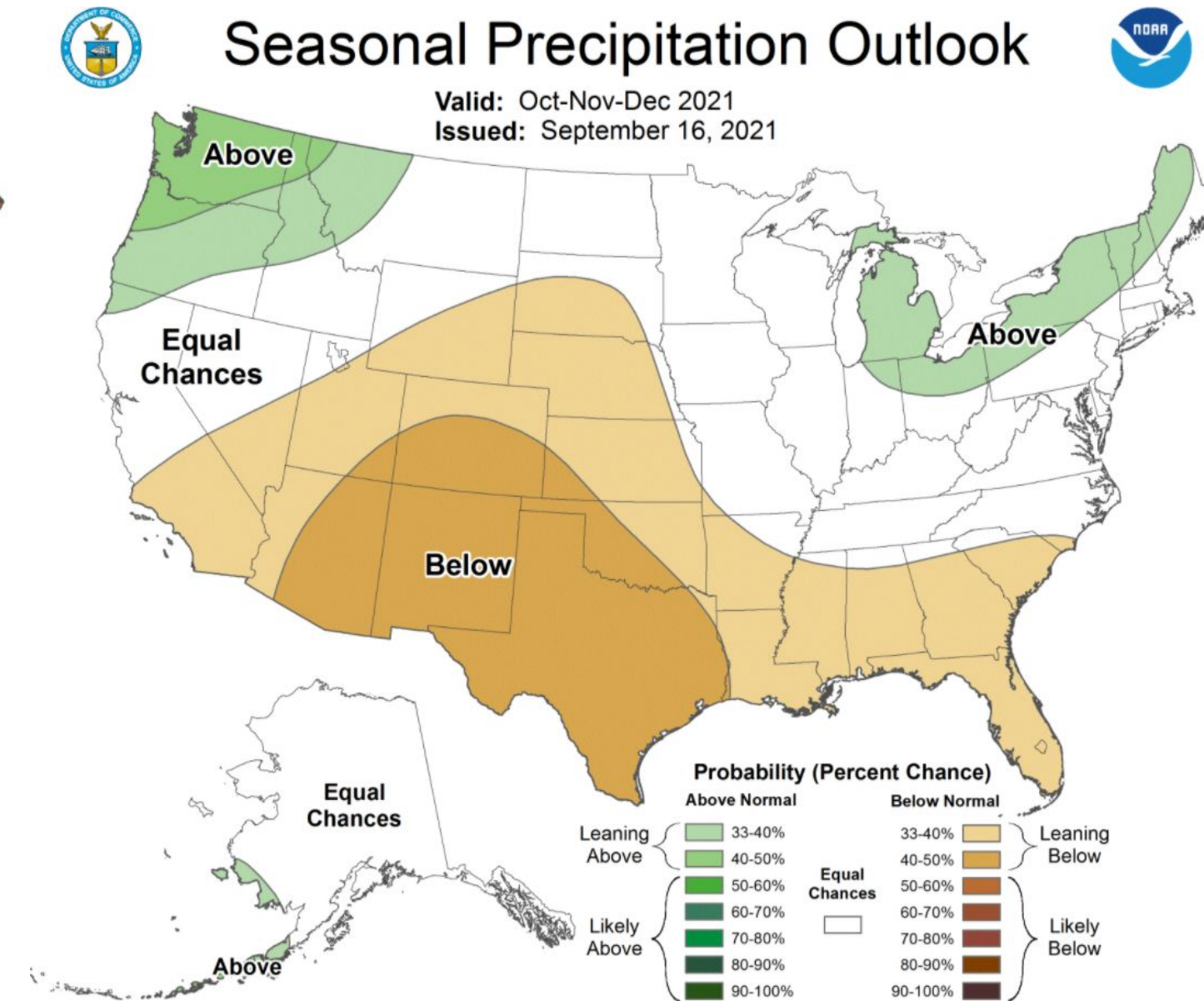
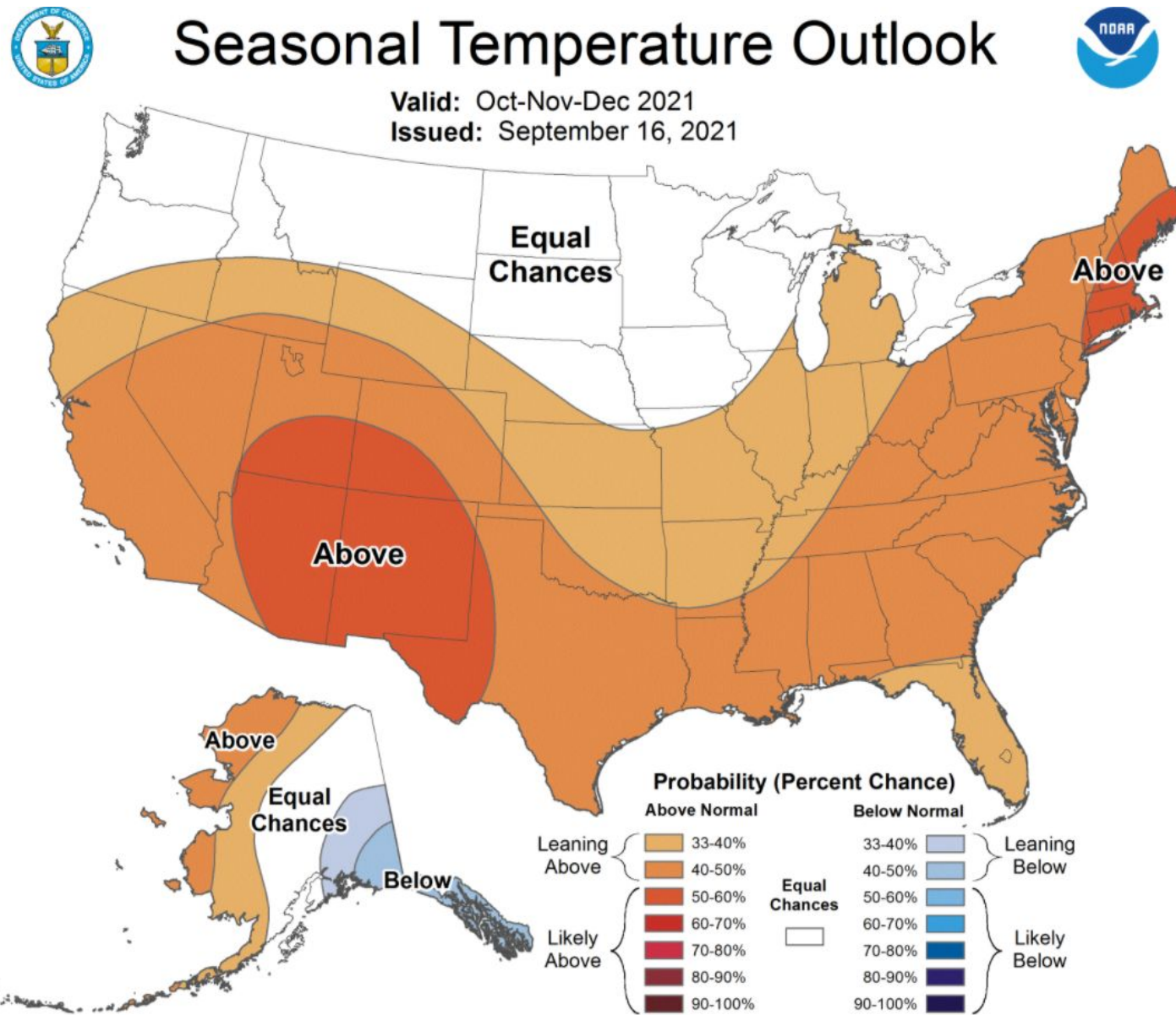
Precipitation

Greater chances for Wetter than Normal



Temperatures

Near Equal Chances of above, below, or near average





## Jan-Mar Outlook Favors



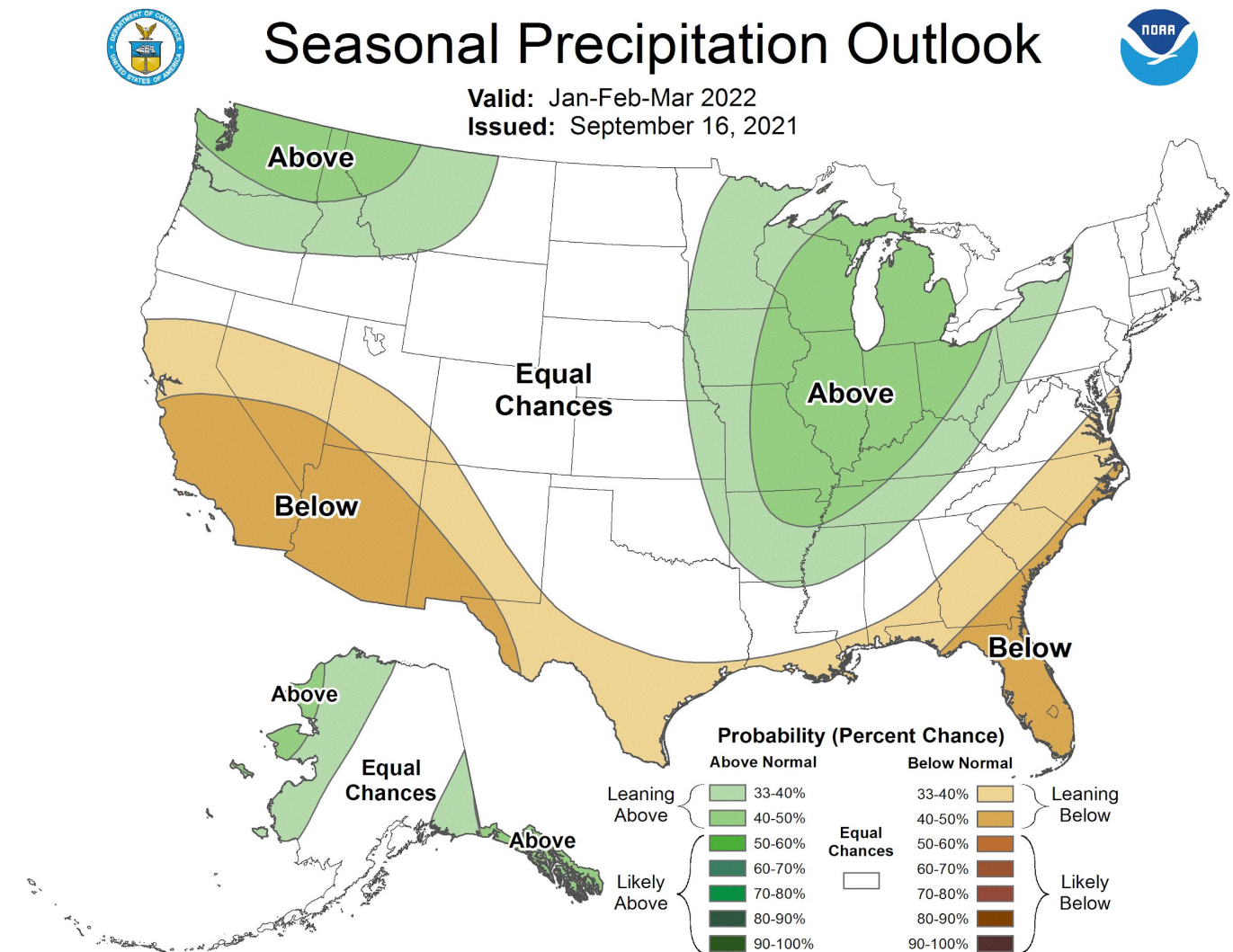
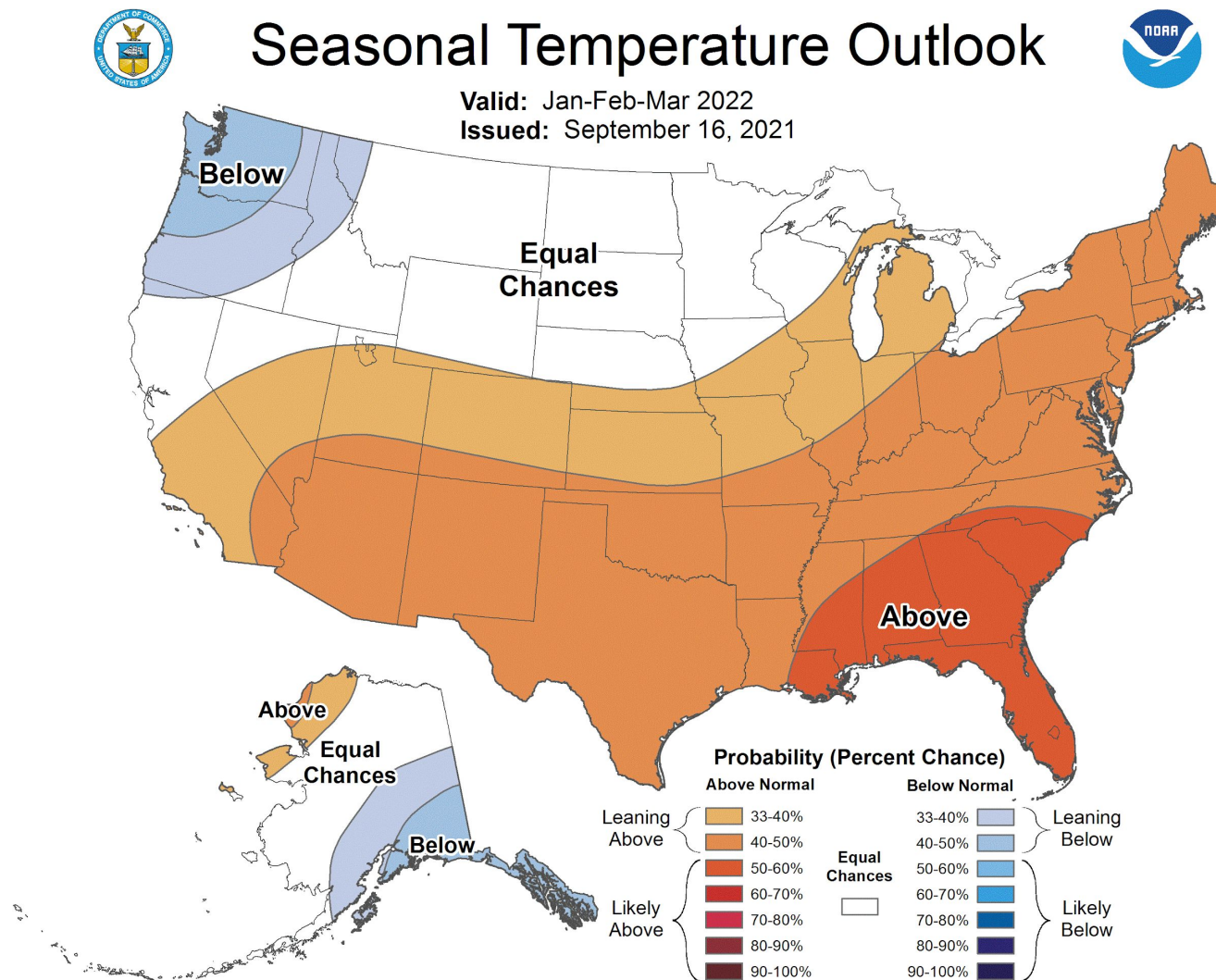
Precipitation

**Greater chances for Wetter than Normal**



Temperatures

**Greater Chances for Cooler than Normal**



Climate predictions can have skill in predicting seasonal totals and averages. **However, most impacts are associated with short-duration storm systems.**





# Updates to NWS Products & Services





# Updated Mission Statement

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

## National Weather Service Mission Statement

Provide weather, water and climate data, forecasts, warnings, and **impact-based decision support services** for the protection of life and property and enhancement of the national economy.

- Updated Oct. 14, 2021
- IDSS is now as much a part of NWS mission as forecasts and warnings
- Highlights the importance of NWS to serve the local needs of diverse communities with the information needed to prepare for and respond to impacts caused by extreme weather events.





# New Email Briefing Format

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

New look coming to our Partner Email Briefings this Fall.

Better color table more aligned with color-blind sensitive groups.

Hazards and impacts grouped by hazard or in a timeline.

## New format

Next update: 17 Dec 2020

**KEY POINTS**

- Another system will move through the area this morning, with moderate mountain snow, lowland rain, and locally gusty winds expected, mainly along the coast and San Juan Islands, Admiralty Inlet, and western Whatcom/Skagit Counties.
- Several additional systems will impact the area this week, with each round arriving late Wednesday through Thursday, Friday, and late Saturday through Sunday
- The strongest system of this week is expected to be Saturday-Sunday with locally heavy rain, stronger winds, and rising rivers on many area rivers. Flood potential will need to be monitored.
- An increased threat for landslides may develop this weekend.

**WEATHER RISK OUTLOOK**

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence.

Wed 9/1	Thu 9/2	Fri 9/3	Sat 9/4	Sun 9/5	Mon 9/6	Tue 9/7
Mountain Snow High Surf early Locally Windy	Mountain Snow early Locally Windy	Mountain Snow, Lowland Rain Locally Windy	Heavy Rain Locally Windy Rising Rivers	Heavy Rain Locally Windy Rising Rivers	Rising Rivers	

Risk Levels: Little to None, Minor, Moderate, Major, Extreme

**DETAILS**

**Cascades and Mountain Passes**

**Snow** Impacts: Hazardous travel possible in the passes due to moderate snow, especially Thursday morning.

**Coast and Lowland Locations**

**River Flooding** Impacts: Rivers are expected to rise through this week, with increasing potential for possible river flooding the weekend.

**Wind** Impacts: Localized power outages are possible late Wednesday into Thursday due to locally windy conditions. Localized power outages are again possible at times Friday and Saturday due to locally windy conditions.

EXAMPLE

EXAMPLE

## Old version

**Thunderstorm Threat Through Saturday**

National Weather Service - Pendleton  
Issued: 9:43 AM PDT Friday, August 9th, 2019  
Next Update: As Needed/Requested  
Point of Contact: NWS Operations (24/7) - 541-276-4493

**KEY POINTS**

- Slight chance of severe thunderstorms for central/northeast Oregon Friday afternoon and evening with a marginal risk over south central and southeast Washington.
- Marginal chance of severe thunderstorms for northeast Oregon/Southeast Washington Saturday afternoon and evening.

**WEATHER & IMPACTS OUTLOOK**

Fri 08/09	Sat 08/10	Sun 08/11	Mon 08/12	Tue 08/13	Wed 08/14	Thu 08/15
Strong to severe storm possible late afternoon and evening	Strong storm possible late afternoon and evening	Lingering showers and a slight chance of thunderstorms mountains.				

Weather Impacts Legend: None, Low, Medium, High, Extreme

**CONFIDENCE AND FORECAST DETAILS**

**Central/Northeast Oregon/south central/southeast Washington**

**HIGH Confidence** Thunderstorms with heavy rain, hail and gusty winds this afternoon and again on Saturday.

**MODERATE Confidence** The potential for an isolated severe storm containing large hail/and or damaging winds this afternoon and evening and with a marginal risk on Saturday. The Storm Prediction Center has highlighted the area for a slight/marginal risk for today and a marginal risk for Saturday. Please see attached graphic.

- Thunderstorms will develop over southern and central Oregon this afternoon and evening and move north overnight.
- Strong to severe storms are possible this afternoon/evening with large hail and winds exceeding 50 mph.
- Saturday looks wet with scattered to numerous showers and isolated thunderstorms. there is a marginal risk of a strong or severe storm in northeast Oregon/southeast Washington yet Saturday afternoon and evening.
- Sunday will have some showers and isolated thunderstorms lingering in the mountains, otherwise dry and breezy.

For the latest forecast updates, visit [www.weather.gov/pdt](http://www.weather.gov/pdt).

If you have questions or would like to submit weather reports, photos, or to unsubscribe from these briefings, email [pdt.operations@noaa.gov](mailto:pdt.operations@noaa.gov)





# New Email Briefing Format - Weather Risk Outlook

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

## New format

### Weather Risk Outlook

Risk is determined by the weather related impact level AND the likelihood an event will occur

Provide an overview of upcoming weather concerns, including alerting for potential high-impact, low probability events


**National Weather Service**  
 National Oceanic and Atmospheric Administration

Weather Forecast Office  
 Seattle, WA  
 Tuesday, Aug 31, 2021

### Active Weather through the Week

Next update: 17 Dec 2020

#### KEY POINTS

- Another system will move through the area this morning, with moderate mountain snow, lowland rain, and local gusty winds expected, mainly along the coast and San Juan Islands, Admiralty Inlet, and western Whatcom/Skagi Counties.
- Several additional systems will impact the area this week, with each round arriving late Wednesday through Thursday, Friday, and late Saturday through Sunday
- The strongest system of this week is expected to be Saturday-Sunday with locally heavy rain, stronger winds, and rises on many area rivers. Flood potential will need to be monitored.
- An increased threat for landslides may develop this weekend.

#### WEATHER RISK OUTLOOK

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence.

	Wed 9/1	Thu 9/2	Fri 9/3	Sat 9/4	Sun 9/5	Mon 9/6	Tue 9/7
	Mountain Snow High Surf early Locally Windy	Mountain Snow early Locally Windy	Mountain Snow, Lowland Rain Locally Windy	Heavy Rain Locally Windy Rising Rivers	Heavy Rain Locally Windy Rising Rivers	Rising Rivers	
<b>Risk Levels</b>	Little to None		Minor	Moderate	Major	Extreme	

#### DETAILS

##### Cascades and Mountain Passes



Snow

##### Impacts:

Hazardous travel possible in the passes due to moderate snow, especially Thursday morning.

