

# Basic Weather Spotting for the Inland Northwest

Spring 2021

National Weather Service - Spokane



**NATIONAL WEATHER SERVICE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

# This is a Live Virtual Class

- Voice in Computer - no phone needed - headphones helpful
- All are in listen mode until the end

## New to GoToWebinar? Here's the basics



### the Menu bar

- Audio – tests your volume
- Attendees – all in attendance
- Poll – answer poll questions
- **Questions** – type in a question for the speaker to answer
- **Handouts** – download & print
- Chat – speaker's comments
- Click on the **Hand** to raise
- Click orange arrow to collapse window



# Objectives

- Understand the roles & importance of the Weather Spotter
- Provide accurate and timely reports of severe weather
- Describe your community's severe weather threats
- Properly define a severe thunderstorm and basic thunderstorm structure
- Learn how to prepare and be safe during severe weather

Concentration on Basic weather spotting and the Checklist

Now let's look back to last year.....

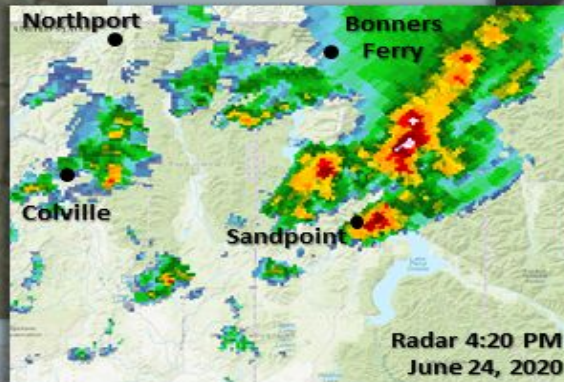




# June 24, 2020 - Severe Thunderstorm Event



Naples, ID



Port Hill, ID



Near Ruby, WA



# May 30, 2020 - Severe Thunderstorm Event



# May 2, 2020 - Thunderstorm & Dust Event



Post Falls, ID



North of Tri Cities



Pullman



Colfax





To our current Weather Spotters....



**THANK  
YOU!**



**SKYWARN**



Eyes and Ears of the  
National Weather Service  
with a count of over 1200  
across the Inland NW!



# New to the program?

## What is a Weather Spotter?

- Weather enthusiast who volunteers time to report severe or hazardous weather
  - As needed basis
  - No weather equipment is necessary
  - Simply call, email or send a report online
  - Become the eyes and ears of the National Weather Service



# National Weather Service (NWS)

- Part of the Federal Government – Dept of Commerce
- Responsible for all weather/water Watches & Warnings
- 126 offices across the country
- Works with local agencies
- Observe & Forecast
- “Behind the Scenes”
- Decision Support
- Preparedness & Education

**Issue Weather and Water watches/warnings  
for the protection of life and property.**



Staffed 24/7

Current office site since 1995

\* 21 Employees

\* Meteorologists

\* Technicians

# NWS Spokane

- Duties

- Observations - Weather Balloon
- Forecasts
  - Aviation, Public, Fire Weather
- Weather Watches & Warnings
- Public Service



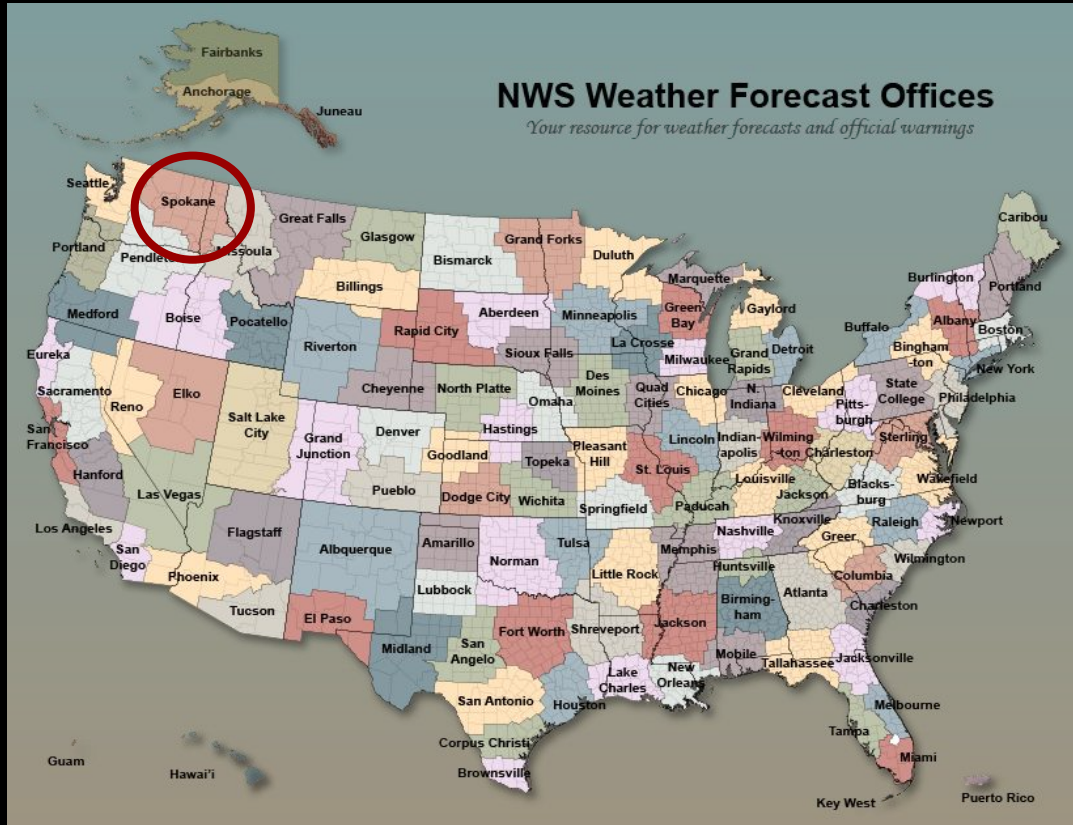
National Weather Service Spokane, WA

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)