##### Coast and Lowland Locations



River Flooding

##### Impacts:

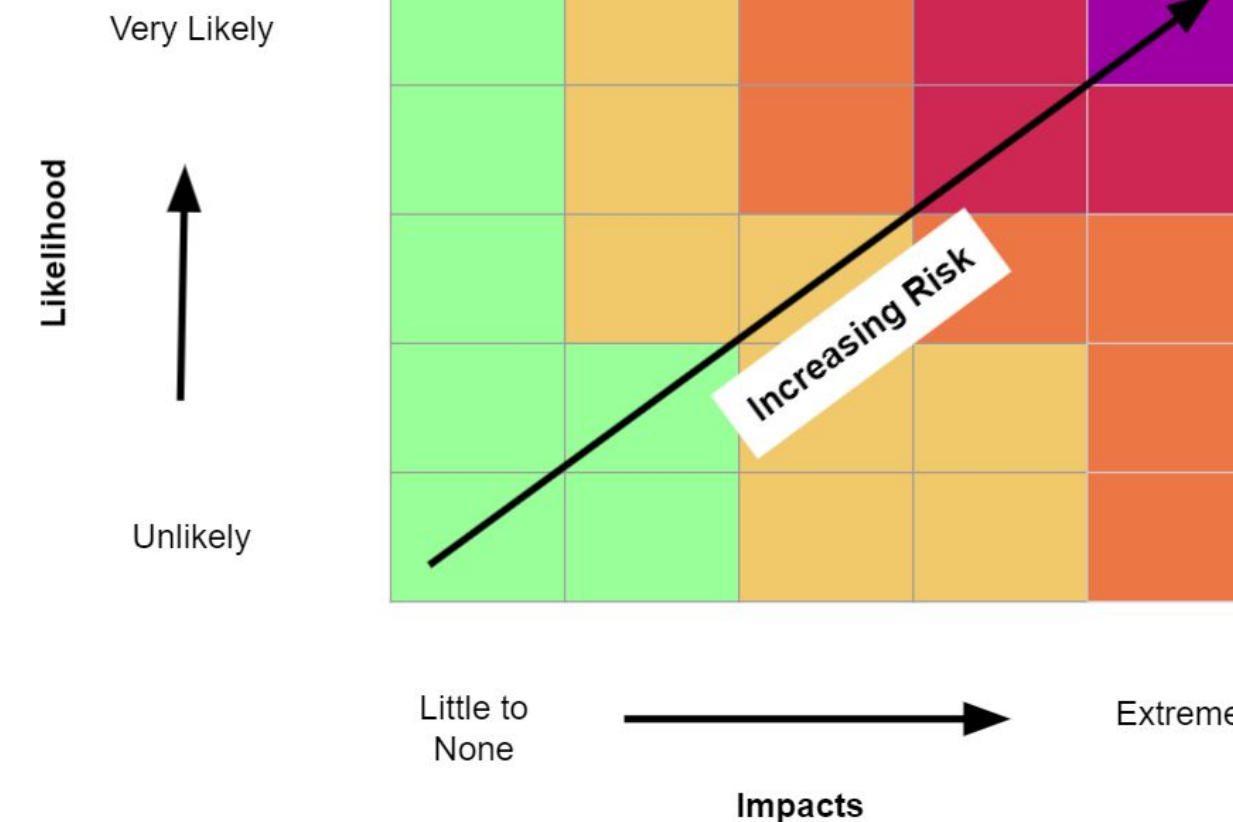
• Rivers are expected to rise through this week, with increasing potential for possible river flooding over the weekend.



Wind

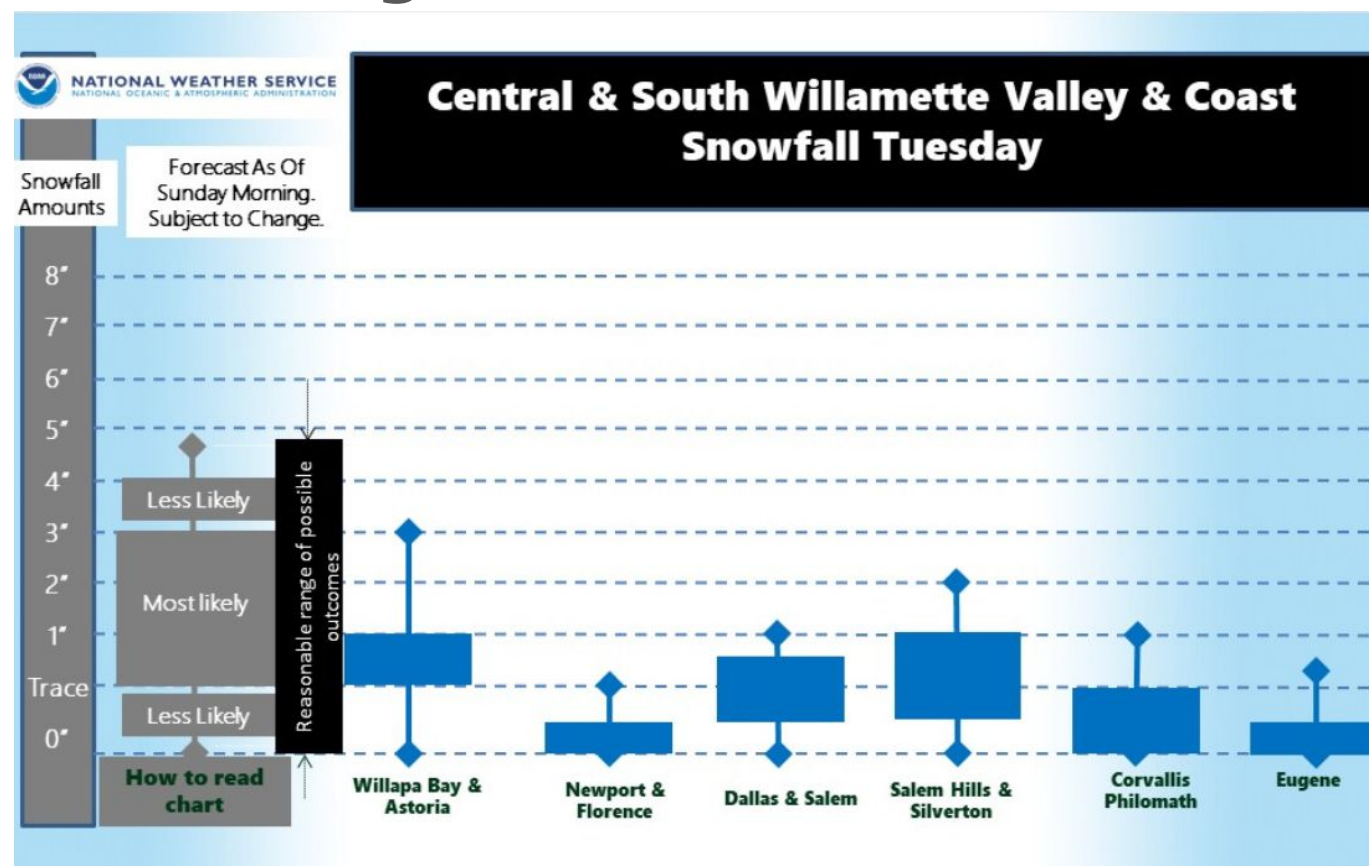
##### Impacts:

• Localized power outages are possible late Wednesday into Thursday due to locally windy conditions.  
• Localized power outages are again possible at times Friday and Saturday due to locally windy conditions

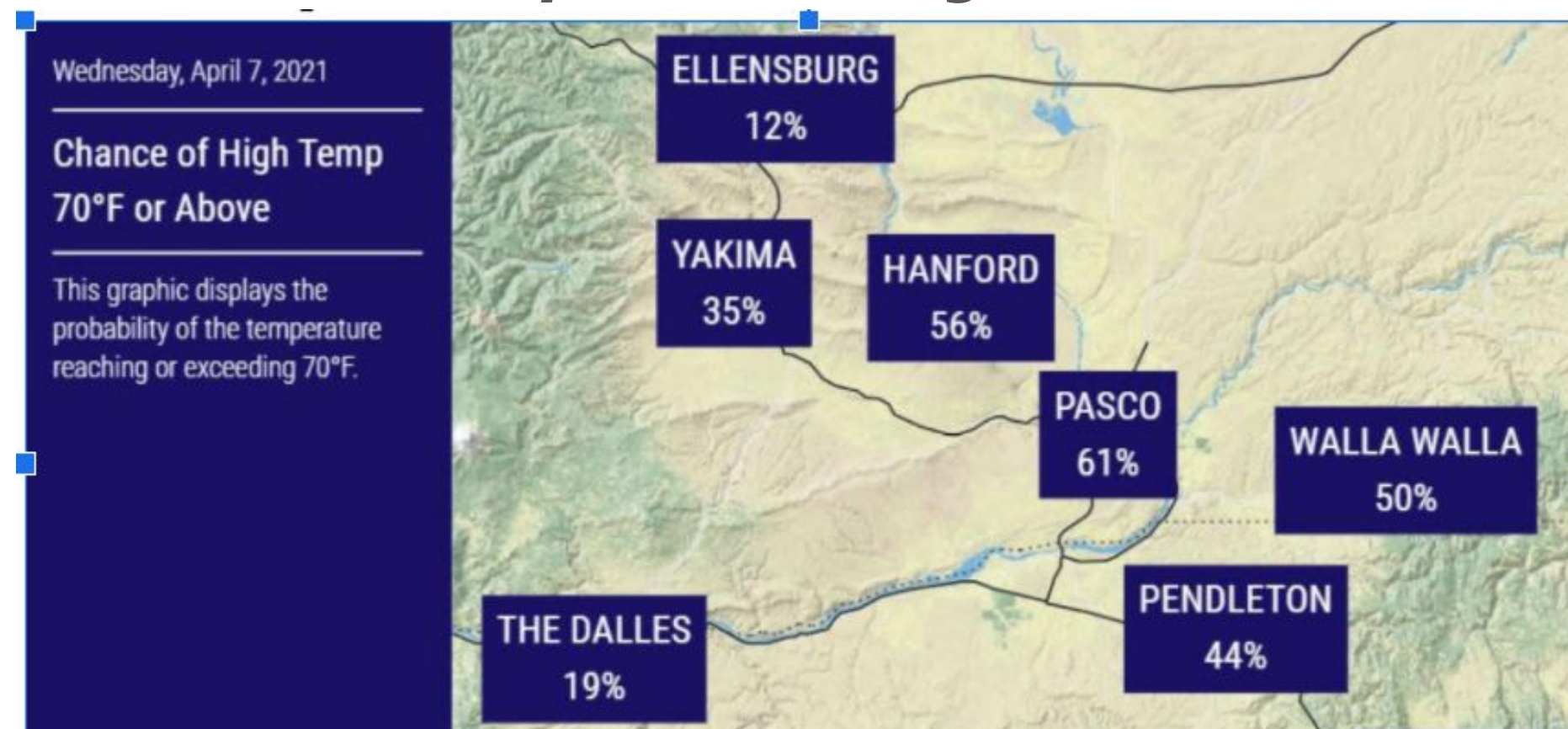




## Range of Potential Values



## Probability of Exceeding a Threshold



**Worst Case, Best Case, & Most Likely outcomes**

Best Case Scenario (10% chance of occurring)



Most Likely Scenario (Official Forecast)



Worst Case Scenario (10% chance of occurring)



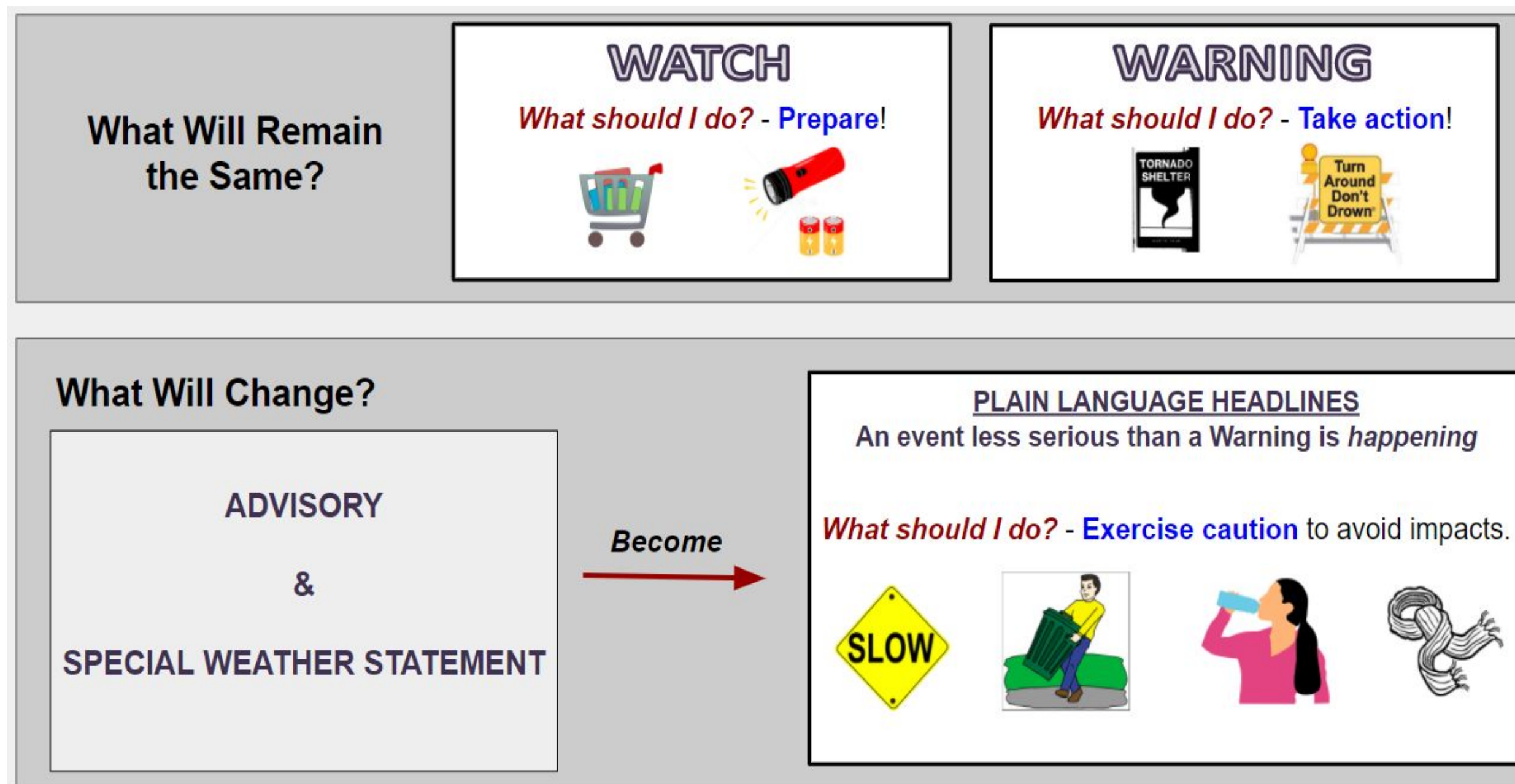


## In-Progress

- Consolidation of products
- Reformatting

## Looking ahead - No earlier than 2024

- Removal of “Advisory” headlines
- Removal of “Special Weather Statements”
- Replaced with plain language headlines



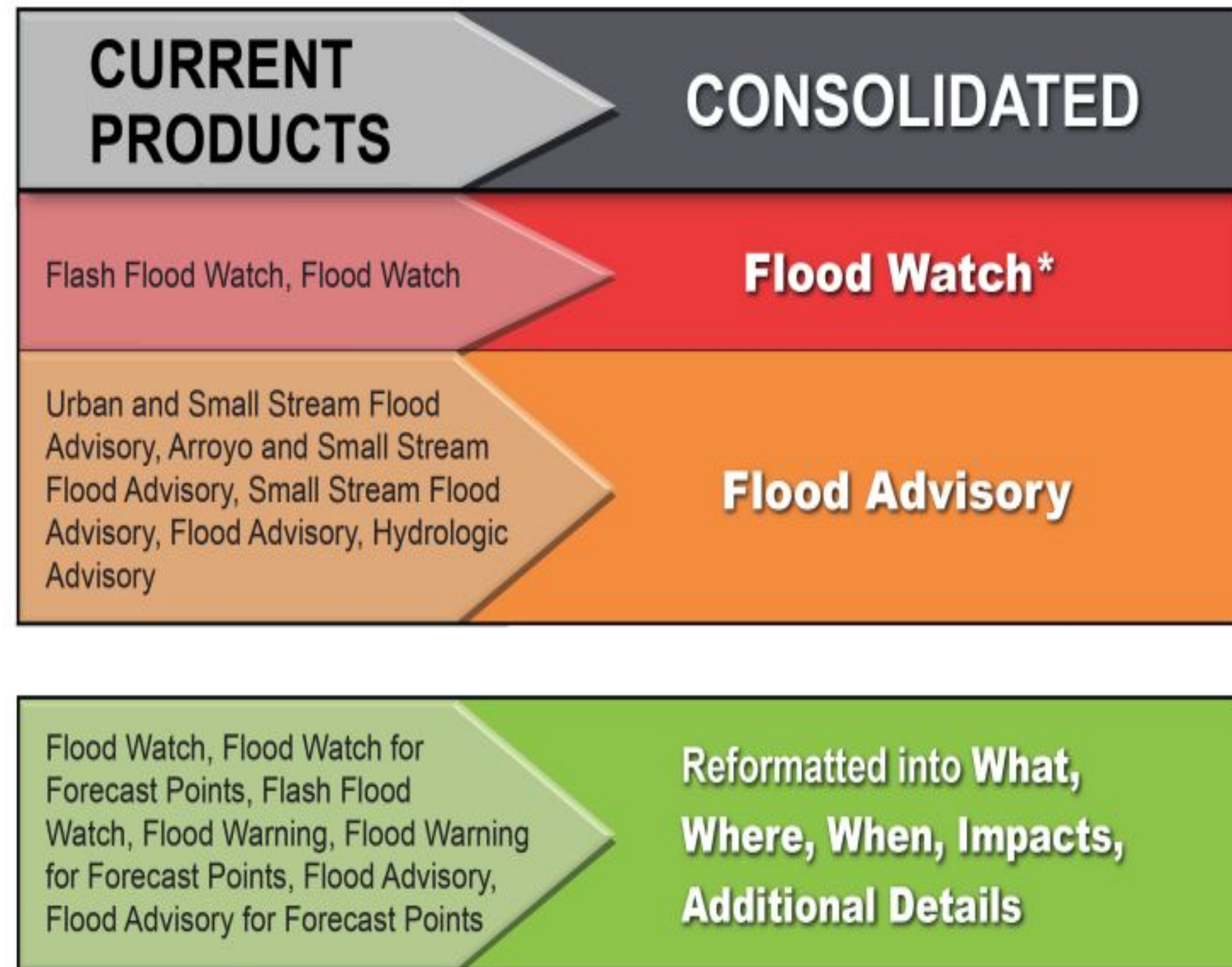




## Flood Products Consolidation

- Streamlining of existing flood watches and advisories into two main types.
- \*Only exception is Flash Flood Watch for possible burn scar or levee/dam break flooding.
- Move to impacts-based format for easier interpretation.
- *Change will likely take place within the next 3 months.*

### What will change?







# Get Involved - Partner Preparedness Initiatives

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

## Working Toward a Weather-Ready Nation



*Only requires a valid email address to sign up.*  
**Visit: [weather.gov/wrn](http://weather.gov/wrn)**



*Tsunami Ready Designation or Tsunami Ready Supporter*  
**[weather.gov/tsunamiready](http://weather.gov/tsunamiready)**



**[weather.gov/stormready](http://weather.gov/stormready)**

*“We can’t stop extreme events from happening. But we surely can come together and find ways to make our societies more dynamically resilient in the face of those threats.”*

NOAA Administrator Dr. Kathryn Sullivan  
American Meteorological Society Annual Meeting  
January 10, 2013





# Oregon NWS Contact Information

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

**nws.portland@noaa.gov**

**503-326-2356** (unlisted 24-hour direct to operations)

**503-326-2340** (administrative line)

**weather.gov/portland & www.nwrfc.noaa.gov**

Facebook: **NWSPortland** Twitter: **@NWSPortland**

Follow-up questions from today: **andy.bryant@noaa.gov**



[nws.portland@noaa.gov](mailto:nws.portland@noaa.gov)



(503) 326-2340



[weather.gov/portland](http://weather.gov/portland)







# Key Points

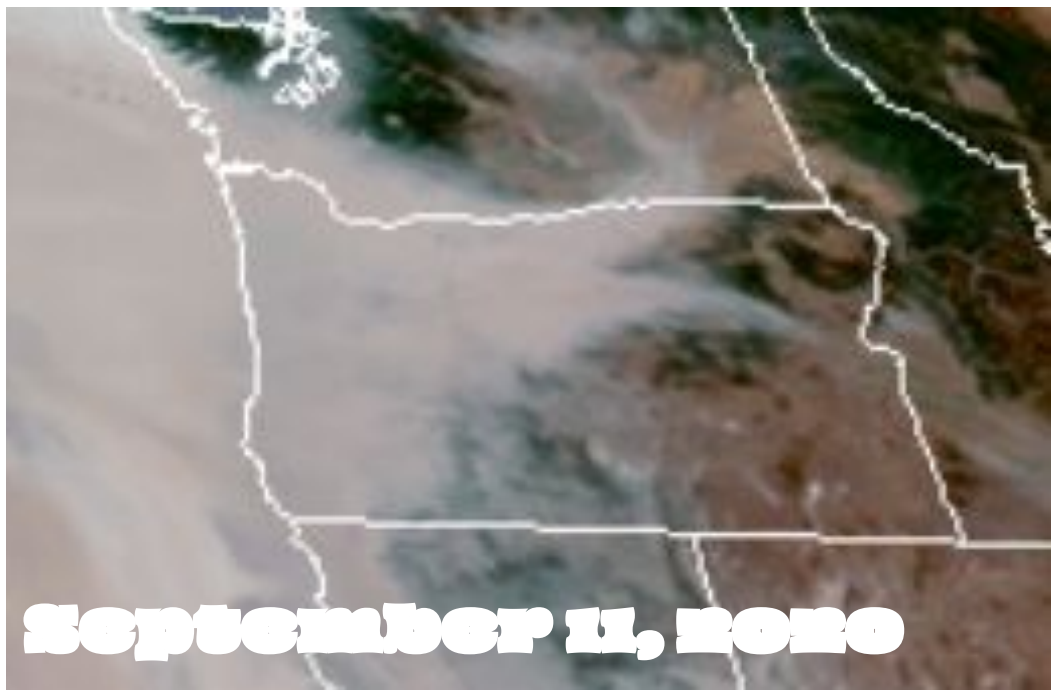
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*We'll wrap up with some NWS updates on services...*