# NWS Spokane Forecast and Warning Area

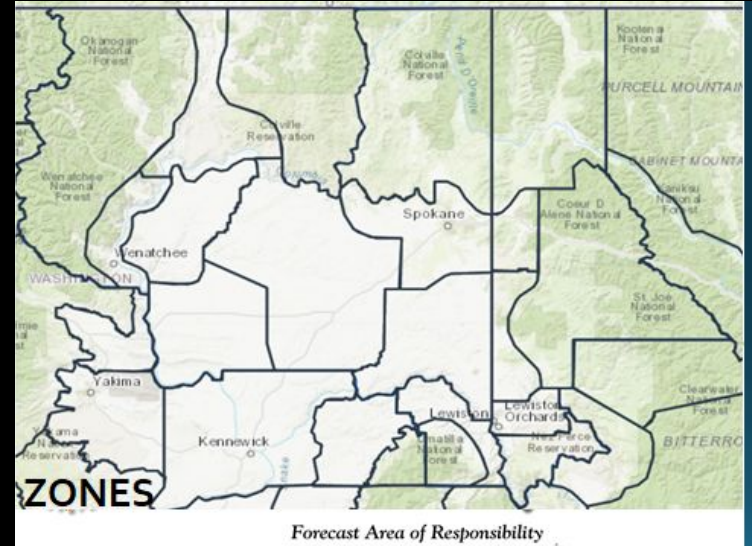


Includes 2 states

- 13 counties in eastern WA
- 8 counties in north Idaho

Elevations range

- 9500+ ft in the north Cascades
- 170 ft along the mid Columbia River



Issue watches/warnings for the protection of life and property



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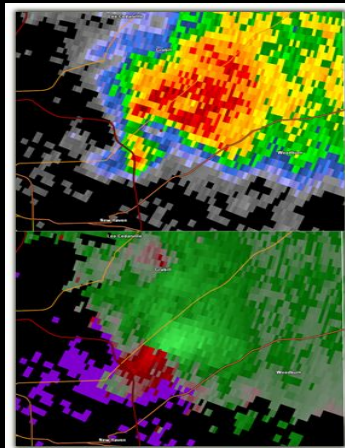
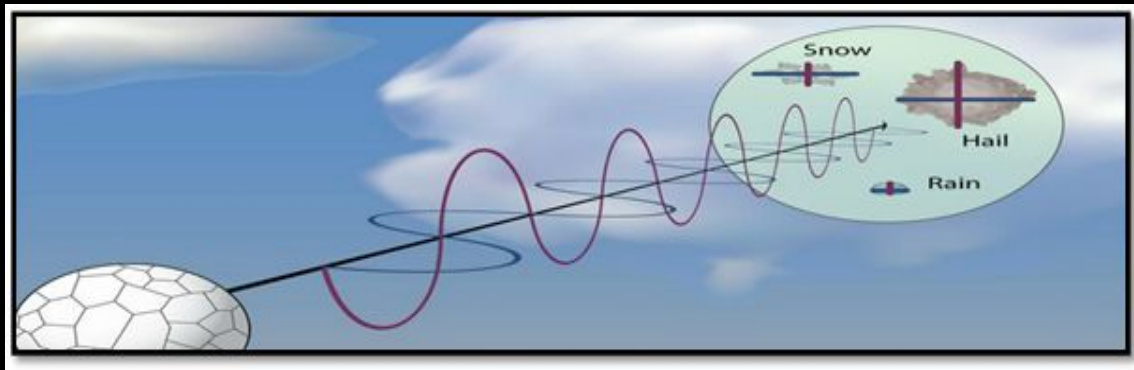
# NWS Observations & Tools



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# Doppler Weather Radar



**Reflectivity (dBZ)**



**Small Particles**

**Light Rain, Dust, Bugs**

**Big Particles**

**Hail, Big Rain Drops**

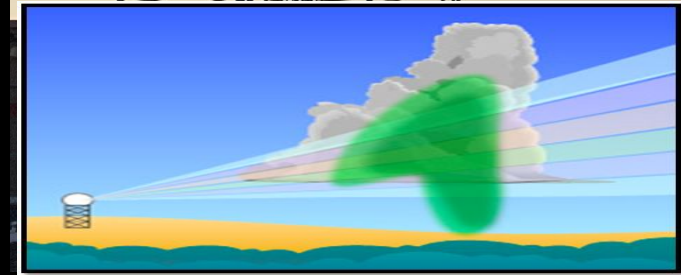
**Velocity (kts)**



**Speed Moving Away from Radar**



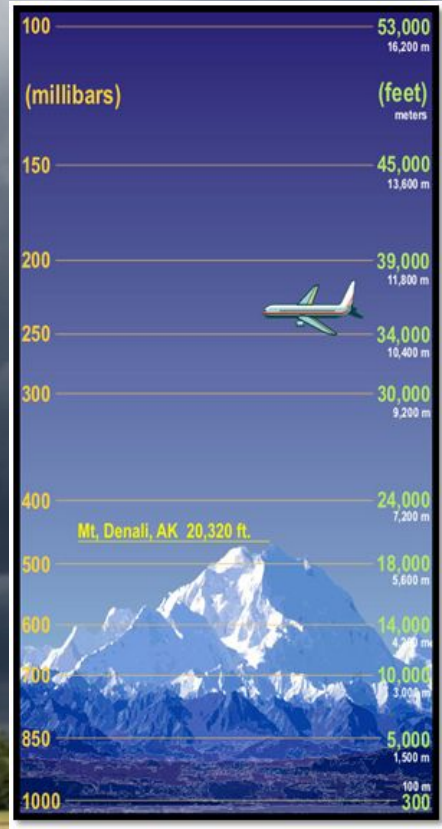
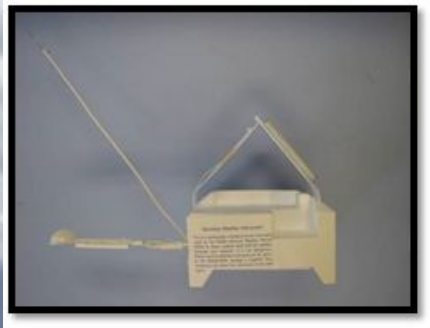
**Speed Moving Toward Radar**





# Weather Balloon - Radiosonde

Twice a day - every day  
92 Upper Air sites across the U.S.  
Flight time ~ 1 hour 45 min



# Weather Satellites

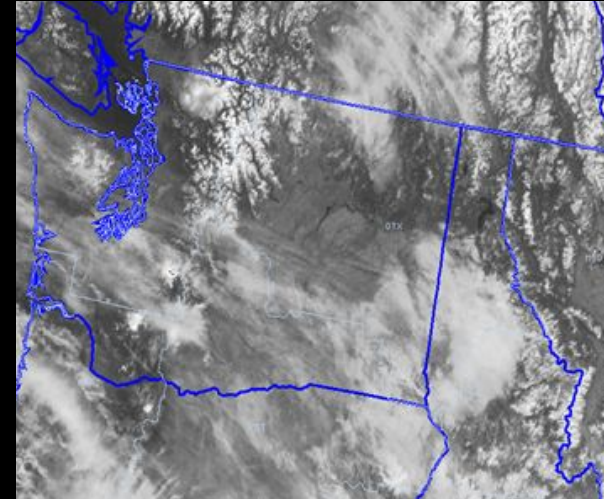
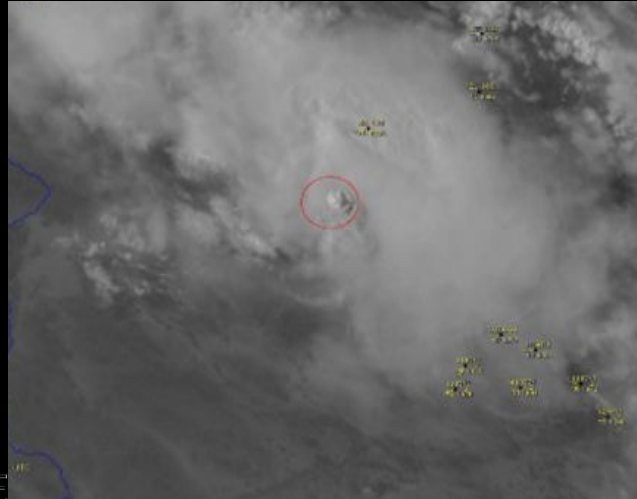
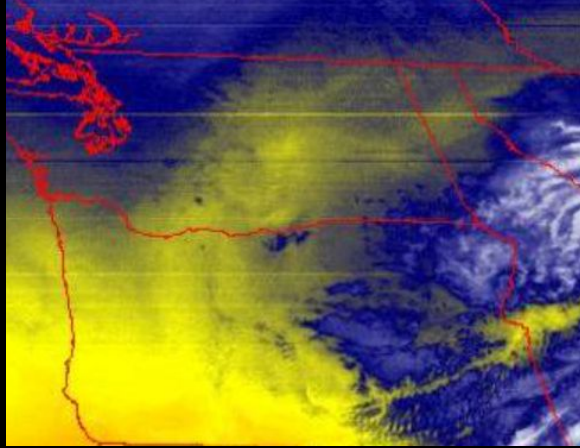
GOES 17 - 16 different channels

IR, Water Vapor & Visible

New images every 5 minutes

Aids in early detection

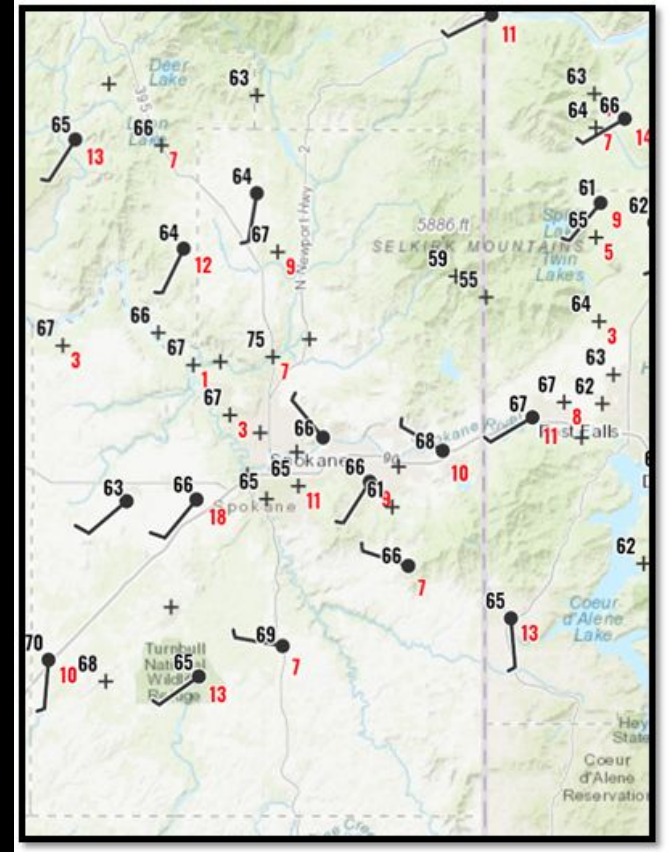
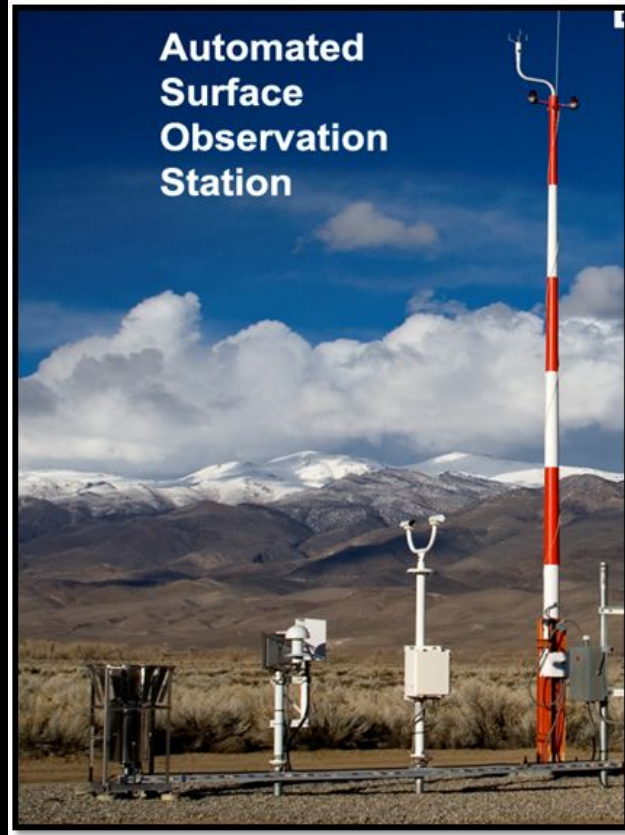
Thunderstorms & Wildfires



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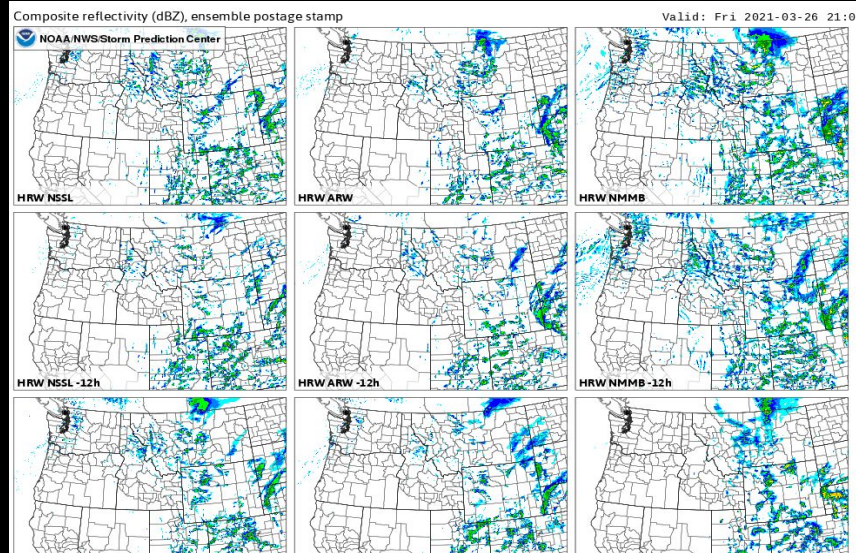
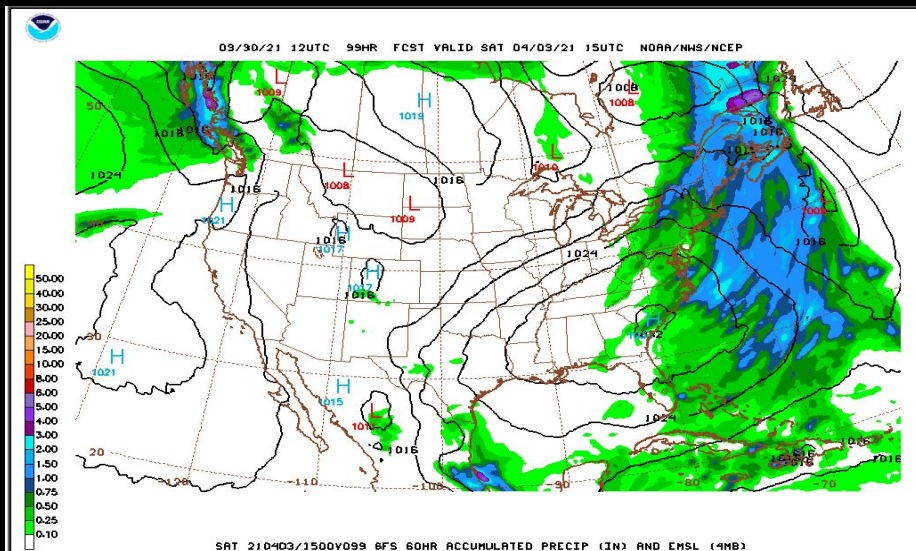