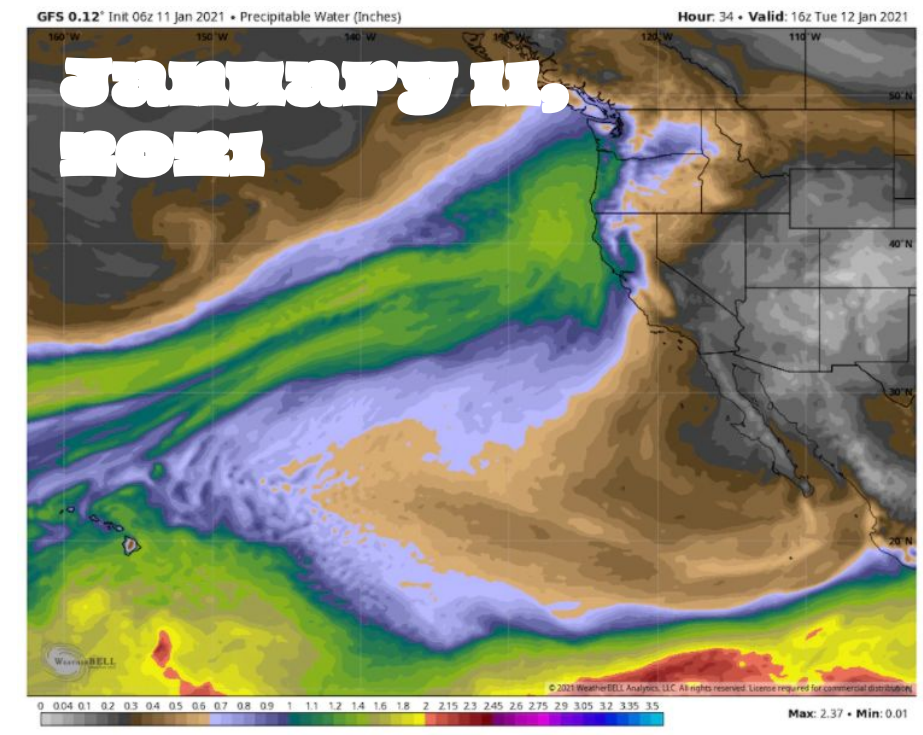




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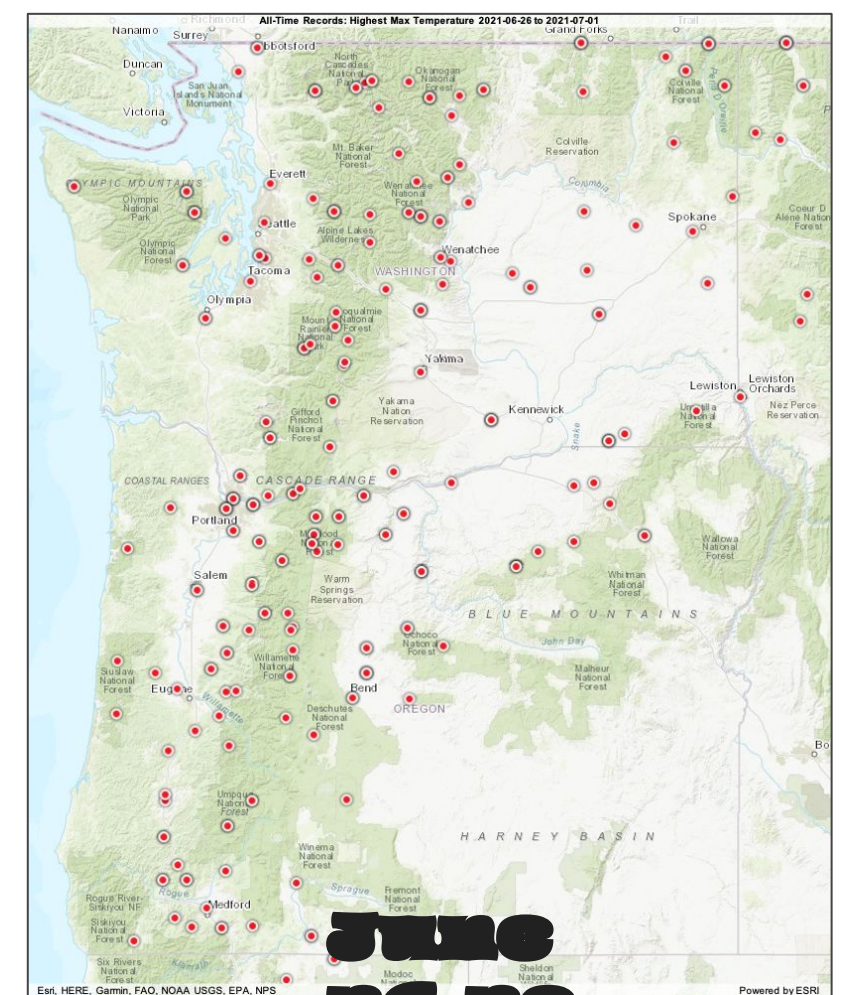
**September 11, 2020**



**February 13, 2021**



**FEBRUARY 14, 2021**



**JUNE 26-29, 2021**

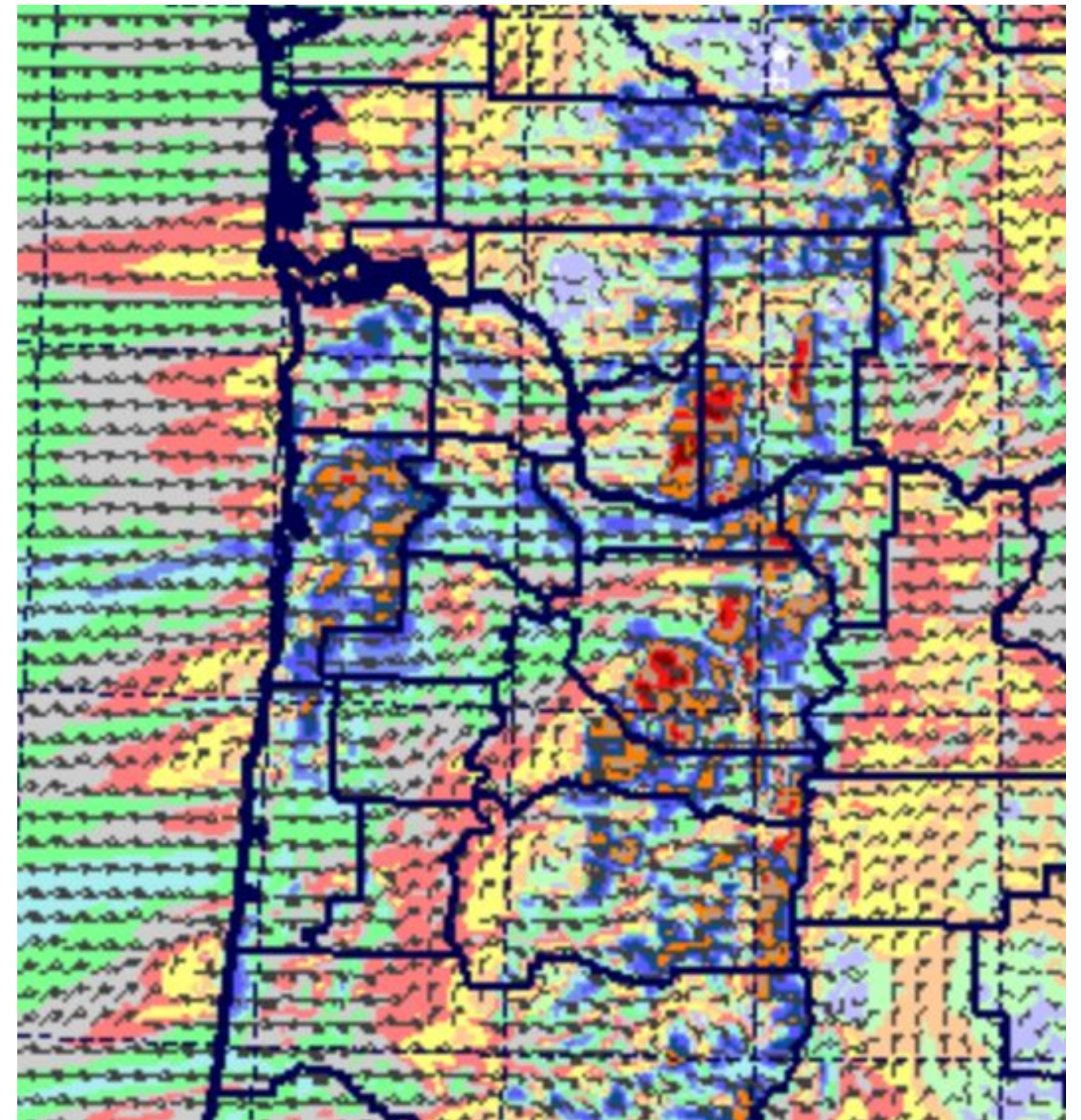
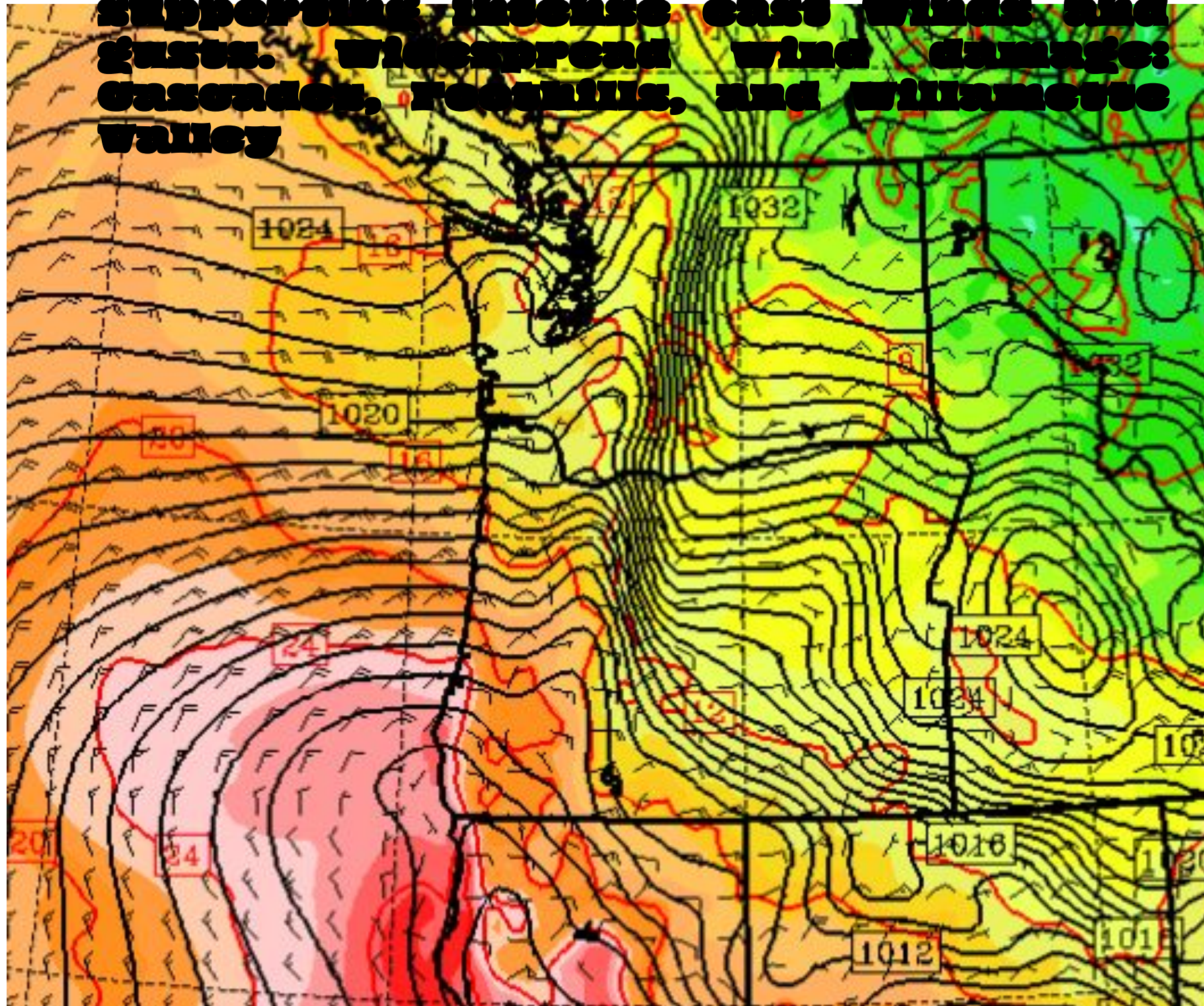




# Labor Day Windstorm: September 7-8, 2020

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

**Surface Pressure (black lines) the morning of September 8, 2020. Note the incredibly strong gradient along the Cascades as strong high pressure moved into the Columbia Basin - supporting intense east winds and gusts. Widespread wind damage: Cascades, Tualumns, and Willamette Valley**



**Corresponding model forecast of wind gusts - areas in red are greater than 70 mph**

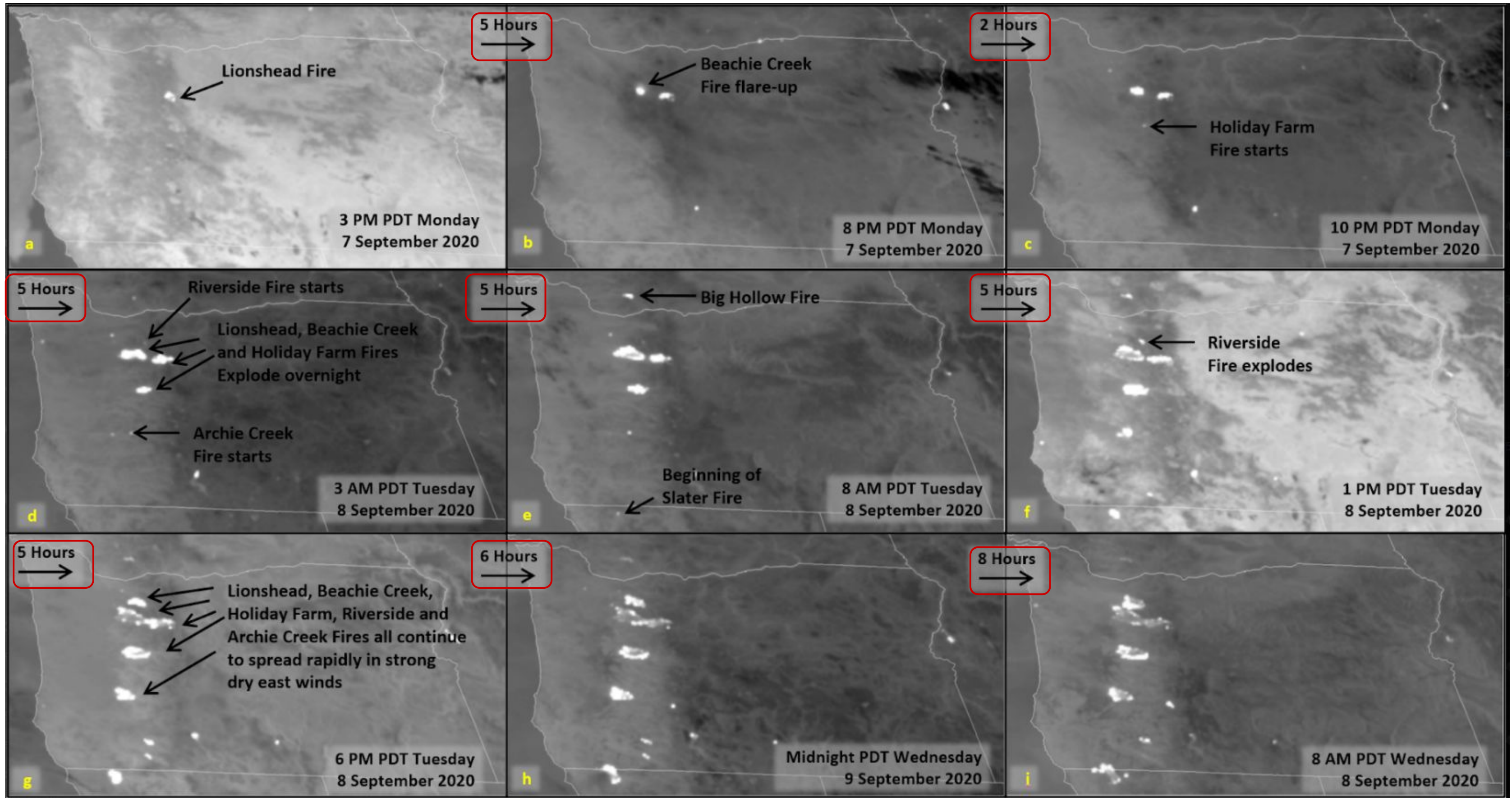






# Resultant Large Wildfires: September, 2020

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Portland, OR  
Wednesday, October 20



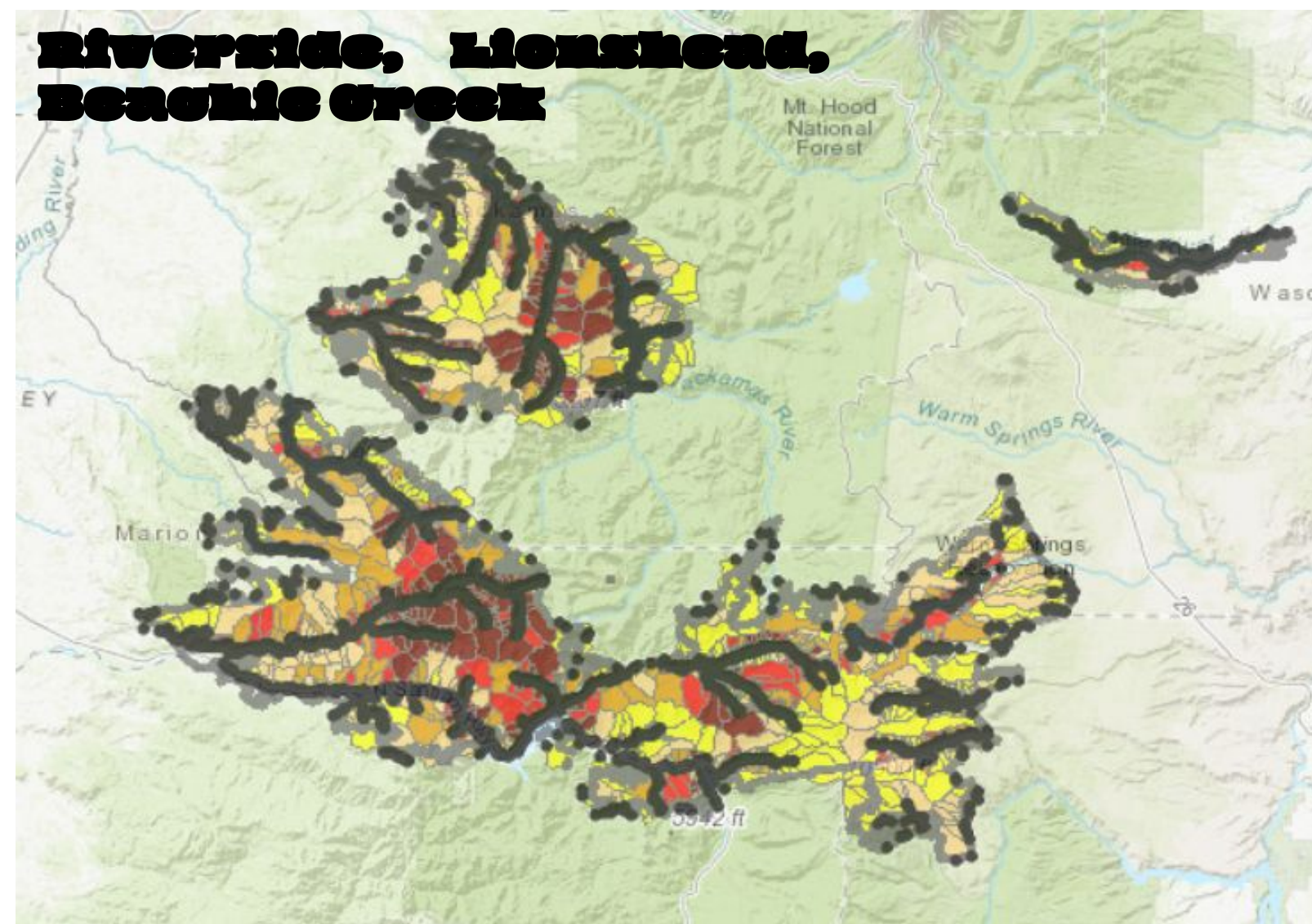
**~40-hour GOES-W, Band 7 (shortwave IR) satellite composite depicting the explosive wildfire growth September 7-8, 2020 during the strong**





# Resultant Large Wildfires: September, 2020

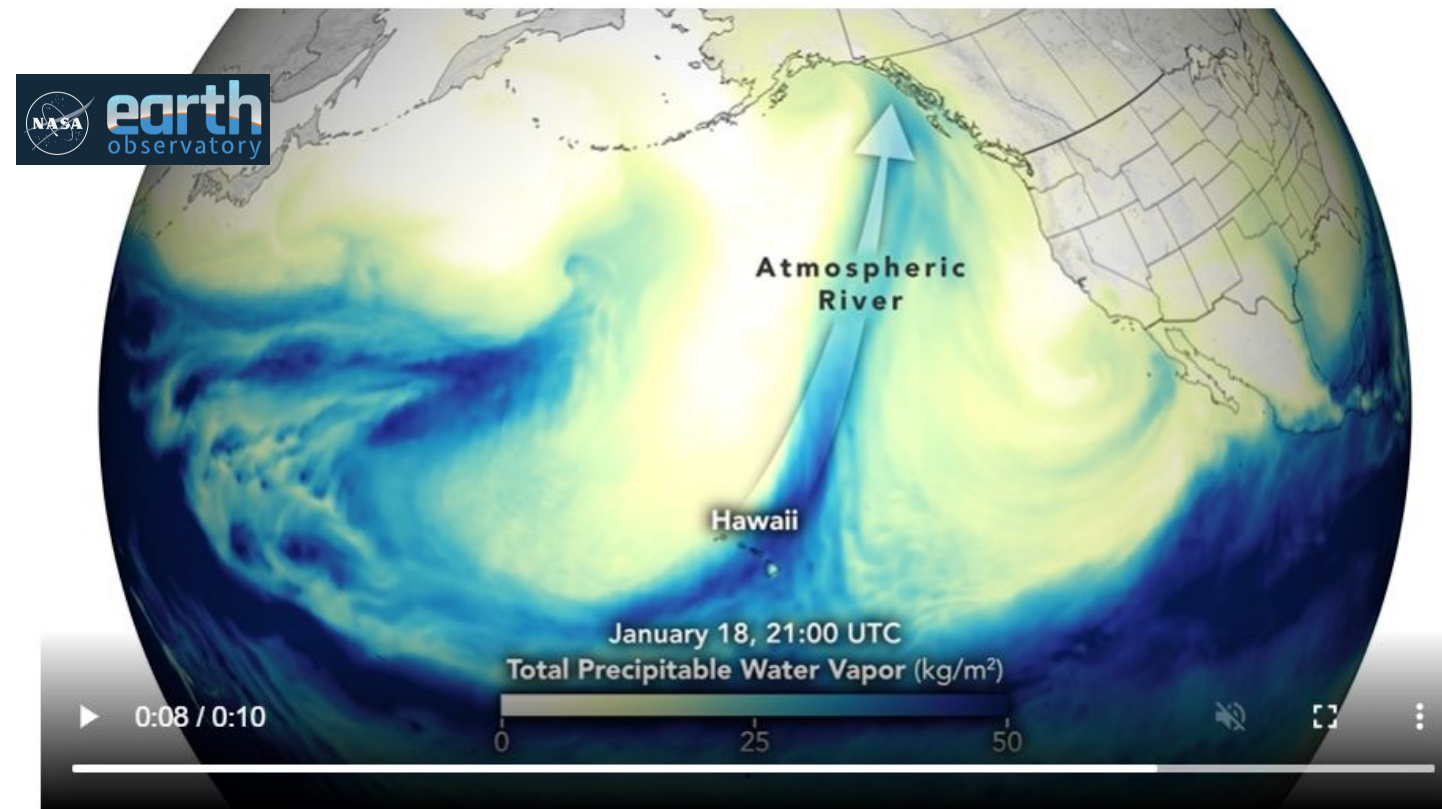
Weather Forecast Office  
Portland, OR  
Wednesday, October 20