# Surface Observations & Web Cams

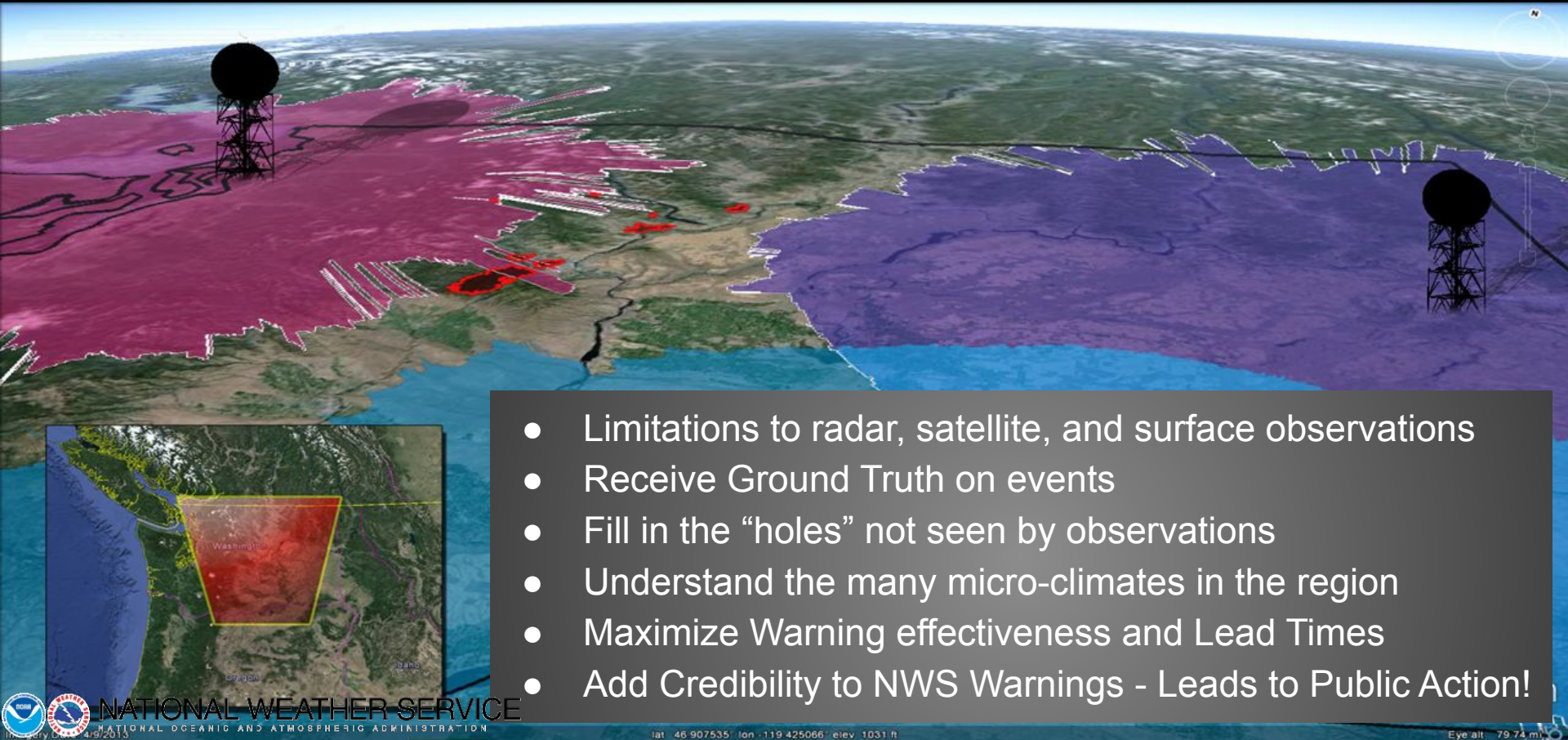




# Supercomputers & High Resolution Models



# We need weather spotters! Why?



- Limitations to radar, satellite, and surface observations
- Receive Ground Truth on events
- Fill in the “holes” not seen by observations
- Understand the many micro-climates in the region
- Maximize Warning effectiveness and Lead Times
- Add Credibility to NWS Warnings - Leads to Public Action!

# #1 Poll Question

What is the role of a weather spotter?





# What's in a Spotter Report?



The checklist is titled "Inland Northwest Weather Spotter Checklist" and features the NOAA logo on the left and the SKYWARN logo on the right. It contains a series of colored boxes, each with a weather event and its reporting criteria:

- Tornado or Funnel Cloud:** ANY Kind
- Strong Winds:** +40 mph/Damage (58mph severe)
- Hail:** +3/4" in diameter (1" severe)
- Heavy Rain:** +1/2" in 1 hr or +1" in 12 hrs
- Flooding:** ANY Kind
- Mixed Precipitation:** freezing rain or sleet
- Snow:** +2" below 3K ft (valleys) or +6" abv 3K ft (mtns)
- Poor Visibility:** 1/2 mile or less
- Travel Problems:** due to weather
- Damage, Injury or Loss of life:** ANY
- Excessive Heat:** ANY
- Excessive Cold:** ANY

- Specifics...Tell us the story!

- Who...What...and Where

*Spotter ID & Location*

- When the event began and/or ended
  - Estimate of wind speed and/or hail size
  - Damage and injury reports

- If unsure - report your uncertainty

- Include reports while traveling & any delayed or second hand reports

# How Spotters Report - Easiest Phone Call



**Dial :**  
**1-800-  
483-4532**  
Spotter ID



**What:**  
Event you  
Witnessed



**Where:**  
Location  
of event



**When:**  
Time of  
the event



# How Spotters Report – Just as easy Online Reports

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)



## Storm Reports

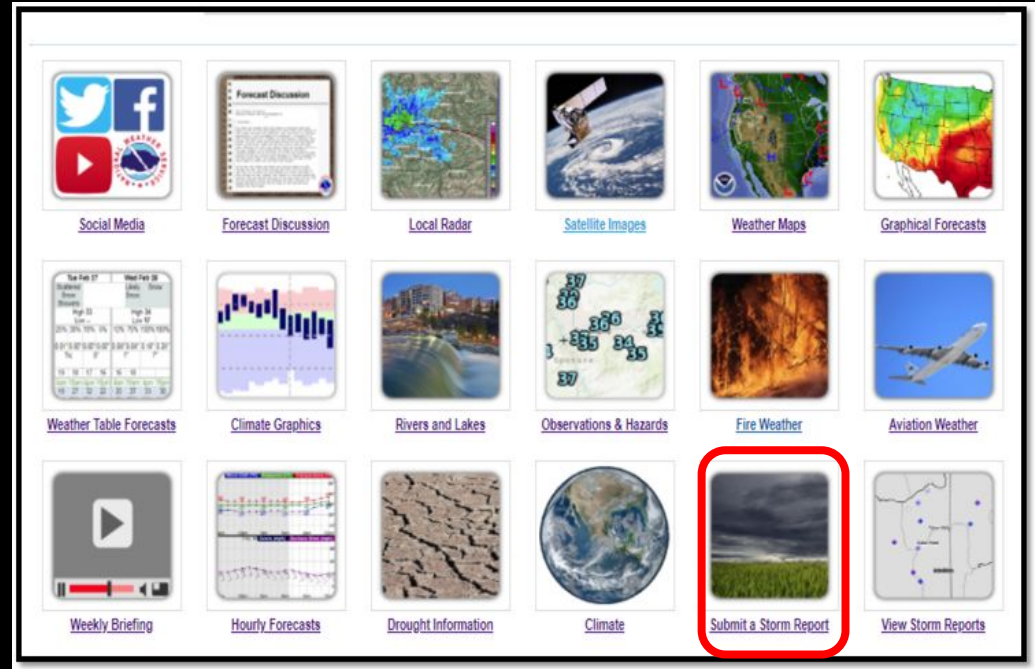
Alerting the NWS to local weather

**Report Type** -> Details -> Location -> Review and Send

Please select a report type ▼

Back Next

[Privacy policy for weather reports](#)