**Composite of September 2020 Oregon wildfires (left), and zoomed-in burn intensity maps for the Riverside, Lionshead, Beachie Creek, Holiday Farm, and Aronie**



Anomalous moisture feed led to periods of heavy rain, resulting in **river flooding, mudslides, and landslides.**



January 11 - 18, 2021

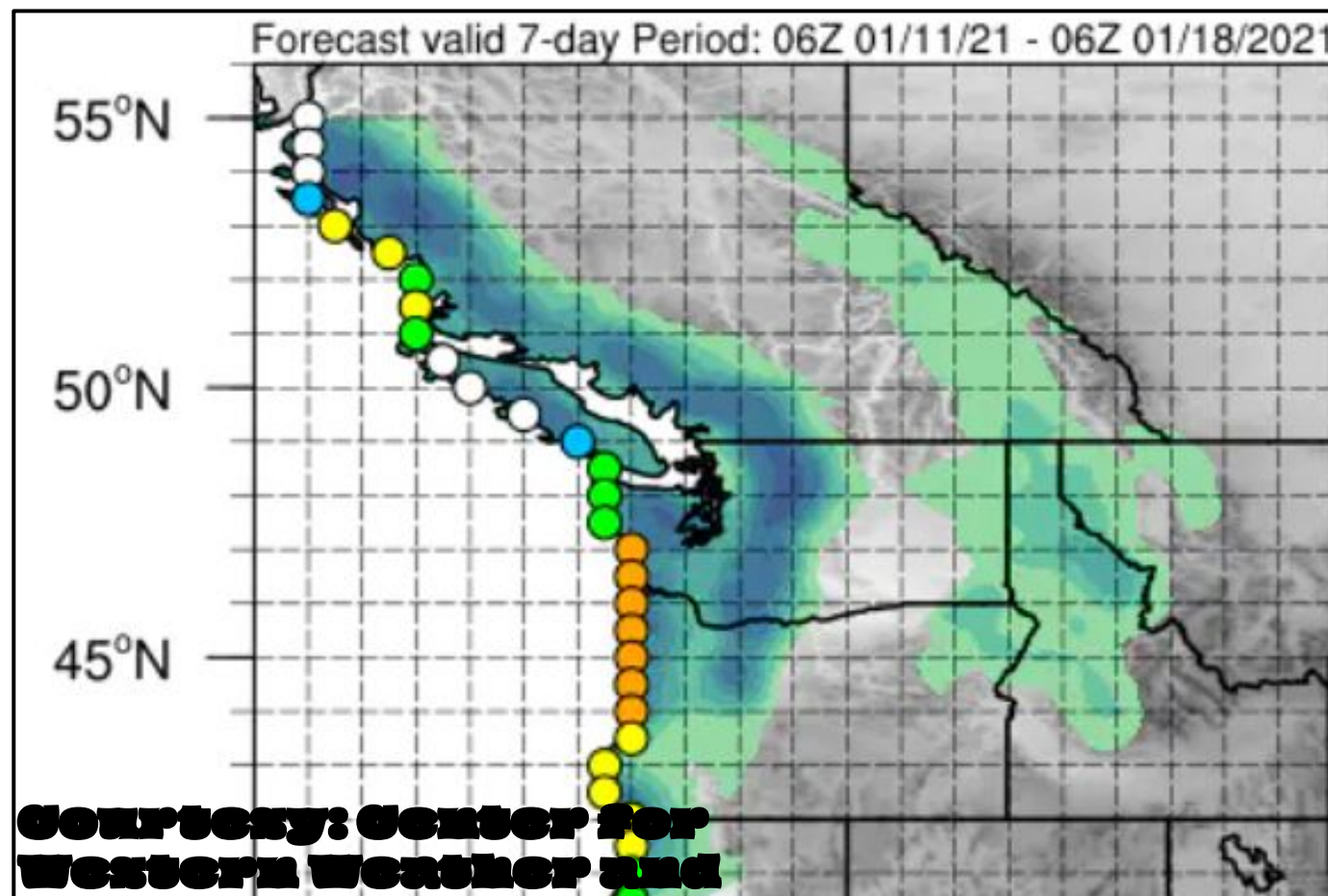
MPEG

## Main Stem River Flooding:

1. Wilson R near Tillamook
2. Trask R near Tillamook
3. Alsea R near Tidewater
4. Nehalem R near Vernonia
5. Nehalem R near Foss
6. Siuslaw R near Mapleton
7. Siletz R near Siletz
8. Marys R near Philomath
9. Tualatin R near Dilley
10. Luckiamute R near Suver
11. Tualatin R near Farmington
12. Clackamas R near Estcada

## Large Creek Flooding:

1. Fanno Creek in Portland
2. Johnson Creek in Portland



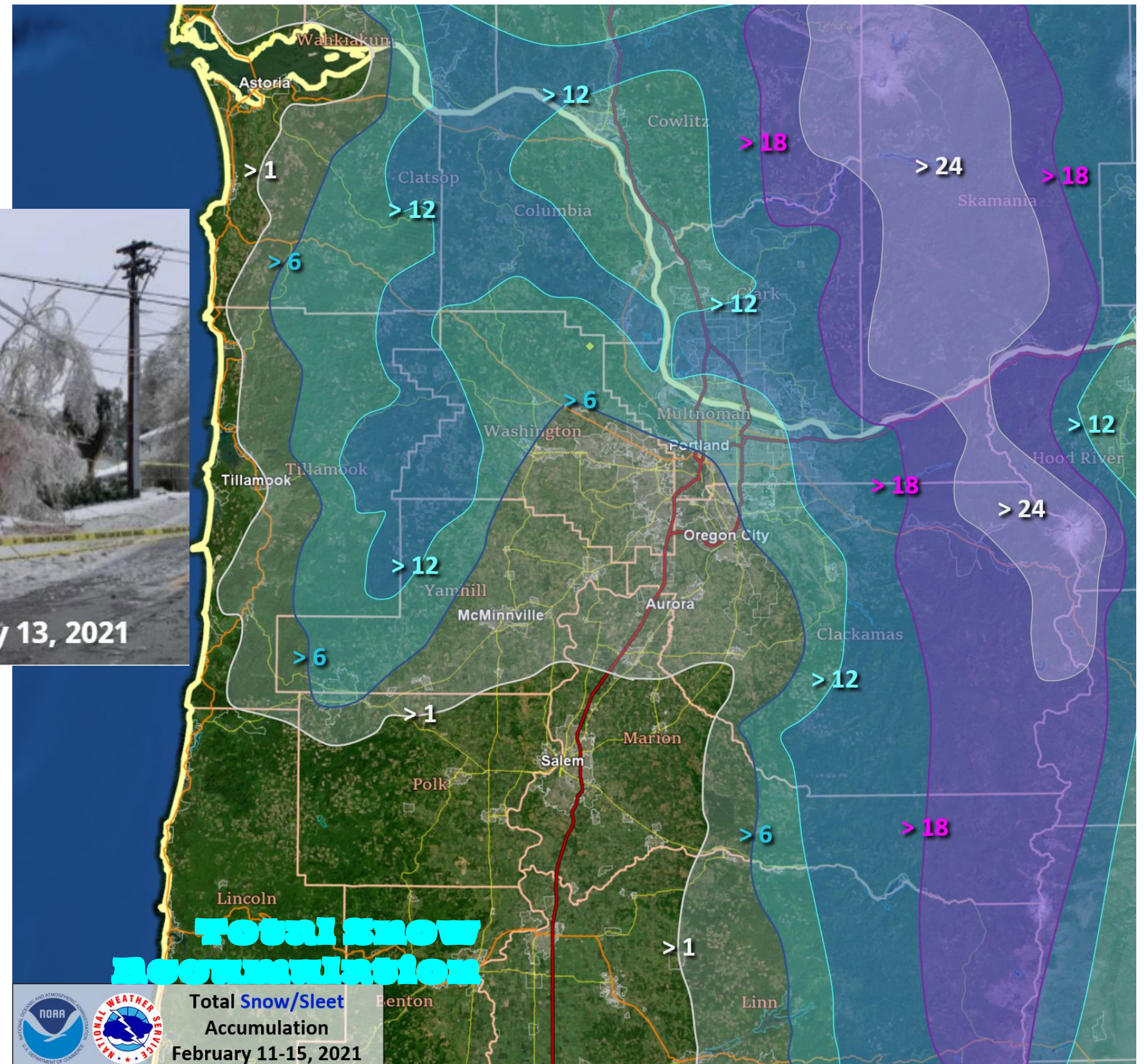
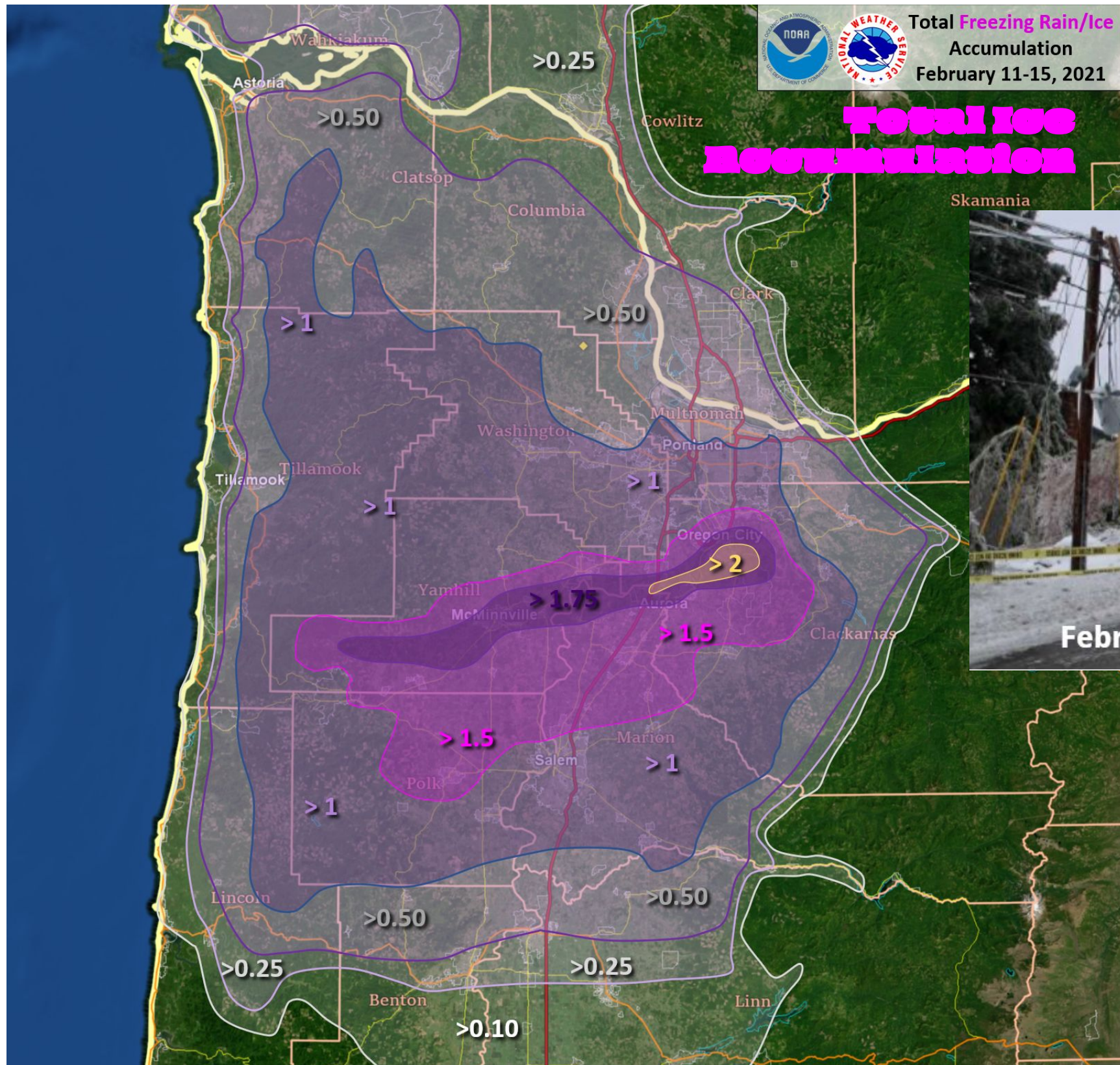
Courtesy: Center for Western Weather and Water Extremes





# Major Snow and Ice Storm: February 11-14 2021

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

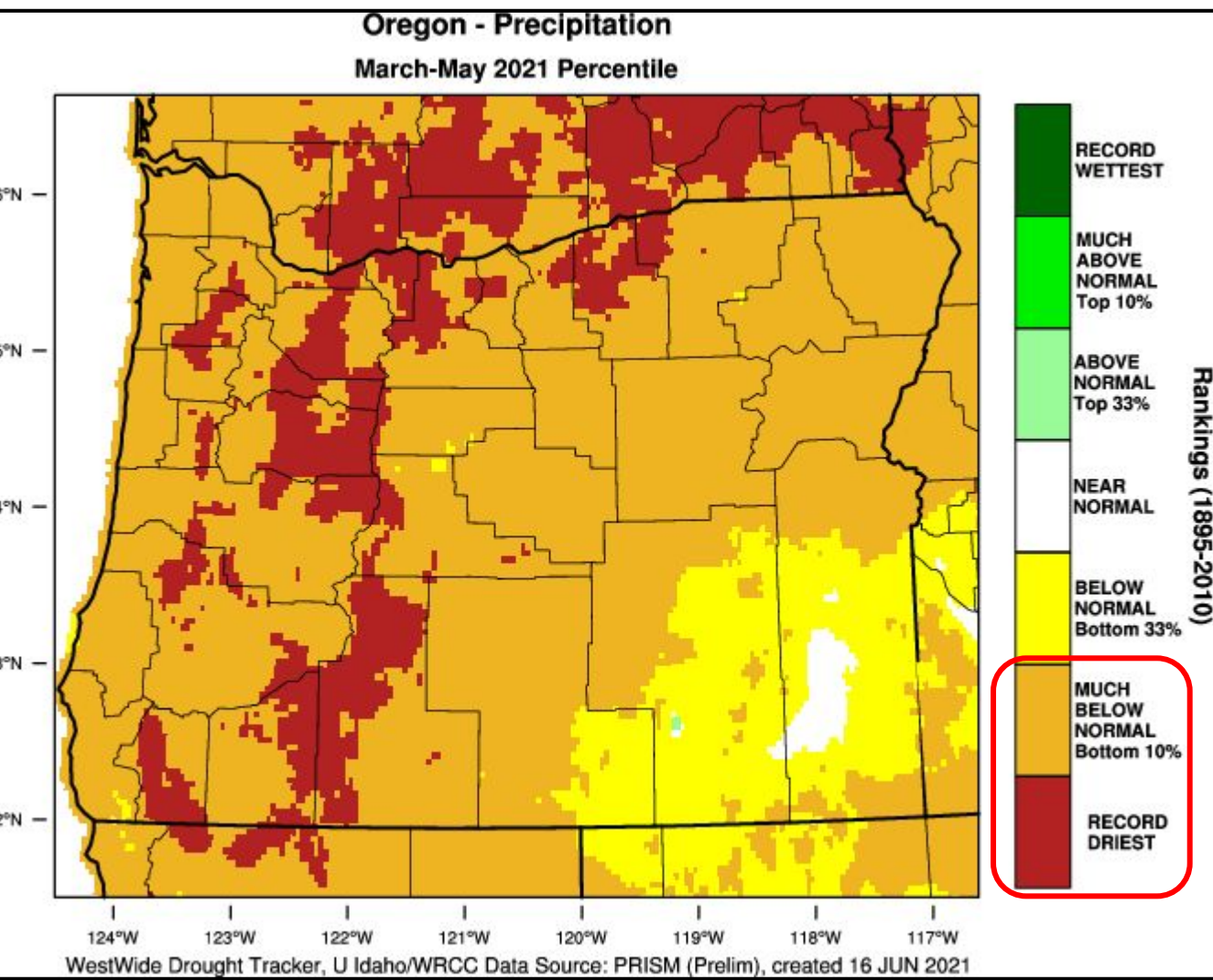






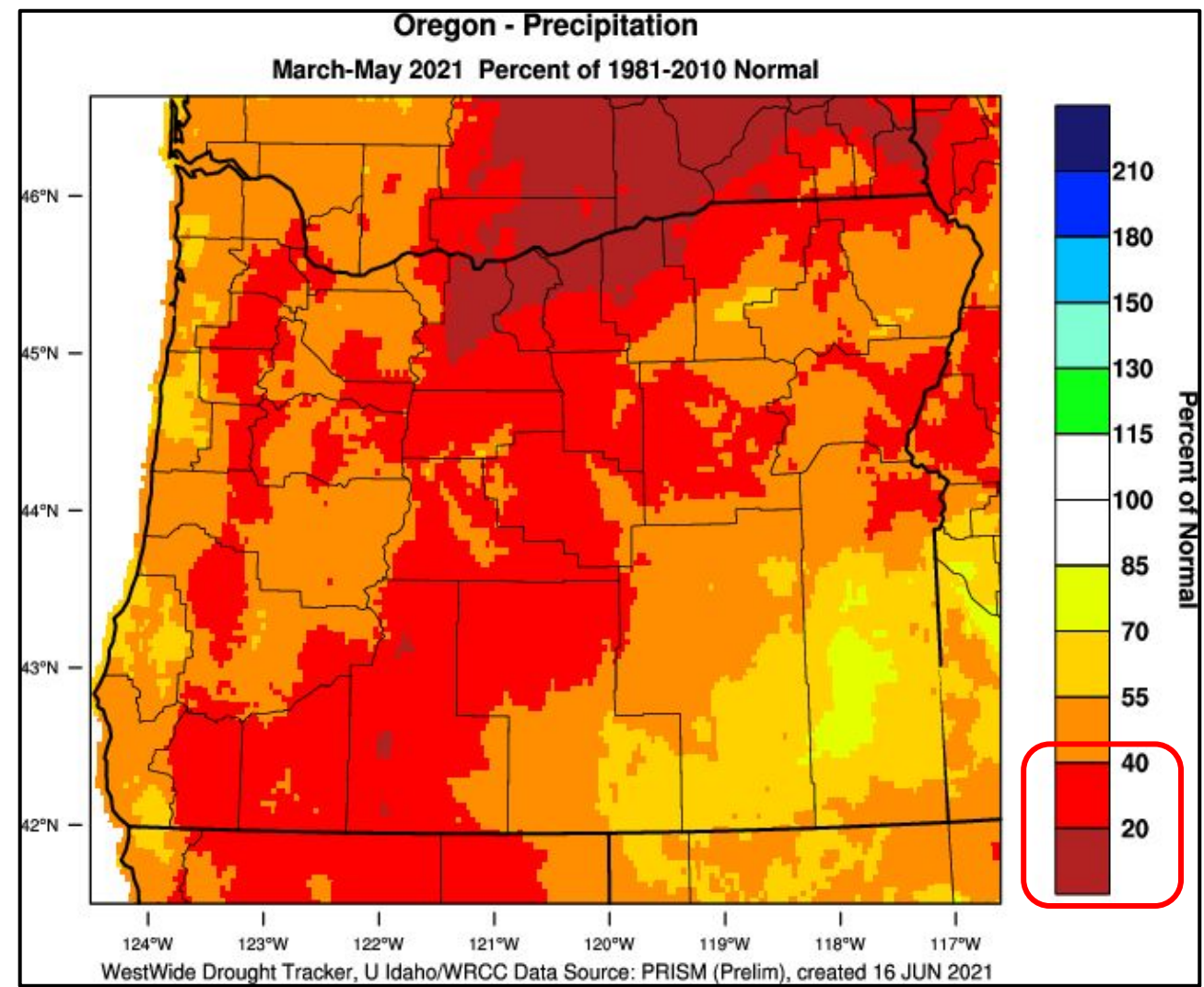
# Record Setting Dry Spring: March to May 2021

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Portland, OR  
Wednesday, October 20