# Share weather data - Social Media

## Twitter

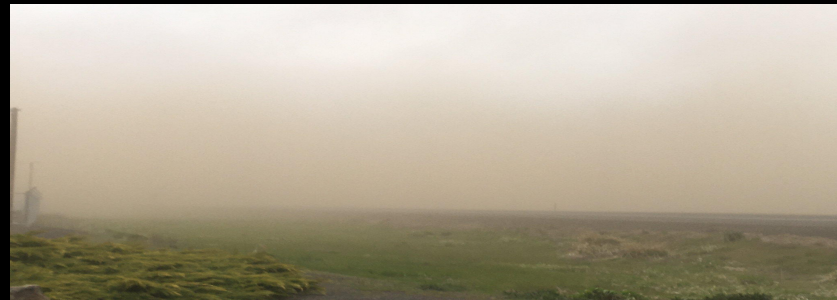


- @NWSSpokane
- #wawx & #idwx
- Share reports & pictures
- Monitored 24/7

## Facebook

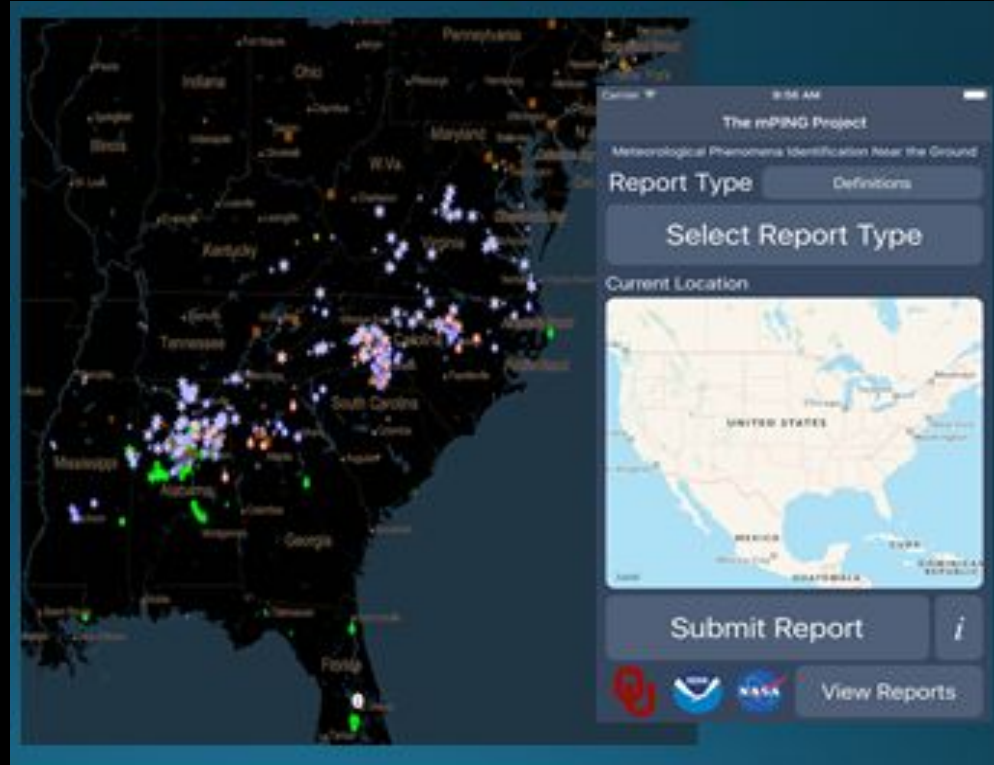


- NWS Spokane
- Send reports & pictures
- Monitored 24/7



# Share weather data - mPING

- Smartphone App
- Available on IOS and Android
- Reports sent to NWS
- Reports are anonymous
- Crowdsourcing
- Very easy to use
- <https://mping.nssl.noaa.gov>



# Share weather data - Email Photos

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



If ARES/RACES Hams, relay report to your central collection point.



National Weather Service - Spokane, WA

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)



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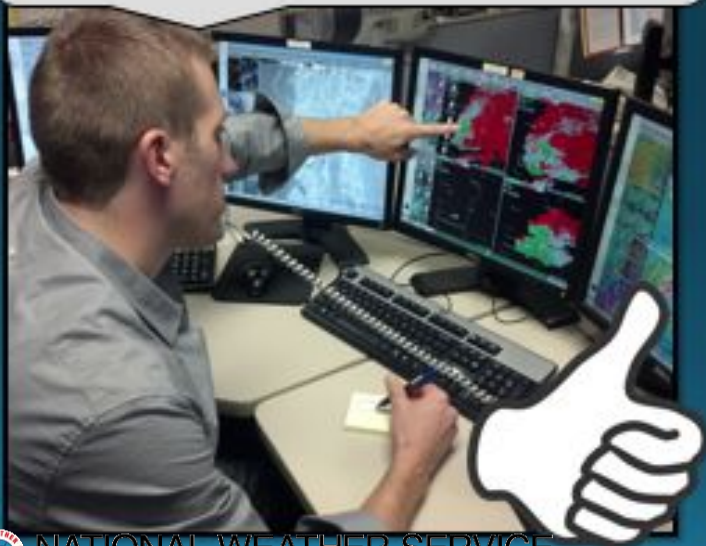




# Examples of Spotter Reports

## Good Spotter Report

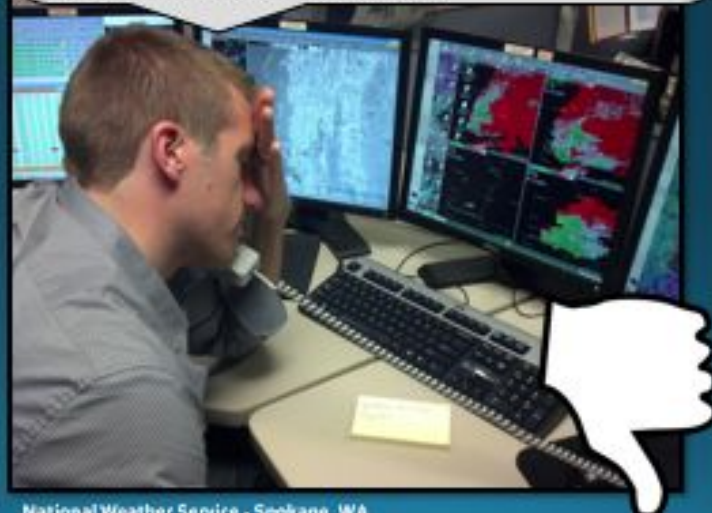
This is Tom Smith, Spotter Spokane #25 calling from my home on the South Hill. There is currently large hail falling. I measured one stone and it's about the size of a quarter. It began about 30 minutes ago.



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## Needs Improvement

Hi there, how are you doing? Who is this? ....Well hi Steve! I'm a spotter in Okanogan County. I see lightning to the north and it rained here a little bit ago. The news is saying it's much worse to the south. Are we going to get another thunderstorm? ....How long is it supposed to last? How's your evening going?



National Weather Service - Spokane, WA

# Keep in Mind – We may contact you

As a registered weather spotter, you'll share your phone number with the NWS.

If we see severe or hazardous weather near your location....

**We will likely try to call and get information on what you are experiencing (ground truth) based on what is seen on radar**



National Weather Service - Spokane, WA

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)



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# Emails are Important

Besides a phone number, it's important to keep emails current.

You will likely be notified the day before/day of by email when there is a WIDESPREAD Severe Weather Risk/Thunderstorm Outbreak

We send periodic emails to alert you of the quarterly newsletter and upcoming training opportunities.