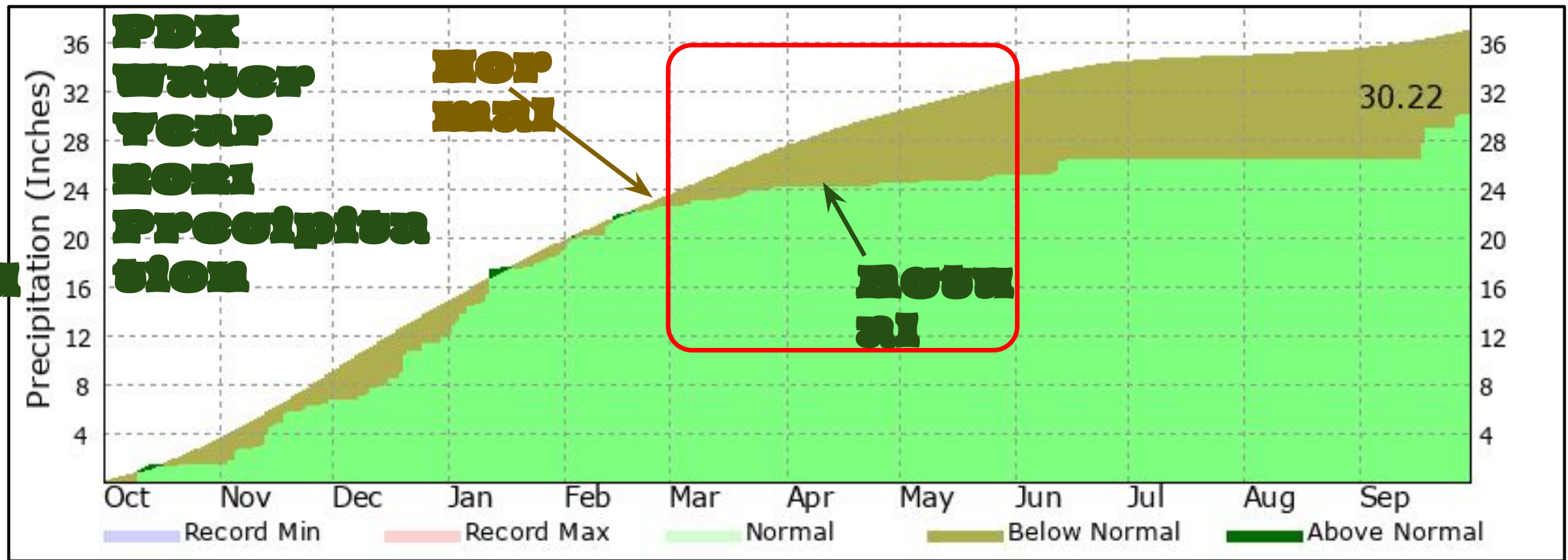


**Many areas across Oregon (and Washington) experienced the driest March-May on record.**

**Many areas received only 15-40% of normal precipitation March-April-May 2021.**



**Comparison of normal versus actual accumulated precipitation in Portland for the water-year Oct. 2020 through Sep. 2021.**

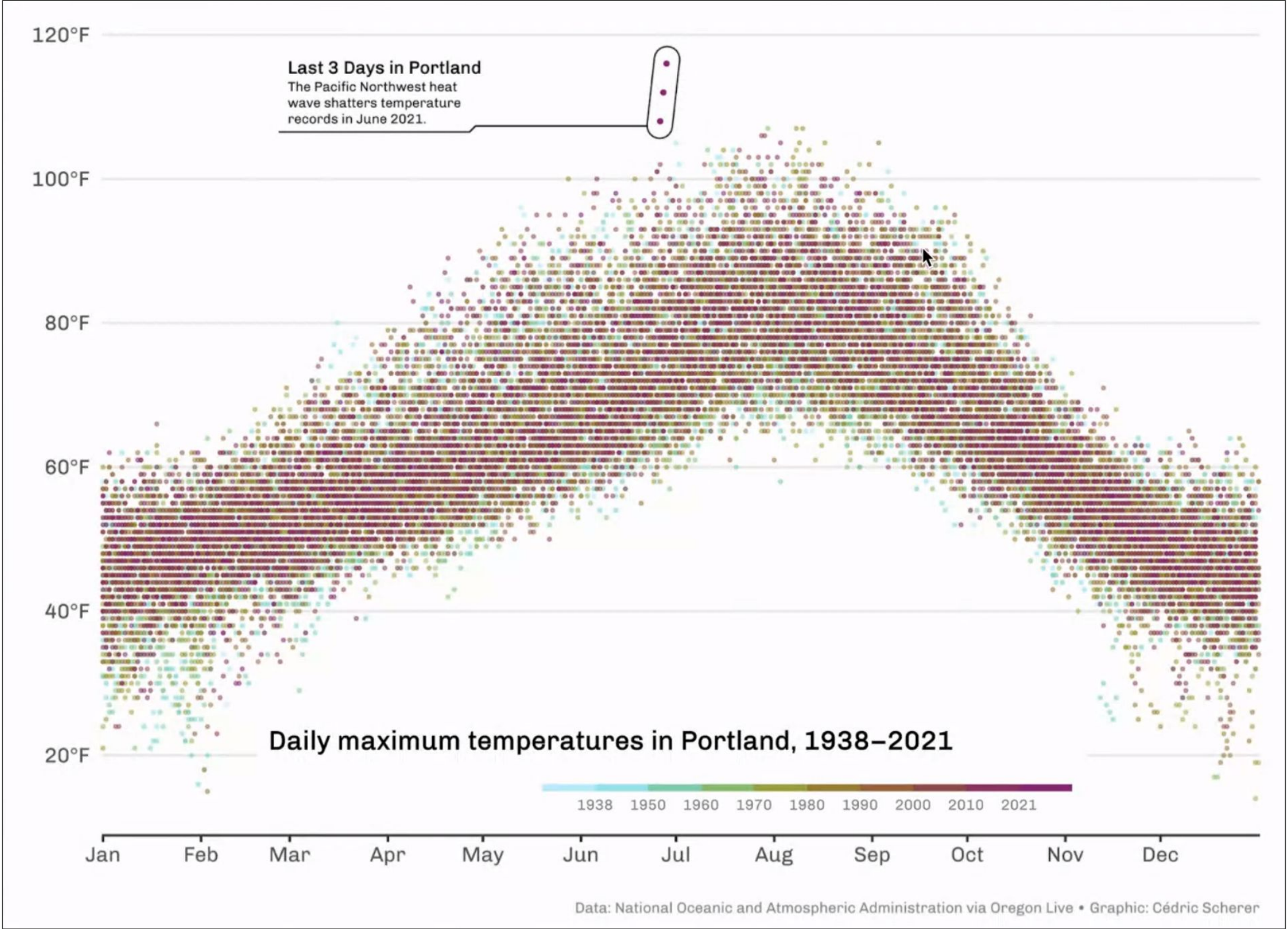




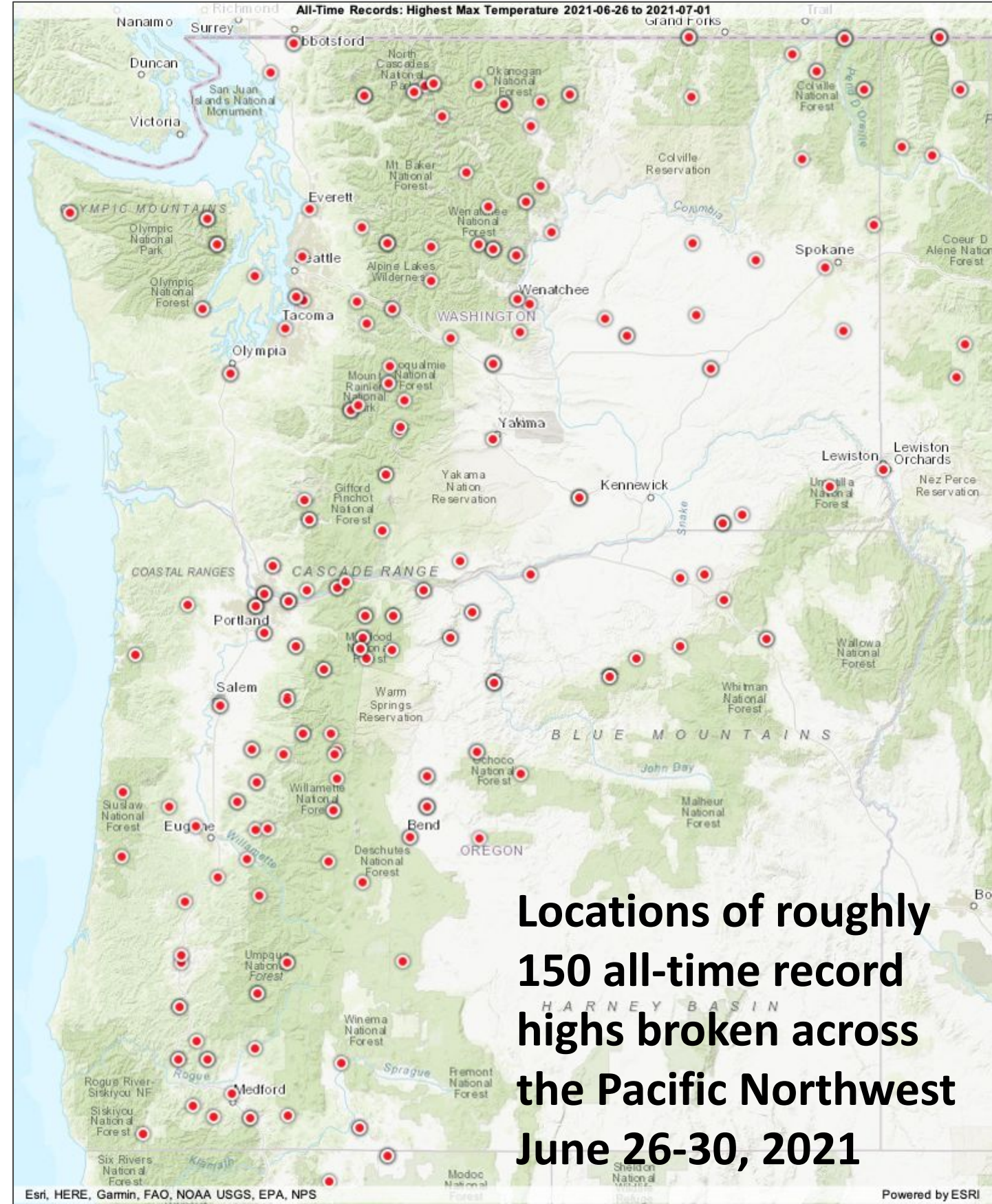


# Historic PacNW Heat Wave: June 26-29, 2021

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Portland, OR  
Wednesday, October 20



Graph showing all high temperatures in Portland, OR 1938-2021. The extreme outliers of June 26-27-28, 2021 are noted at top.

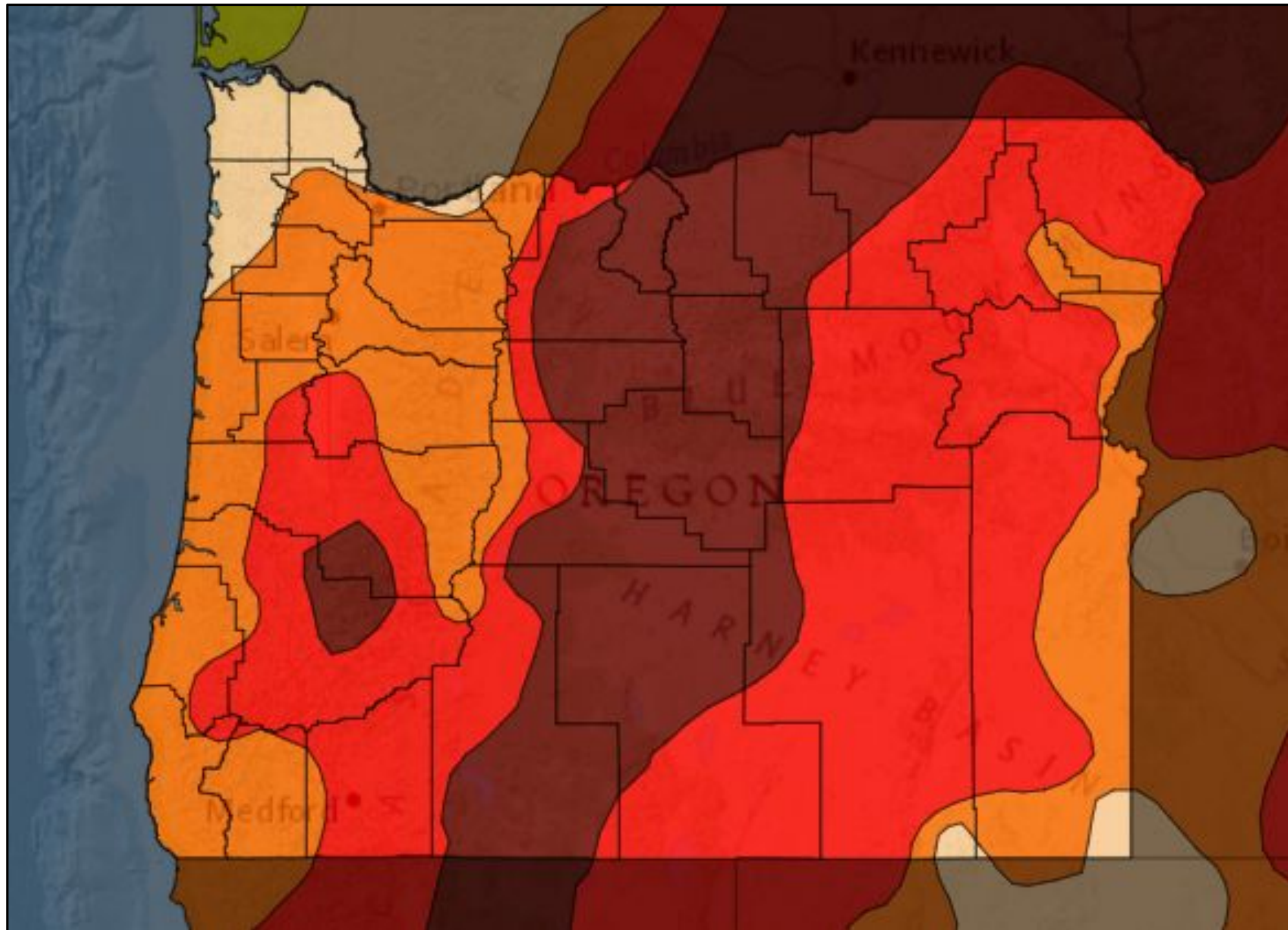






# Latest Oregon Drought Monitor

Weather Forecast Office  
Portland, OR  
Wednesday, October 20



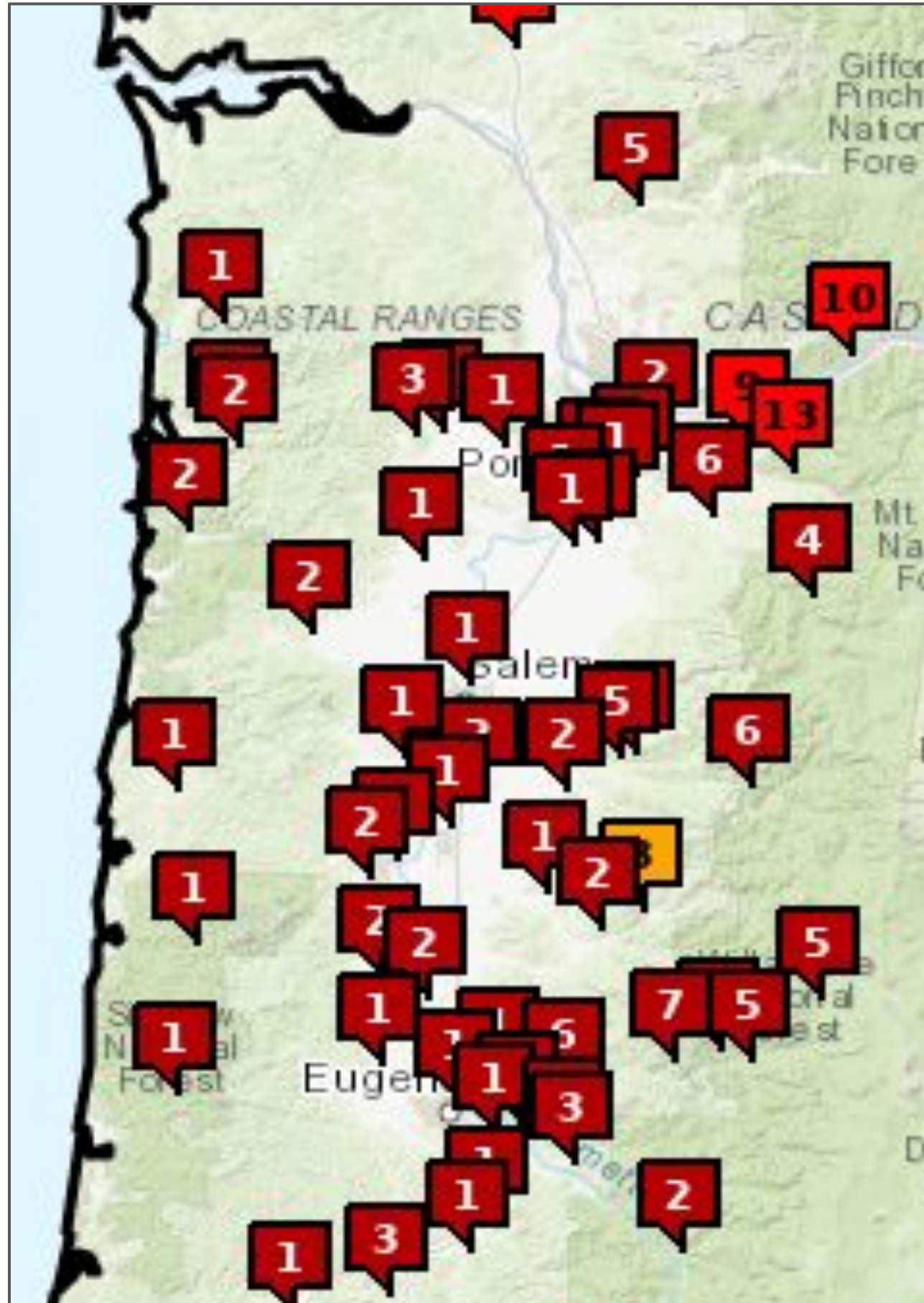
	<b>D0 - Abnormally Dry</b> • Ski season is impacted	<b>100.0%</b> of OR
	<b>D1 - Moderate Drought</b> • Some fields are left fallow • Water levels begin to decline; recreation and other uses are impacted	<b>100.0%</b> of OR
	<b>D2 - Severe Drought</b> • Pastures are brown; hay yields are down, and prices are up; producers are selling cattle • Fire risk increases • Marshes are drying up, little water is available for waterfowl and wildlife; bears are moving into urban areas	<b>96.5%</b> of OR
	<b>D3 - Extreme Drought</b> • Planting is delayed • Wildfire activity is high • Reservoirs and lakes are very low compared to normal; irrigation water is scarce	<b>72.1%</b> of OR
	<b>D4 - Exceptional Drought</b> • Power generation is reduced	<b>26.6%</b> of OR





# Accumulated Runoff: April through September 2021

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Portland, OR  
Wednesday, October 20



TUALATIN - AT FARMINGTON (FRMO3) Period Rankings - 1948 to 2022 APR-SEP Normal -- 176 (KAF)				
Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
1	2010	314.42	178	1.333 %
46	2022	139.48	79	61.333 %
71	2015	77.20	44	94.667 %
72	1977	70.19	40	96.000 %
73	1965	66.25	38	97.333 %
74	2021	53.13	30	98.667 %



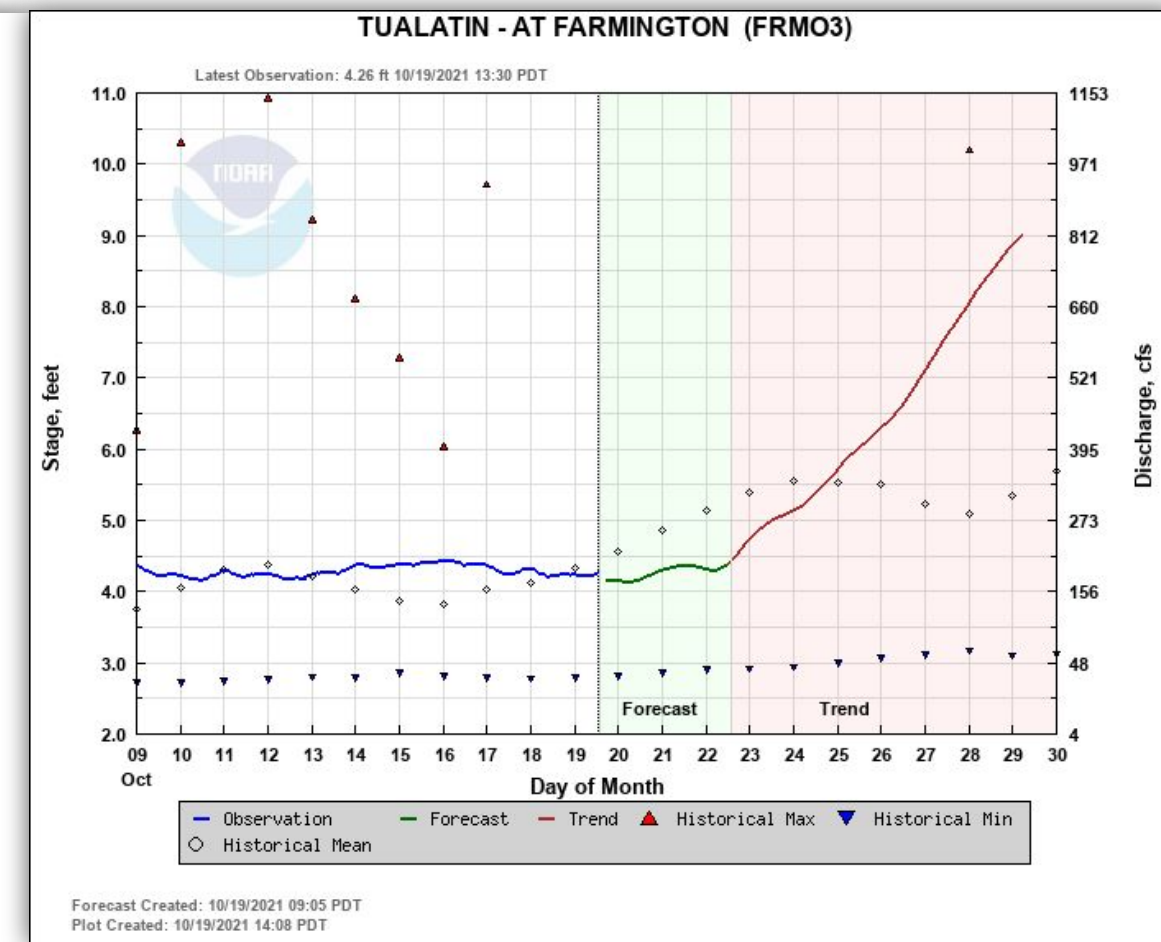
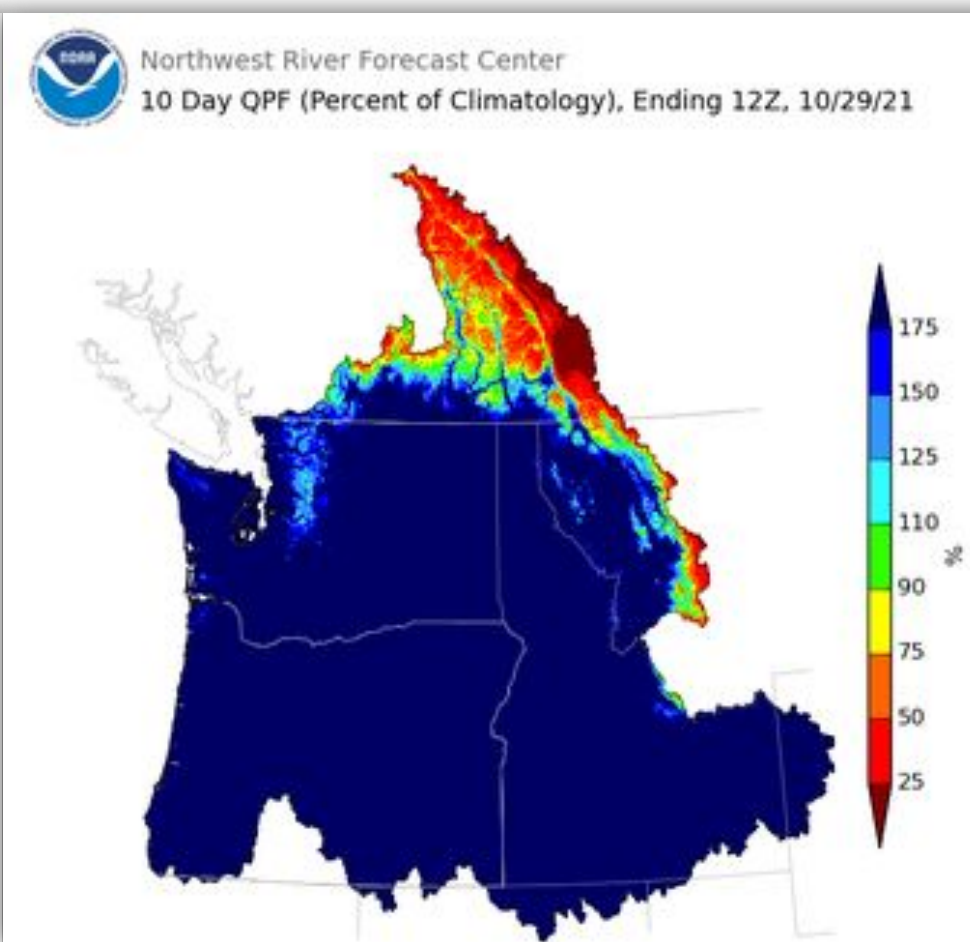
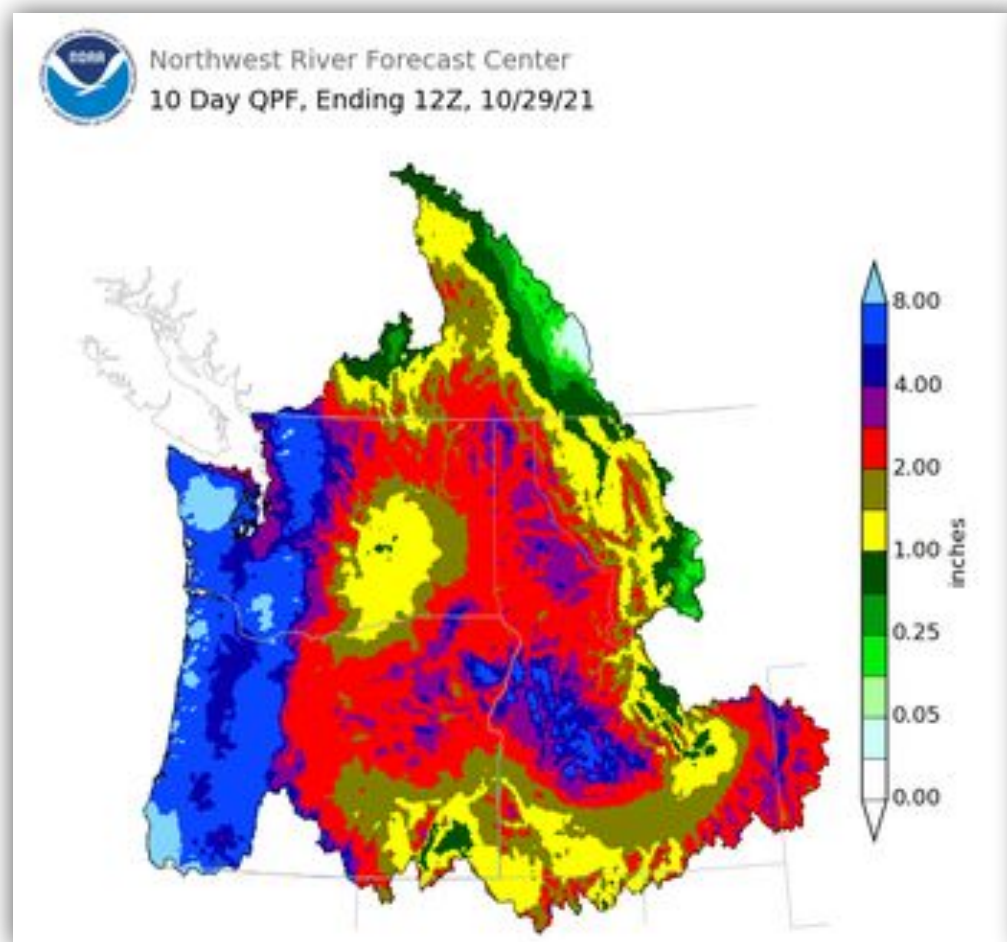


# Winter Seasonal Outlook

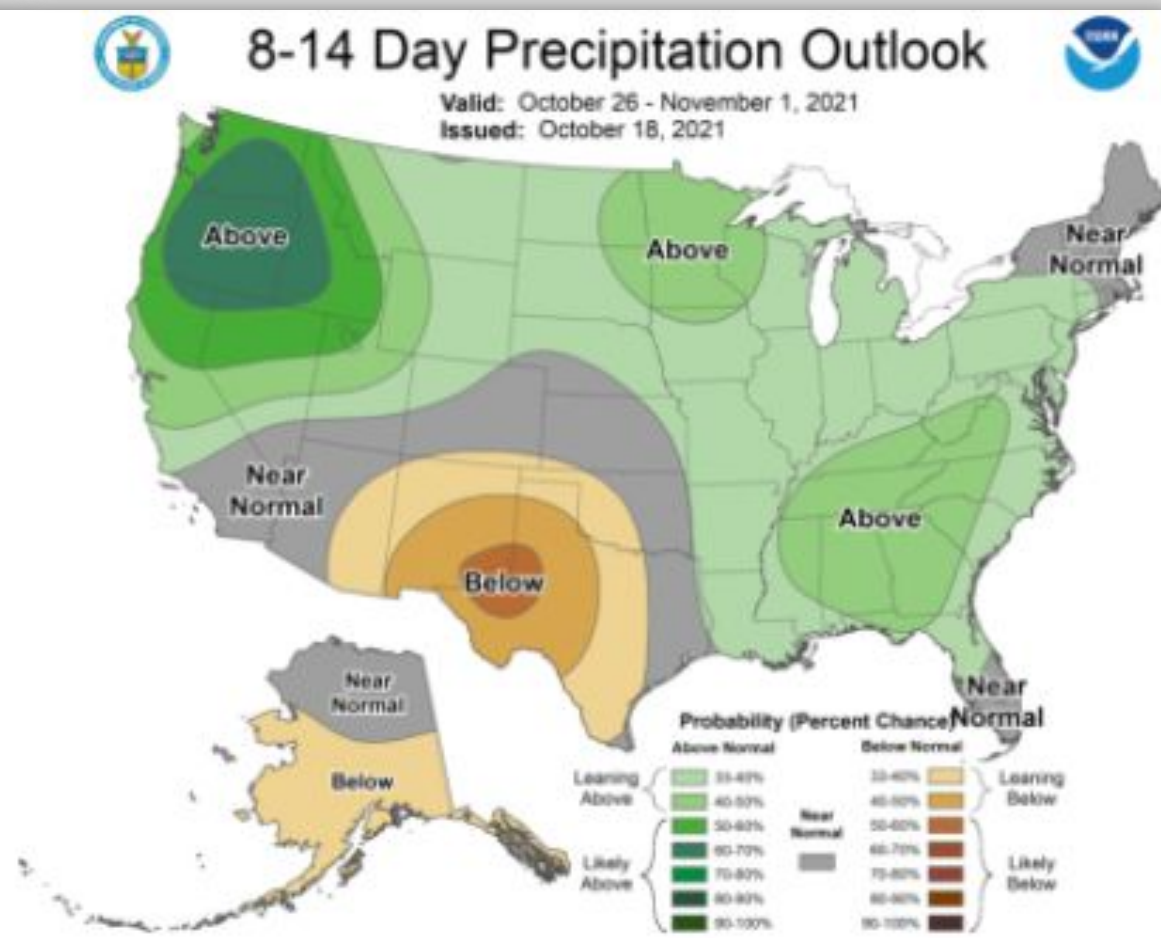
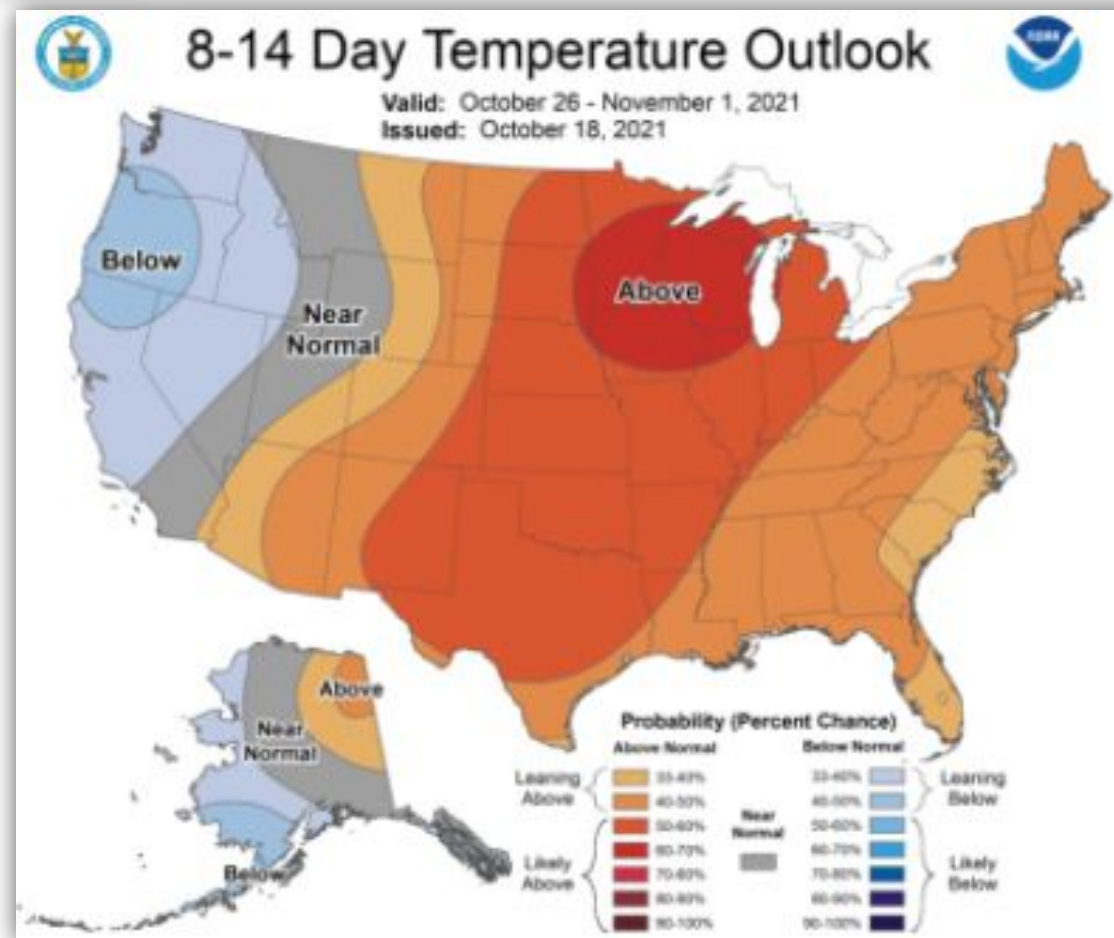
Weather Forecast Office  
Portland, OR  
Wednesday, October 20

# Winter Season Outlook 2021/2022





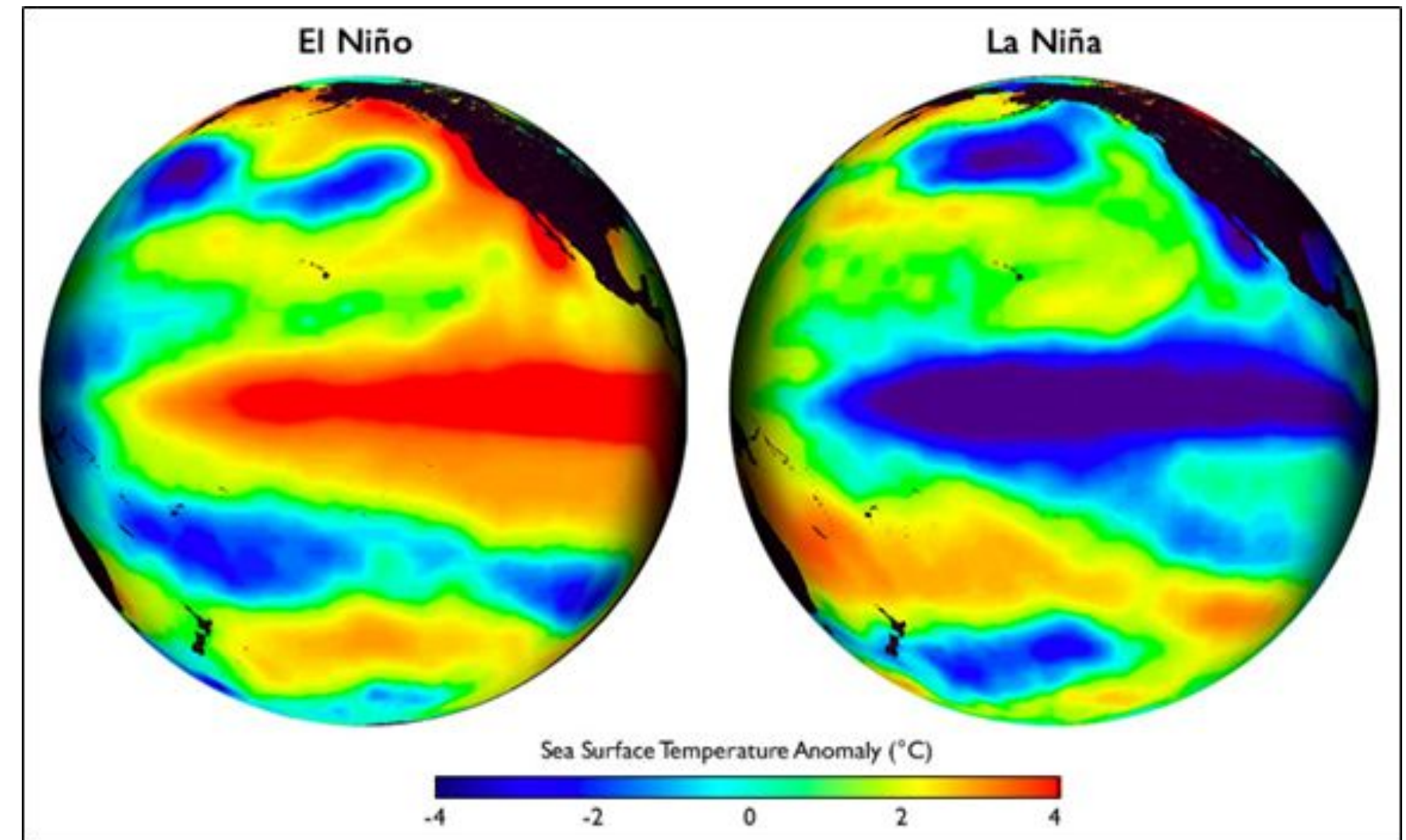
Next 2 weeks look WET,  
but flooding is unlikely.





## What is ENSO?

El Niño and the Southern Oscillation, commonly referred to as ENSO, is a periodic fluctuation in sea surface temperature (SST) and the overlying atmosphere across the equatorial Pacific Ocean.



## ENSO has three possible stages:

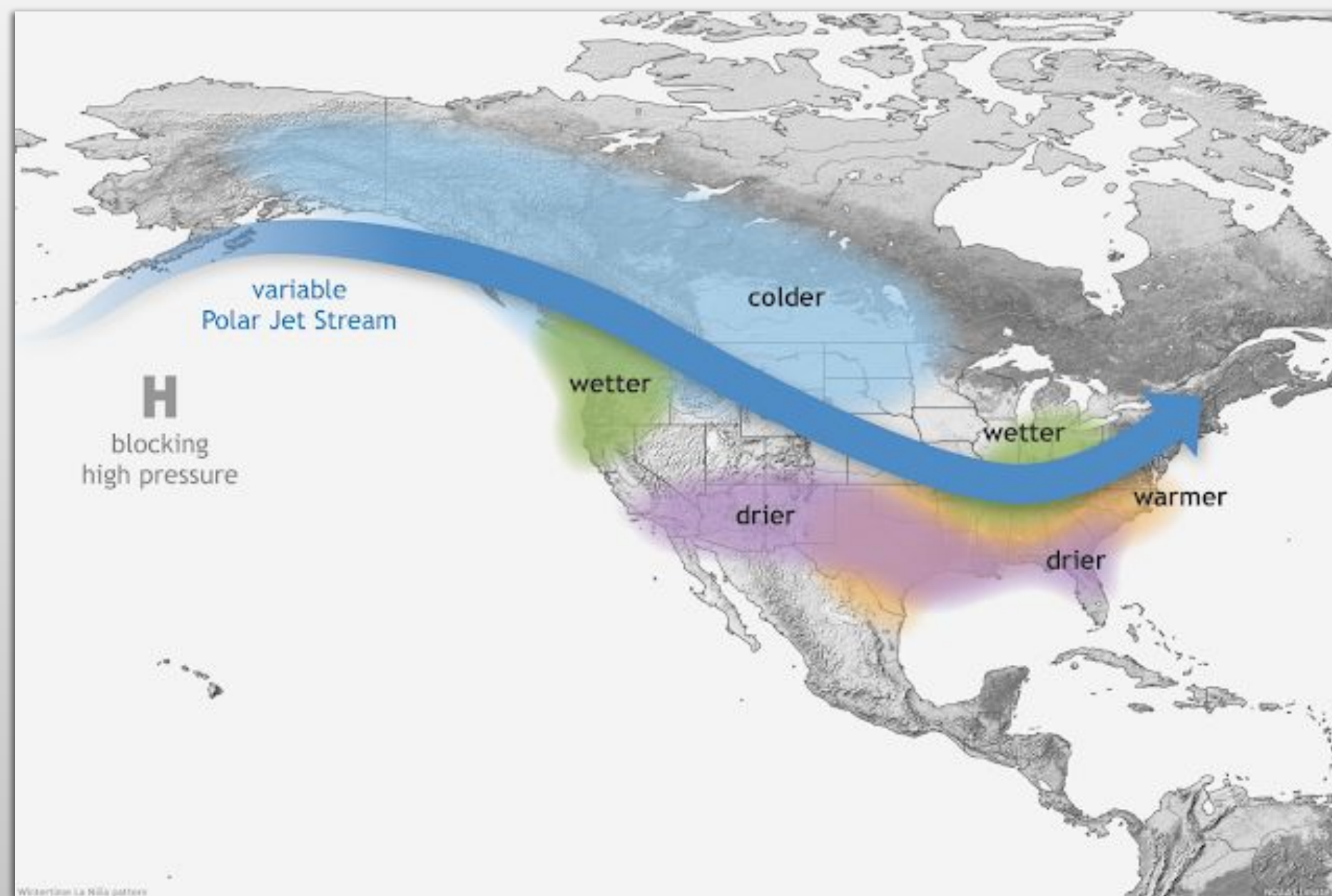
- ENSO-neutral (near-normal water temps across the equatorial Pacific)
- **La Niña** (relatively **cool water** across the equatorial Pacific - **above right**)
- **El Niño** (relatively **warm water** across the equatorial Pacific - **above left**)



# La Niña Status

ENSO Alert  
System  
Status:

**La Niña  
Advisory**



La Niña conditions have developed and are expected to continue with a **85-90% chance of La Niña during the Northern Hemisphere winter 2021-22.**