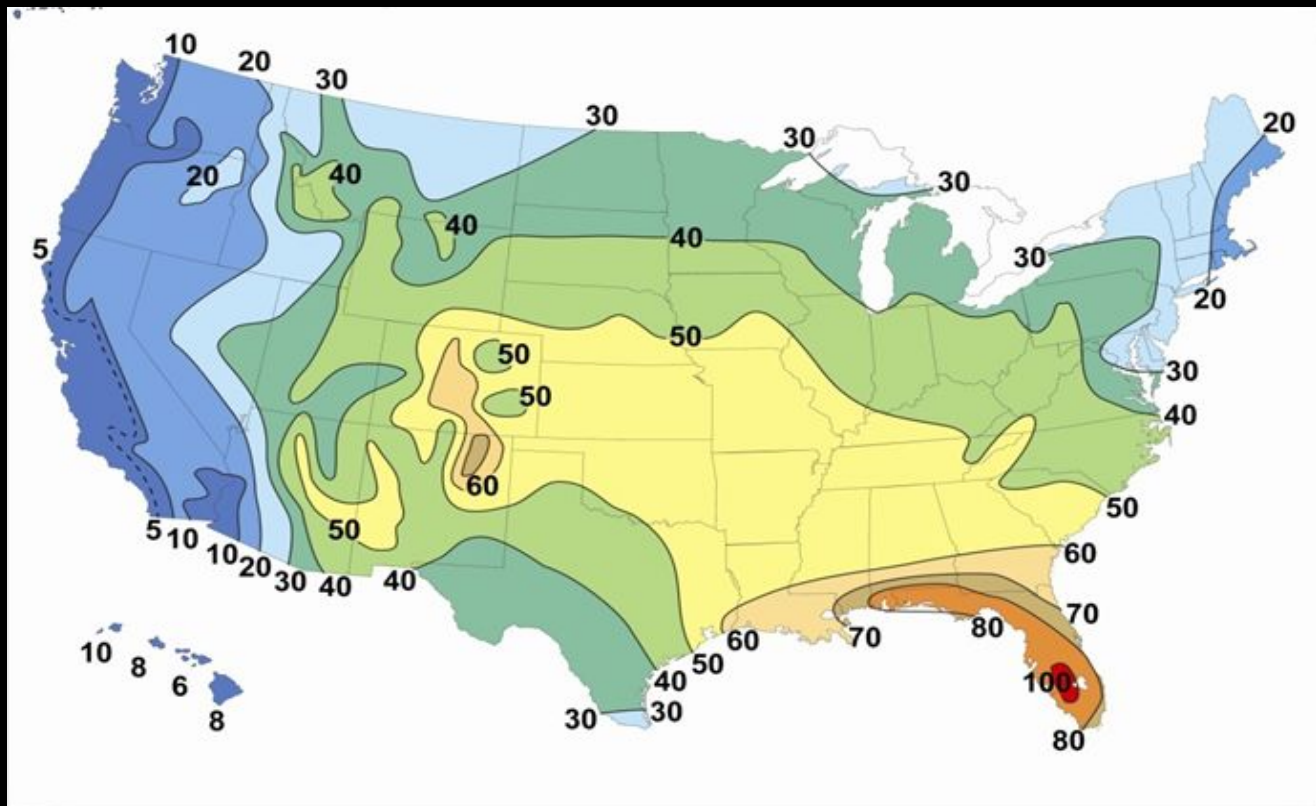


# #2 Poll Question

What is necessary to give in a spotter report?



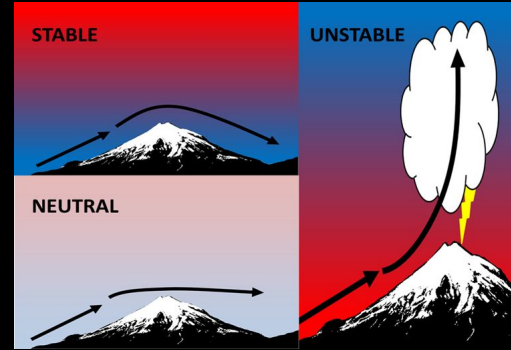
# Average Annual Thunderstorm Days



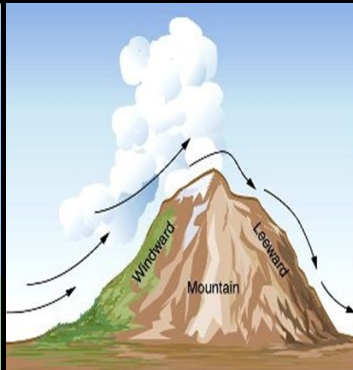
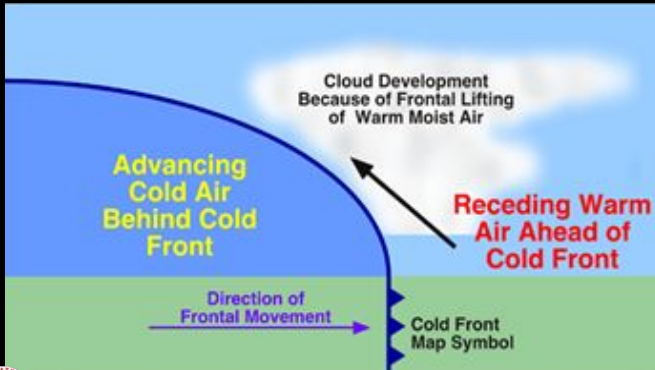
# Thunderstorm Ingredients