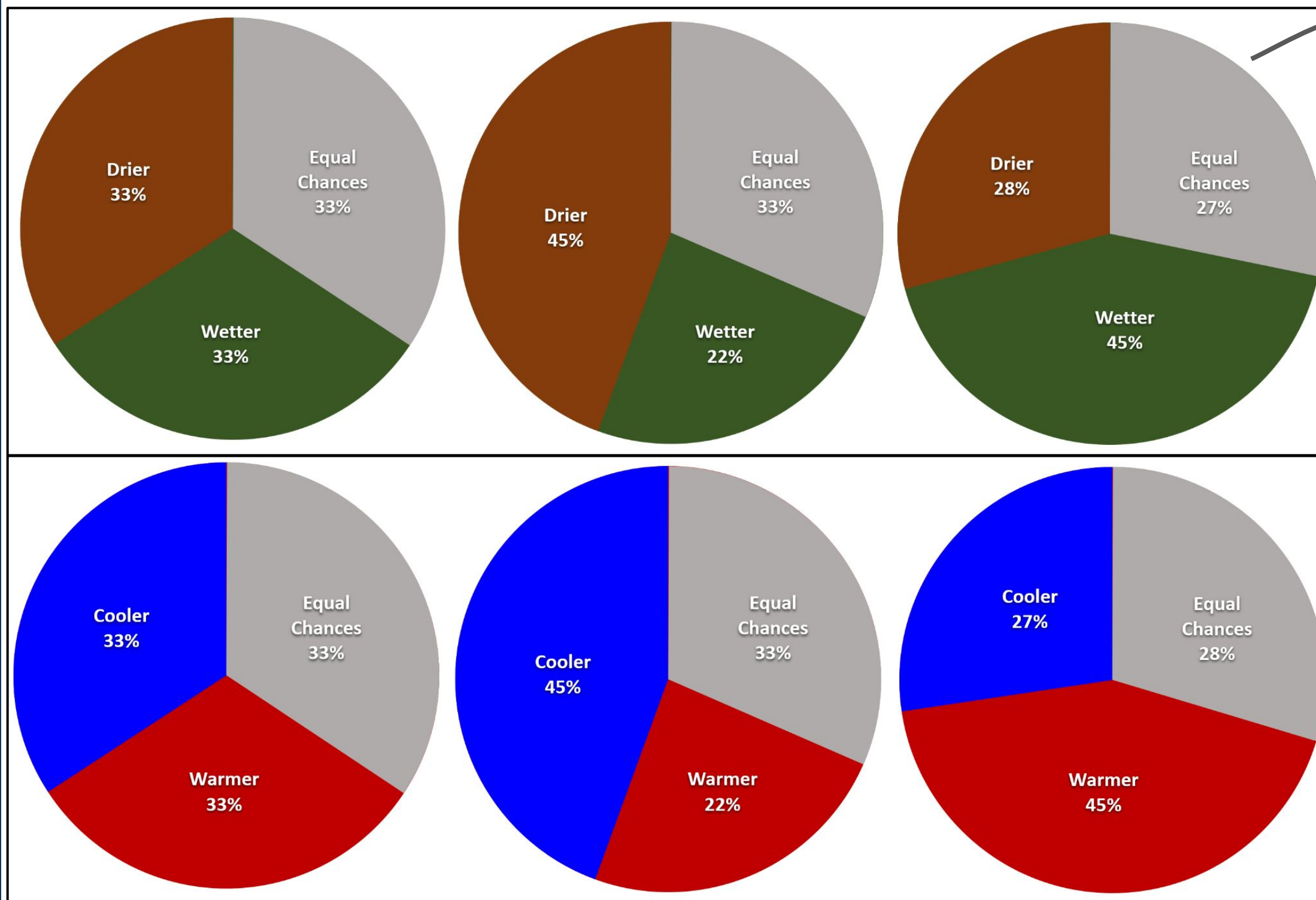


Precipitation

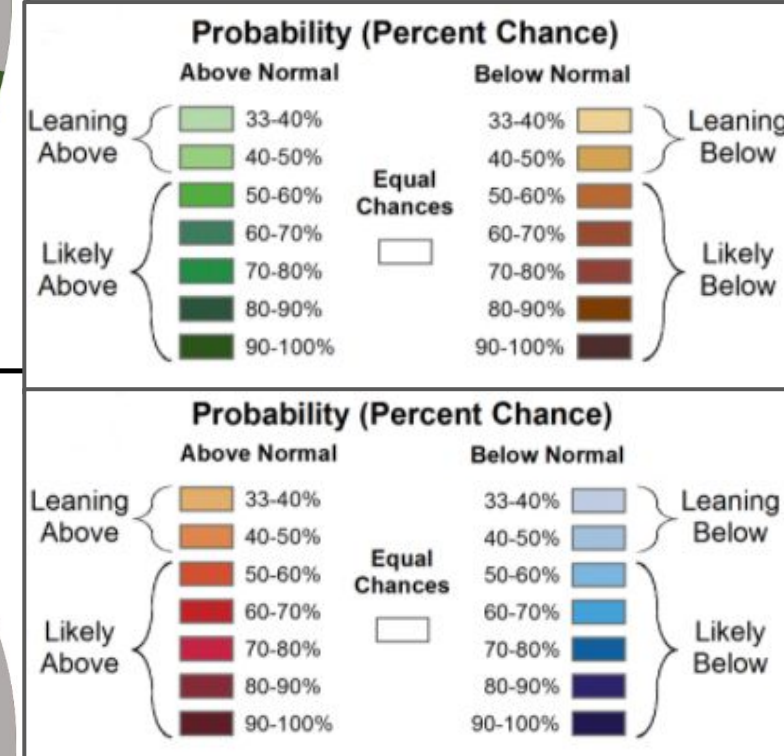
## How to Interpret Seasonal Outlook Probabilities



Temperatures



The higher the probabilities get to "favor" a certain tendency - the more it changes the wedges on the pie charts



**Also: It's important to remember that these outlooks are an *accumulated average* of the 3 month outlook period.**





# CPC October-December 2021: 3 Month Outlook

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Portland, OR  
Wednesday, October 20

## Oct-Dec Outlook Favors



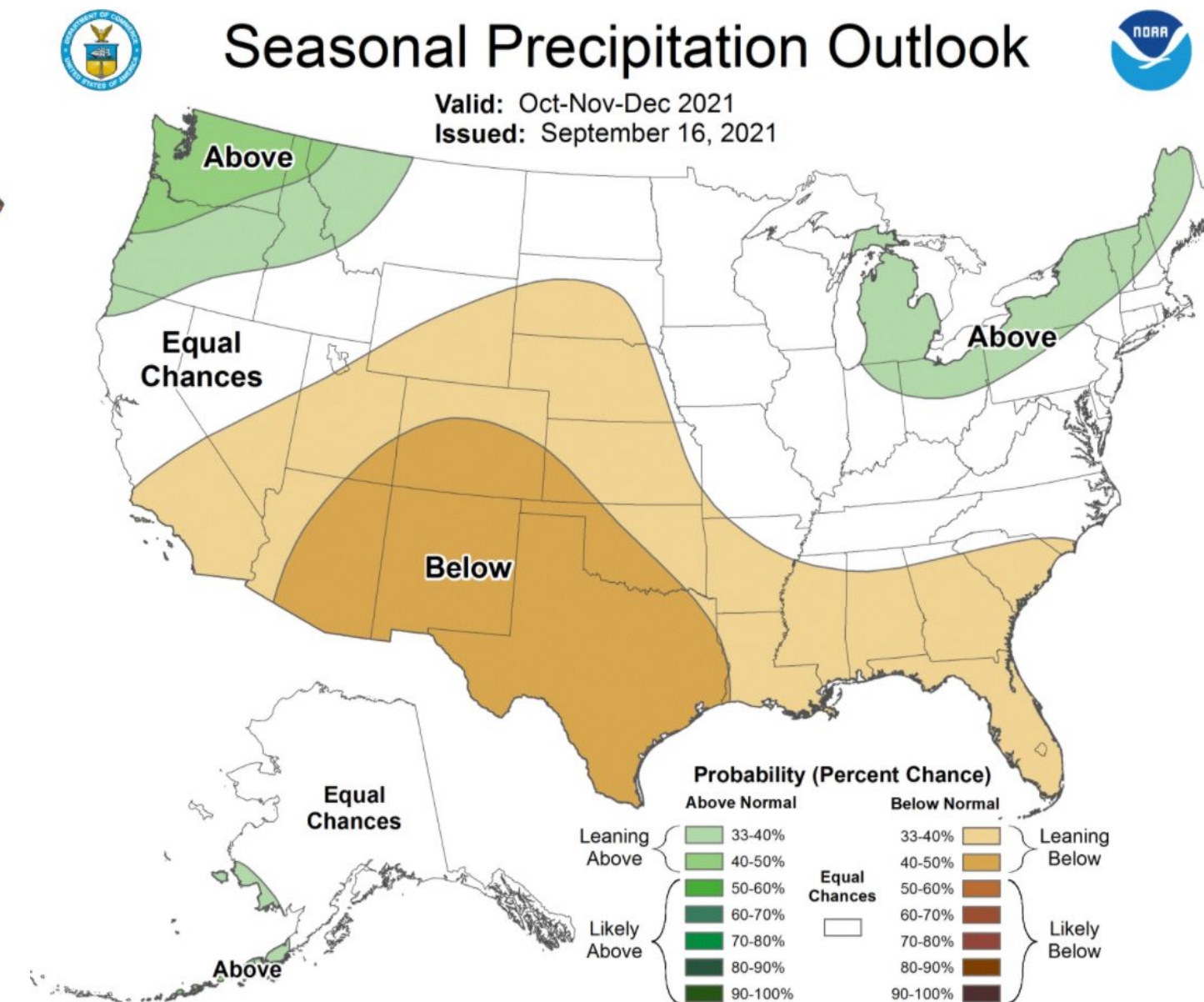
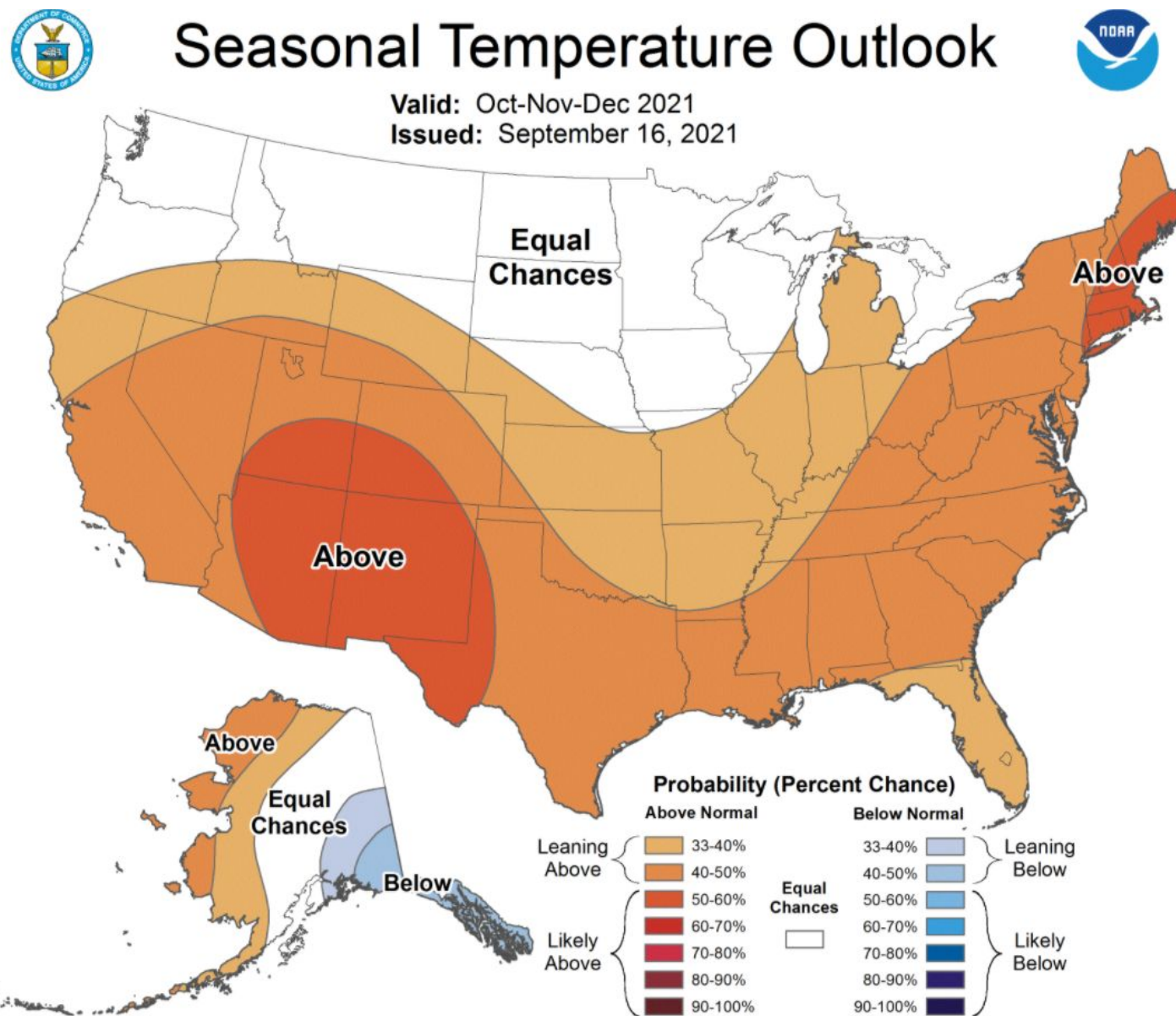
Precipitation

Greater chances for Wetter than Normal



Temperatures

Near Equal Chances of above, below, or near average





## Jan-Mar Outlook Favors



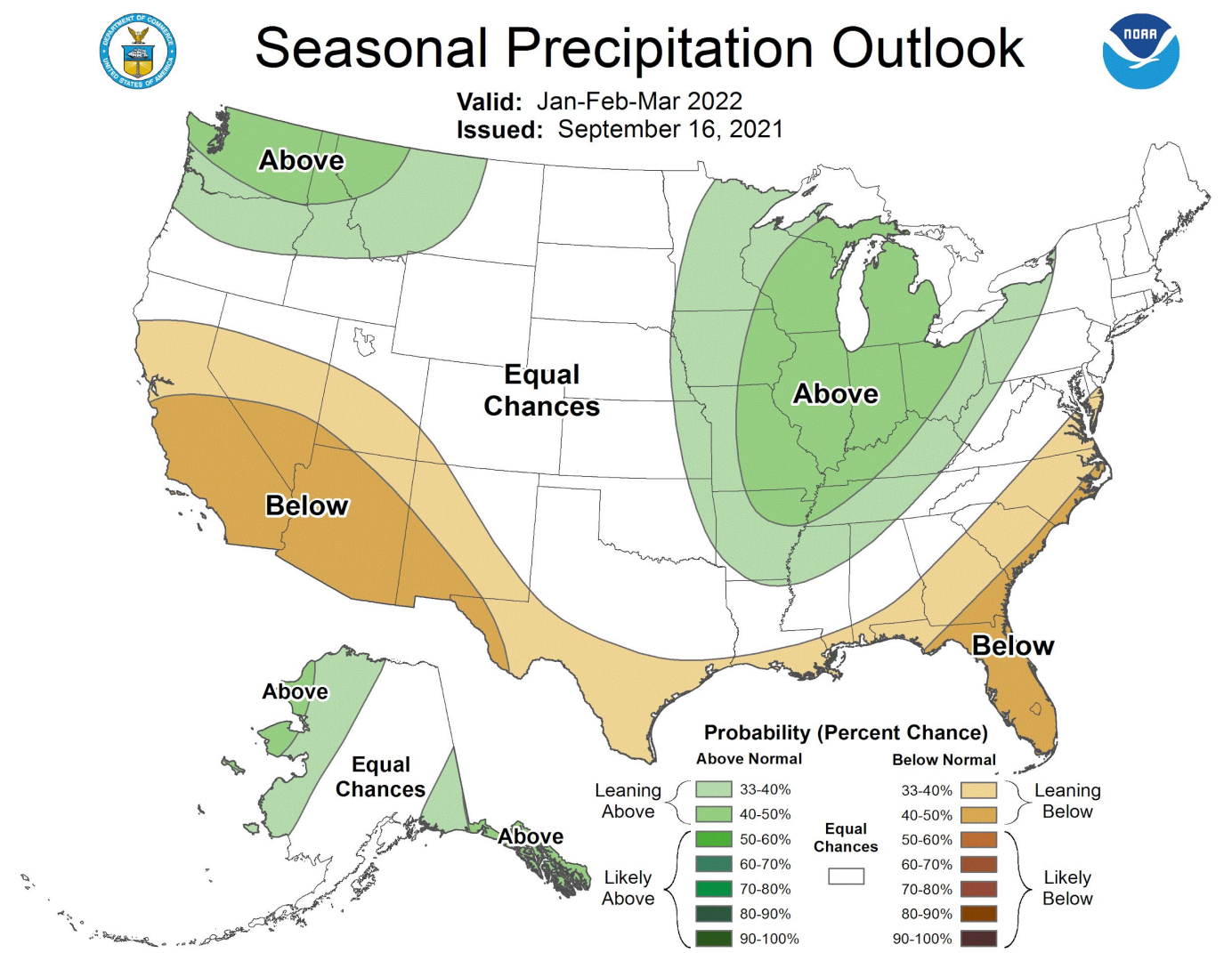
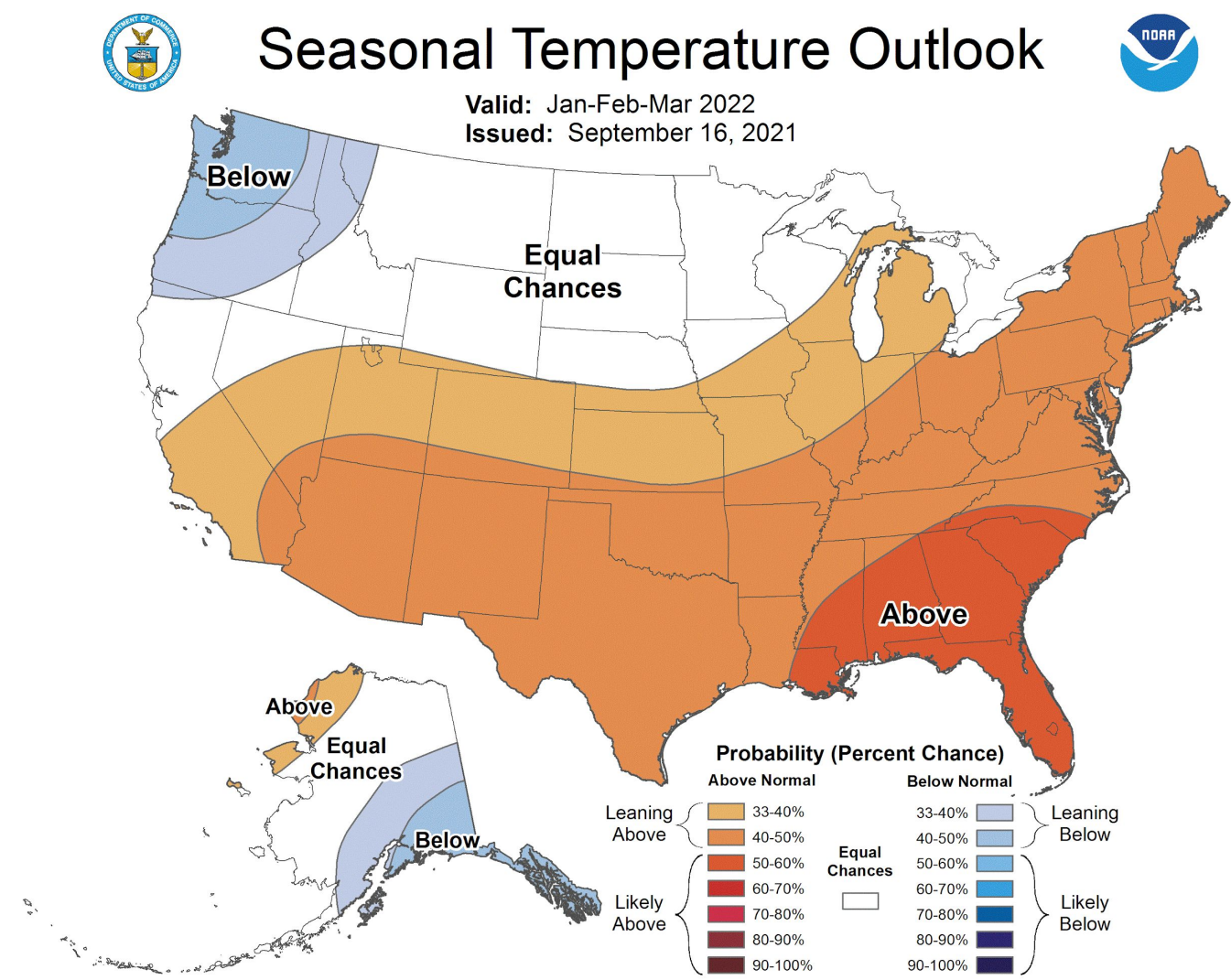
Precipitation

**Greater chances for Wetter than Normal**



Temperatures

**Greater Chances for Cooler than Normal**



Climate predictions can have skill in predicting seasonal totals and averages. **However, most impacts are associated with short-duration storm systems.**





# Updates to NWS Products & Services





## National Weather Service Mission Statement

Provide weather, water and climate data, forecasts, warnings, and **impact-based decision support services** for the protection of life and property and enhancement of the national economy.

- Updated Oct. 14, 2021
- IDSS is now as much a part of NWS mission as forecasts and warnings
- Highlights the importance of NWS to serve the local needs of diverse communities with the information needed to prepare for and respond to impacts caused by extreme weather events.





# New Email Briefing Format

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

New look coming to our Partner Email Briefings this Fall.

Better color table more aligned with color-blind sensitive groups.

Hazards and impacts grouped by hazard or in a timeline.

## New format

Next update: 17 Dec 2020

**KEY POINTS**

- Another system will move through the area this morning, with moderate mountain snow, lowland rain, and locally gusty winds expected, mainly along the coast and San Juan Islands, Admiralty Inlet, and western Whatcom/Skagit Counties.
- Several additional systems will impact the area this week, with each round arriving late Wednesday through Thursday, Friday, and late Saturday through Sunday
- The strongest system of this week is expected to be Saturday-Sunday with locally heavy rain, stronger winds, and rising rivers on many area rivers. Flood potential will need to be monitored.
- An increased threat for landslides may develop this weekend.

**WEATHER RISK OUTLOOK**

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence.

Wed 9/1	Thu 9/2	Fri 9/3	Sat 9/4	Sun 9/5	Mon 9/6	Tue 9/7
Mountain Snow High Surf early Locally Windy	Mountain Snow early Locally Windy	Mountain Snow, Lowland Rain Locally Windy	Heavy Rain Locally Windy Rising Rivers	Heavy Rain Locally Windy Rising Rivers	Rising Rivers	
	Little to None	Minor	Moderate	Major	Extreme	

**DETAILS**

**Cascades and Mountain Passes**

**Snow** Impacts: Hazardous travel possible in the passes due to moderate snow, especially Thursday morning.

**Coast and Lowland Locations**

**River Flooding** Impacts: Rivers are expected to rise through this week, with increasing potential for possible river flooding the weekend.

**Wind** Impacts: Localized power outages are possible late Wednesday into Thursday due to locally windy conditions. Localized power outages are again possible at times Friday and Saturday due to locally windy conditions.

EXAMPLE

EXAMPLE

## Old version

**Thunderstorm Threat Through Saturday**  
National Weather Service - Pendleton  
Issued: 9:43 AM PDT Friday, August 9th, 2019  
Next Update: As Needed/Requested  
Point of Contact: NWS Operations (24/7) - 541-276-4493

**KEY POINTS**

- Slight chance of severe thunderstorms for central/northeast Oregon Friday afternoon and evening with a marginal risk over south central and southeast Washington.
- Marginal chance of severe thunderstorms for northeast Oregon/Southeast Washington Saturday afternoon and evening.