Moisture



Instability



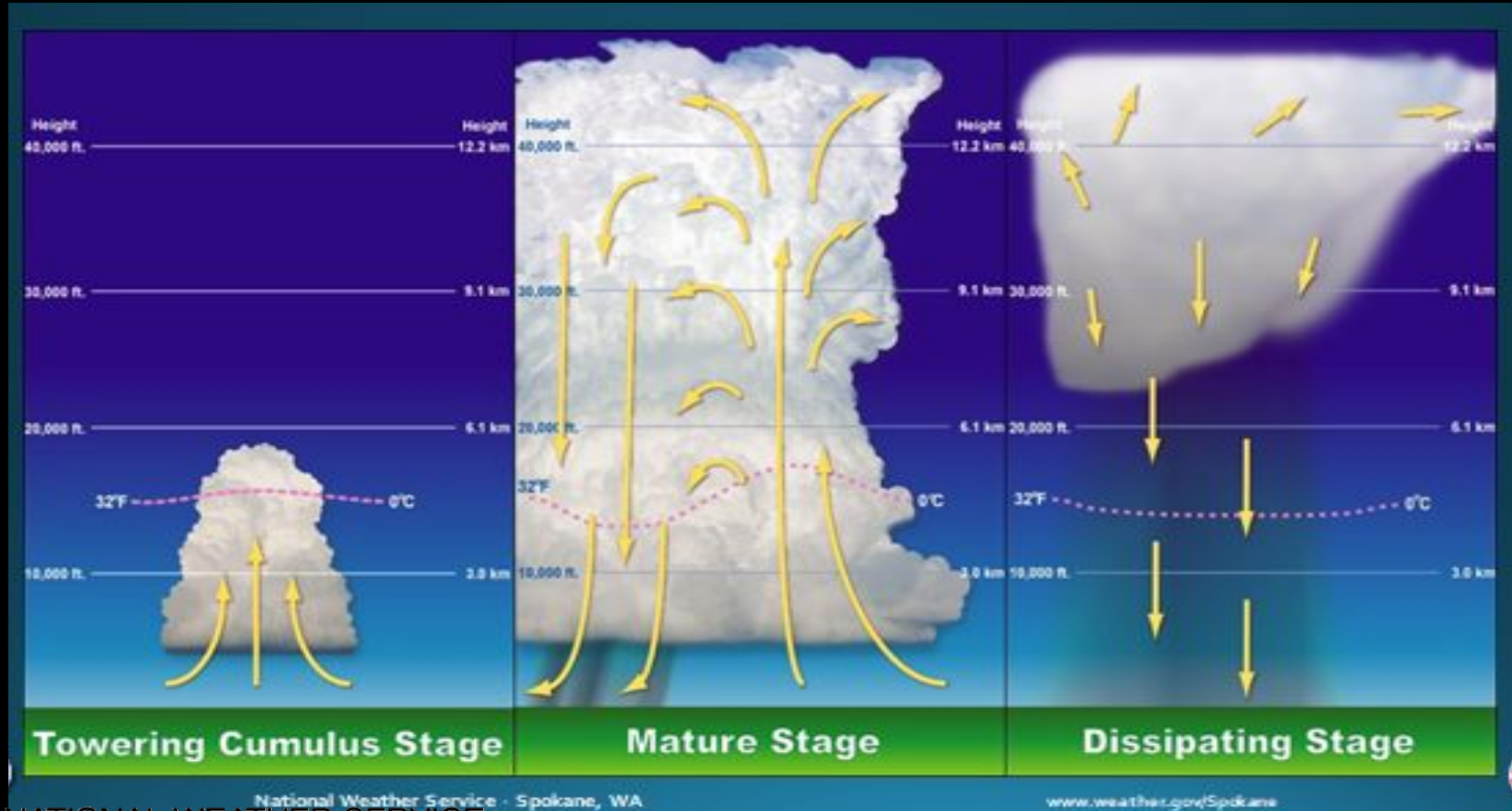
Lift



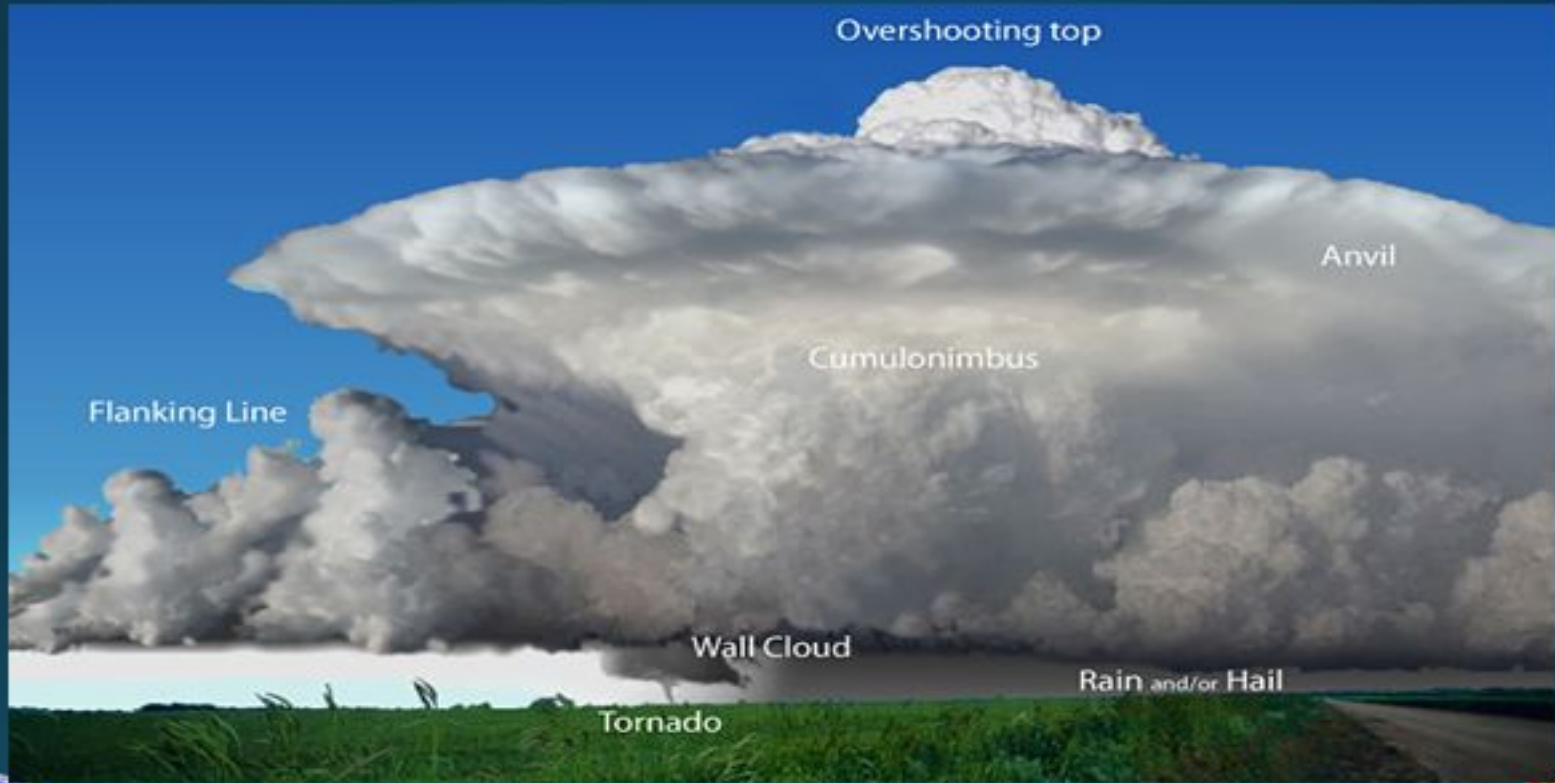
Vertical Wind Shear



# Stages of a Thunderstorm



# Anatomy of Thunderstorm



National Weather Service Spokane



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# What is a Severe Thunderstorm?