**WEATHER & IMPACTS OUTLOOK**

Fri 08/09	Sat 08/10	Sun 08/11	Mon 08/12	Tue 08/13	Wed 08/14	Thu 08/15
Strong to severe storm possible late afternoon and evening	Strong storm possible late afternoon and evening	Lingering showers and a slight chance of thunderstorms mountains.				

**Weather Impacts Legend**

None Low Medium High Extreme

**CONFIDENCE AND FORECAST DETAILS**

**Central/Northeast Oregon/south central/southeast Washington**

**HIGH Confidence** Thunderstorms with heavy rain, hail and gusty winds this afternoon and again on Saturday.

**MODERATE Confidence** The potential for an isolated severe storm containing large hail/and or damaging winds this afternoon and evening and with a marginal risk on Saturday. The Storm Prediction Center has highlighted the area for a slight/marginal risk for today and a marginal risk for Saturday. Please see attached graphic.

- Thunderstorms will develop over southern and central Oregon this afternoon and evening and move north overnight.
- Strong to severe storms are possible this afternoon/evening with large hail and winds exceeding 50 mph.
- Saturday looks wet with scattered to numerous showers and isolated thunderstorms. there is a marginal risk of a strong or severe storm in northeast Oregon/southeast Washington yet Saturday afternoon and evening.
- Sunday will have some showers and isolated thunderstorms lingering in the mountains, otherwise dry and breezy.

For the latest forecast updates, visit [www.weather.gov/pdt](http://www.weather.gov/pdt).

If you have questions or would like to submit weather reports, photos, or to unsubscribe from these briefings, email [pdt.operations@noaa.gov](mailto:pdt.operations@noaa.gov)



## New format

## Weather Risk Outlook

Risk is determined by the weather related impact level AND the likelihood an event will occur

Provide an overview of upcoming weather concerns, including alerting for potential high-impact, low probability events

### Active Weather through the Week

Next update: 17 Dec 2020

#### KEY POINTS

- Another system will move through the area this morning, with moderate mountain snow, lowland rain, and local gusty winds expected, mainly along the coast and San Juan Islands, Admiralty Inlet, and western Whatcom/Skagi Counties.
- Several additional systems will impact the area this week, with each round arriving late Wednesday through Thursday, Friday, and late Saturday through Sunday
- The strongest system of this week is expected to be Saturday-Sunday with locally heavy rain, stronger winds, and rises on many area rivers. Flood potential will need to be monitored.
- An increased threat for landslides may develop this weekend.

#### WEATHER RISK OUTLOOK

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence.

	Wed 9/1	Thu 9/2	Fri 9/3	Sat 9/4	Sun 9/5	Mon 9/6	Tue 9/7
	Mountain Snow High Surf early Locally Windy	Mountain Snow early Locally Windy	Mountain Snow, Lowland Rain Locally Windy	Heavy Rain Locally Windy Rising Rivers	Heavy Rain Locally Windy Rising Rivers	Rising Rivers	
Risk Levels		Little to None	Minor	Moderate	Major	Extreme	

#### DETAILS

##### Cascades and Mountain Passes



Snow

##### Impacts:

Hazardous travel possible in the passes due to moderate snow, especially Thursday morning.

##### Coast and Lowland Locations



River Flooding

##### Impacts:

• Rivers are expected to rise through this week, with increasing potential for possible river flooding over the weekend.



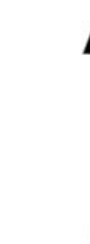
Wind

##### Impacts:

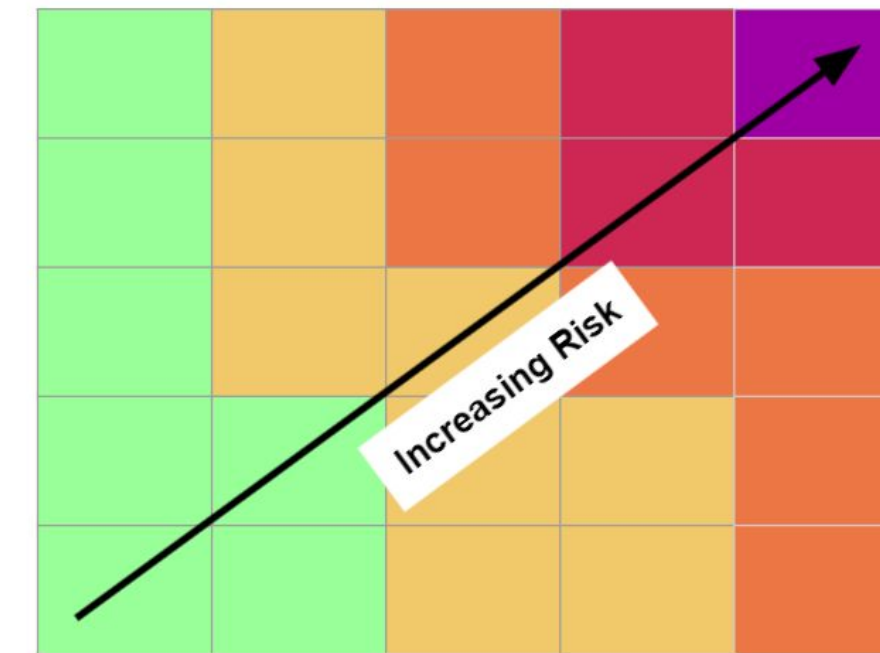
• Localized power outages are possible late Wednesday into Thursday due to locally windy conditions.  
• Localized power outages are again possible at times Friday and Saturday due to locally windy conditions

Very Likely

Likelihood



Unlikely



Little to None

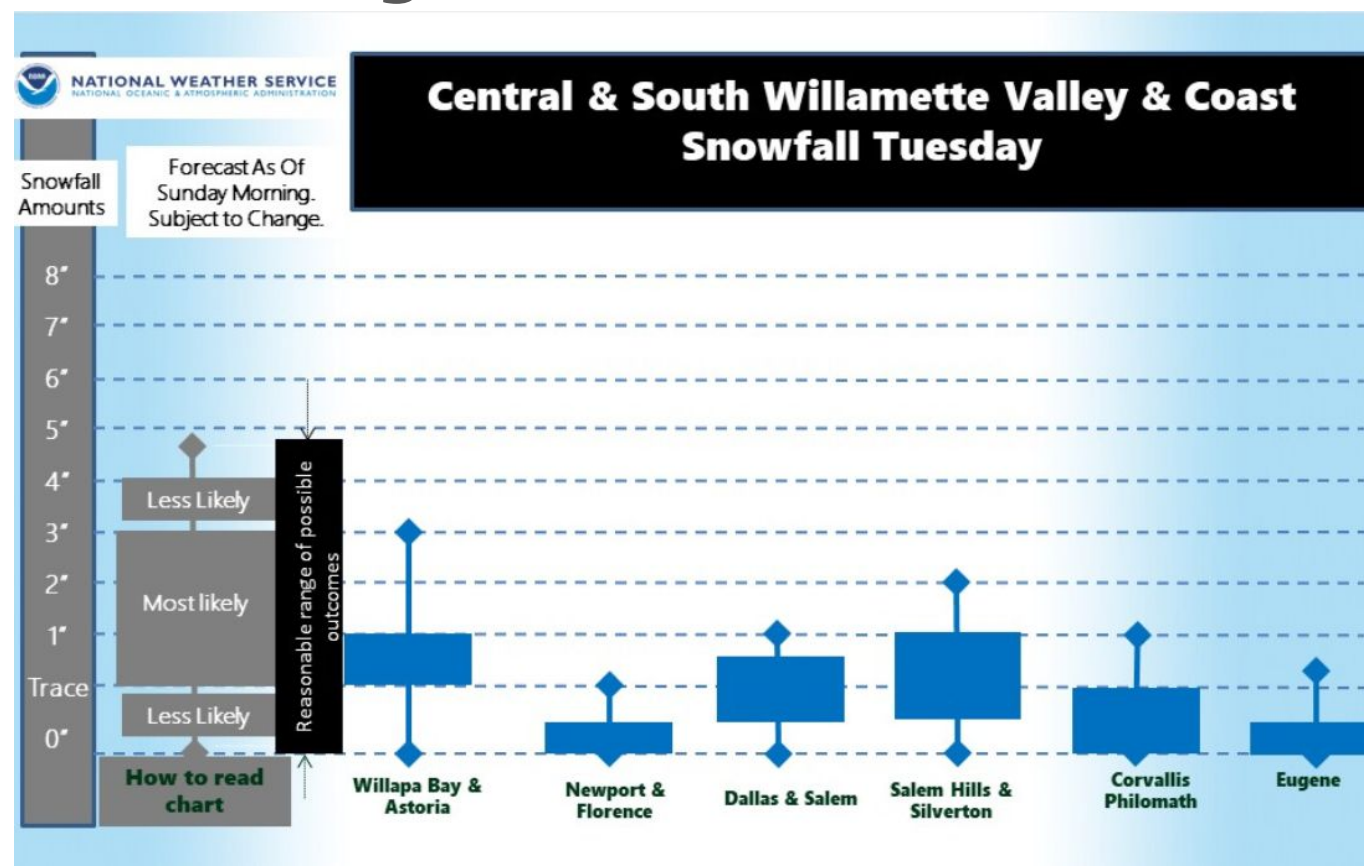
Impacts

Extreme

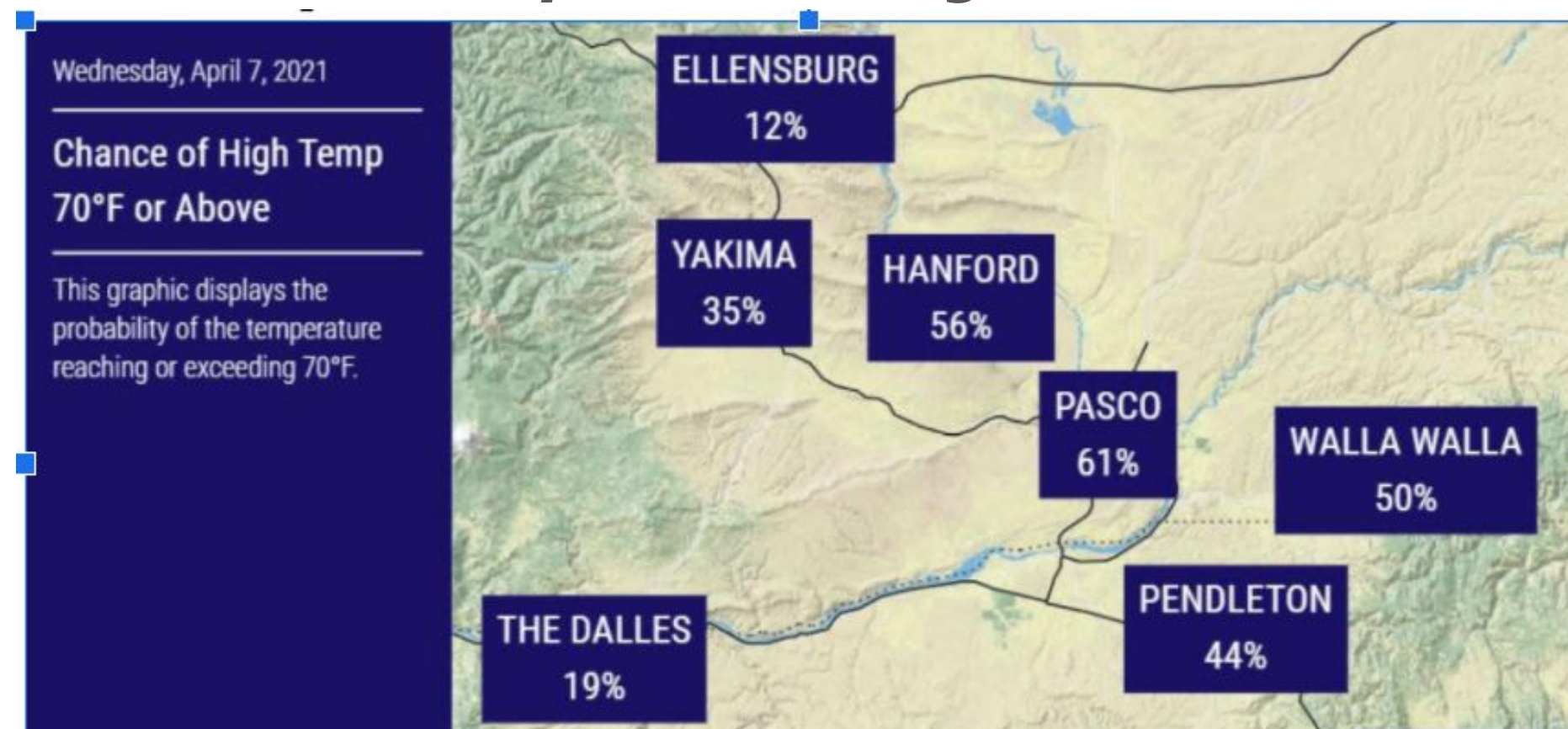




## Range of Potential Values



## Probability of Exceeding a Threshold



**Worst Case, Best Case, & Most Likely outcomes**

Best Case Scenario (10% chance of occurring)



Most Likely Scenario (Official Forecast)



Worst Case Scenario (10% chance of occurring)



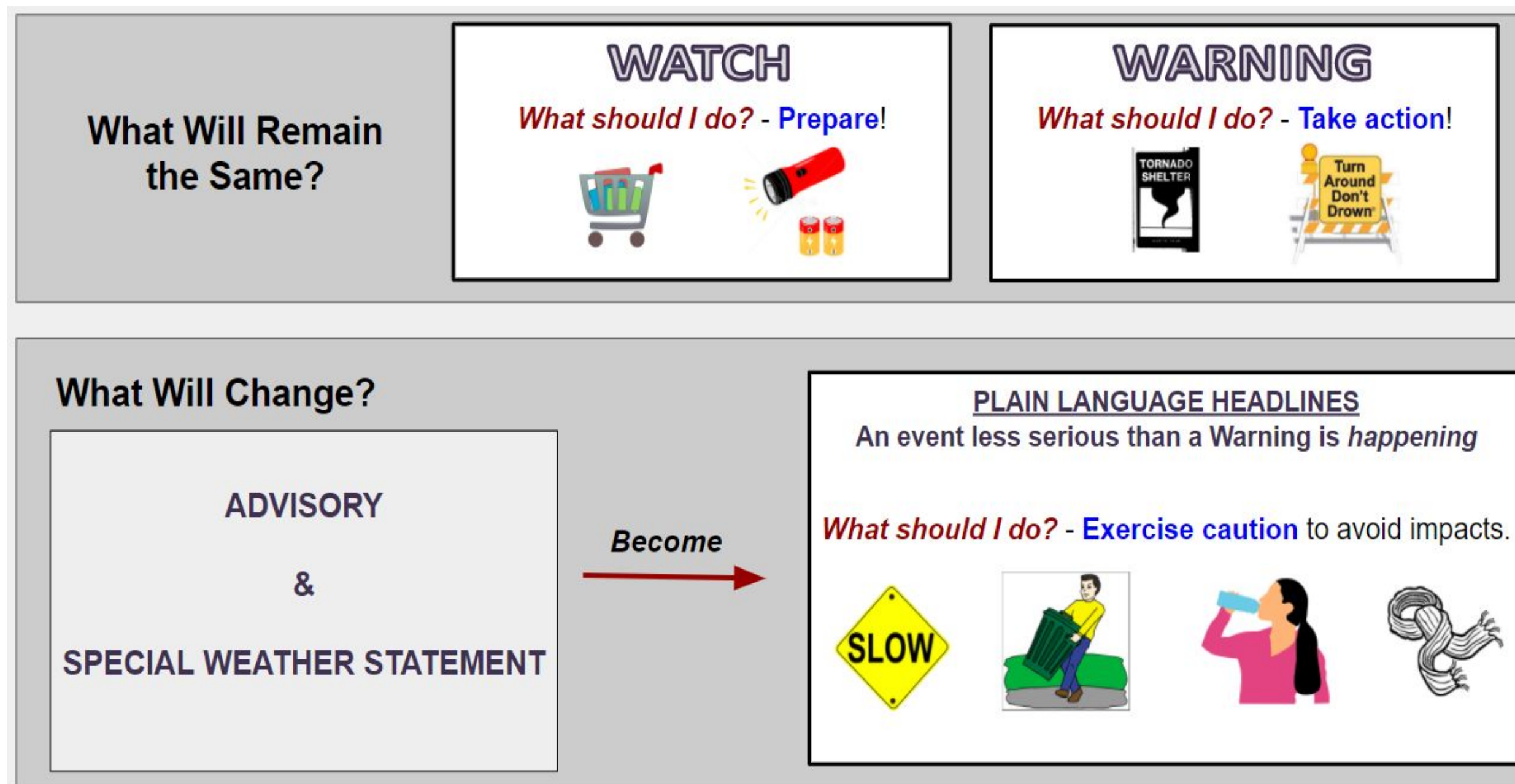


## In-Progress

- Consolidation of products
- Reformatting

## Looking ahead - No earlier than 2024

- Removal of “Advisory” headlines
- Removal of “Special Weather Statements”
- Replaced with plain language headlines



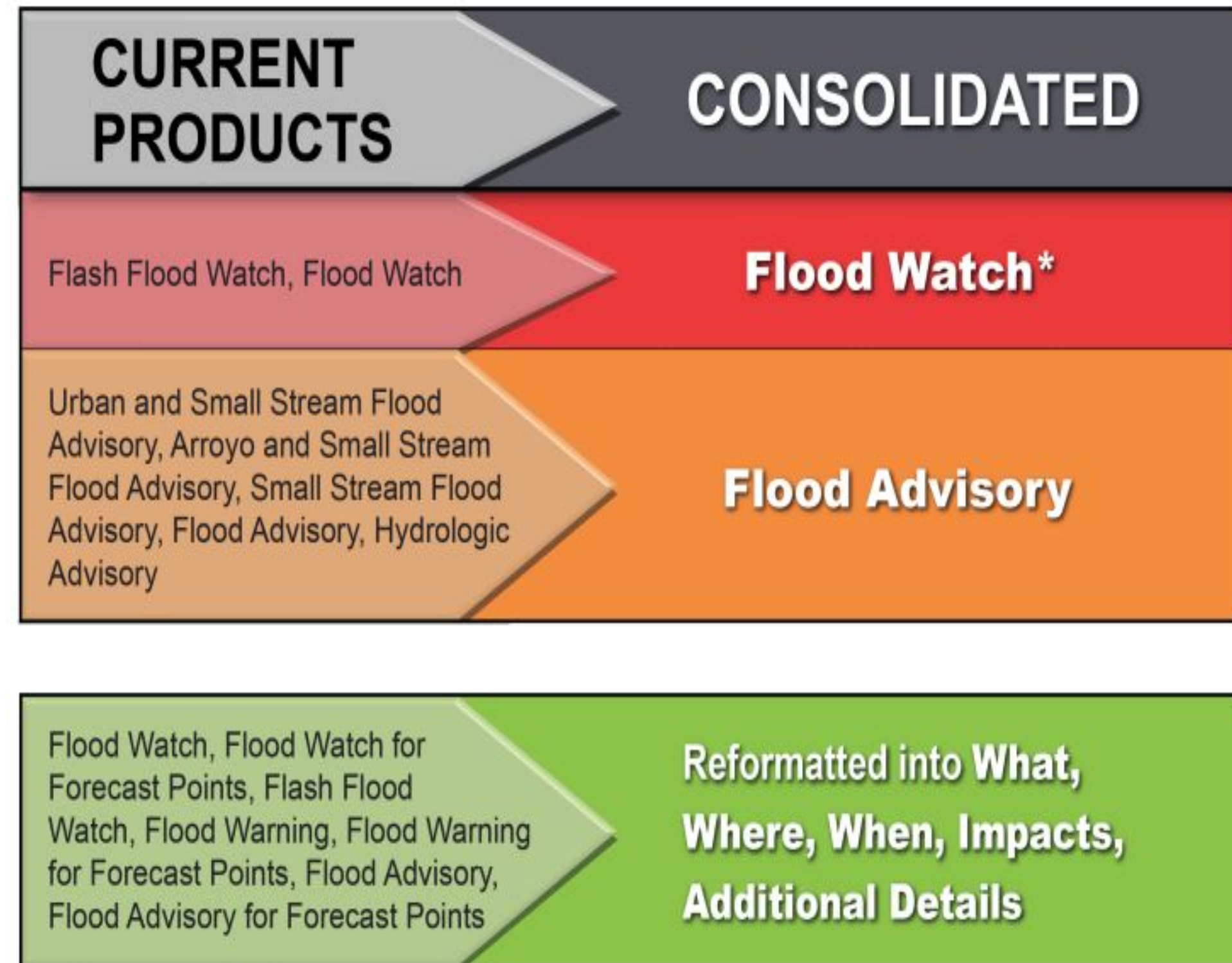




## Flood Products Consolidation

- Streamlining of existing flood watches and advisories into two main types.
- \*Only exception is Flash Flood Watch for possible burn scar or levee/dam break flooding.
- Move to impacts-based format for easier interpretation.
- *Change will likely take place within the next 3 months.*

### What will change?







# Get Involved - Partner Preparedness Initiatives

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

## Working Toward a Weather-Ready Nation



*Only requires a valid email address to sign up.*  
**Visit: [weather.gov/wrn](http://weather.gov/wrn)**



*Tsunami Ready Designation or Tsunami Ready Supporter*  
**[weather.gov/tsunamiready](http://weather.gov/tsunamiready)**



**[weather.gov/stormready](http://weather.gov/stormready)**

*“We can’t stop extreme events from happening. But we surely can come together and find ways to make our societies more dynamically resilient in the face of those threats.”*

NOAA Administrator Dr. Kathryn Sullivan  
American Meteorological Society Annual Meeting  
January 10, 2013





# Oregon NWS Contact Information

Weather Forecast Office  
Portland, OR  
Wednesday, October 20

**nws.portland@noaa.gov**

**503-326-2356** (unlisted 24-hour direct to operations)

**503-326-2340** (administrative line)

**weather.gov/portland & www.nwrfc.noaa.gov**

Facebook: **NWSPortland** Twitter: **@NWSPortland**

Follow-up questions from today: **andy.bryant@noaa.gov**



[nws.portland@noaa.gov](mailto:nws.portland@noaa.gov)



(503) 326-2340



[weather.gov/portland](http://weather.gov/portland)