**Winds  $\geq$  58 mph or Wind Damage**



**Hail  $>$  1" in diameter**



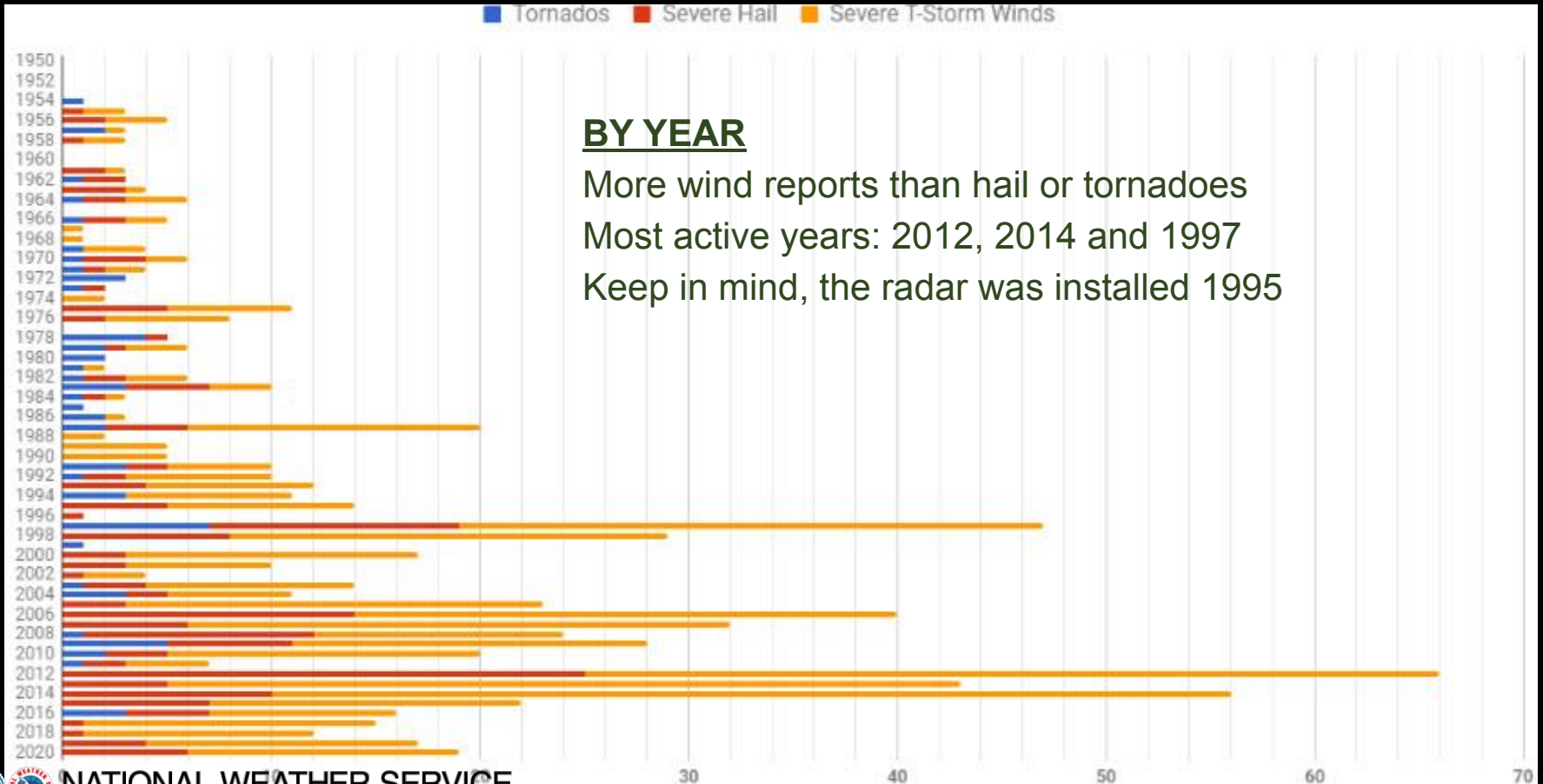
**Tornado**



- Less than 10% of all thunderstorms are Severe
- Though Lightning is ALWAYS extremely dangerous, the amount of lightning does not make a storm SEVERE.



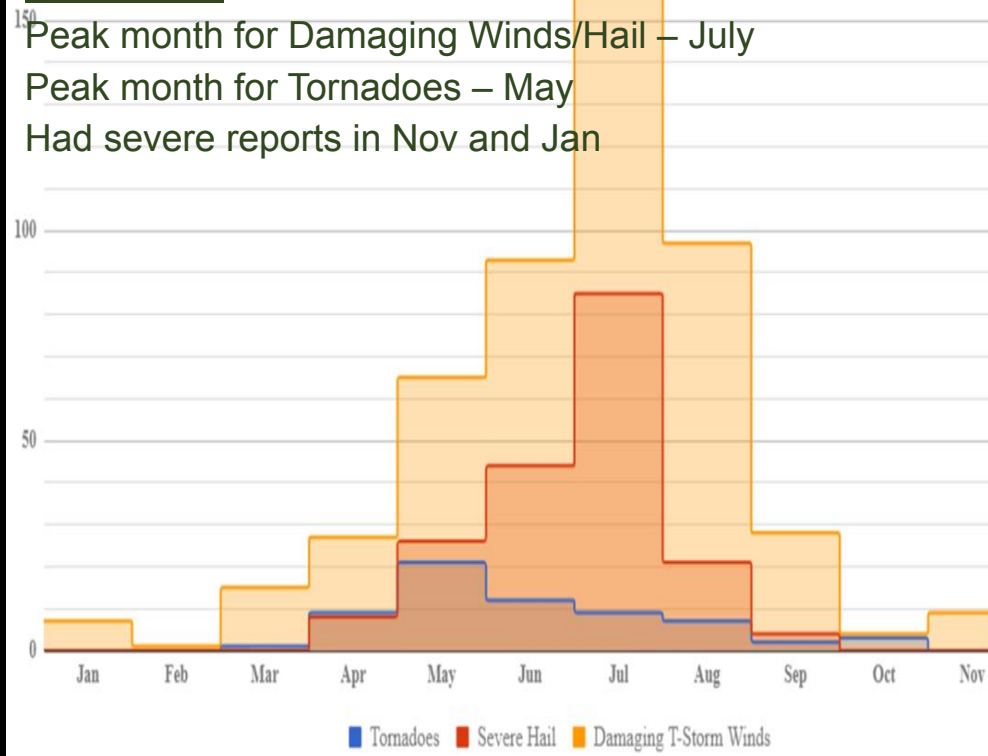
# Local Severe Weather Climatology



# More Local Severe Weather Climatology

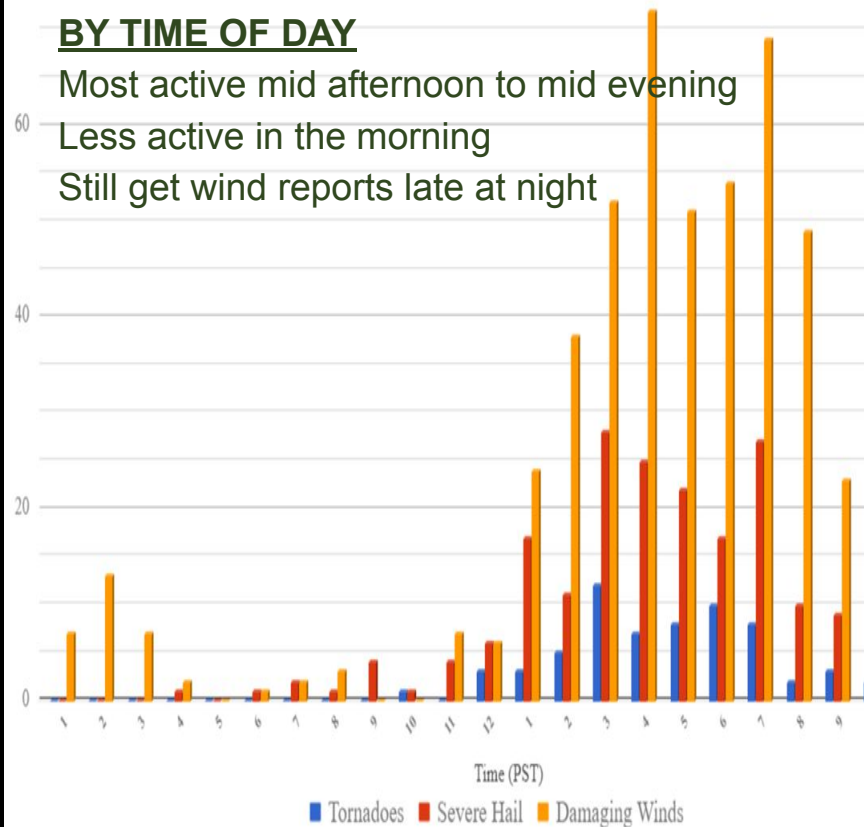
## BY MONTH

Peak month for Damaging Winds/Hail – July  
Peak month for Tornadoes – May  
Had severe reports in Nov and Jan



## BY TIME OF DAY

Most active mid afternoon to mid evening  
Less active in the morning  
Still get wind reports late at night



# #3 Poll Question

What makes a thunderstorm severe?





# Tornado

A violently rotating column of air, attached to a thunderstorm and touching the ground.

## Typical Inland NW Tornado

- Less than 5 minutes on the ground
- 100 yards in diameter
- ¼ mile track
- Max wind speeds of 85-115 mph
- Mostly EF0 to EF1

Mold - July 2016



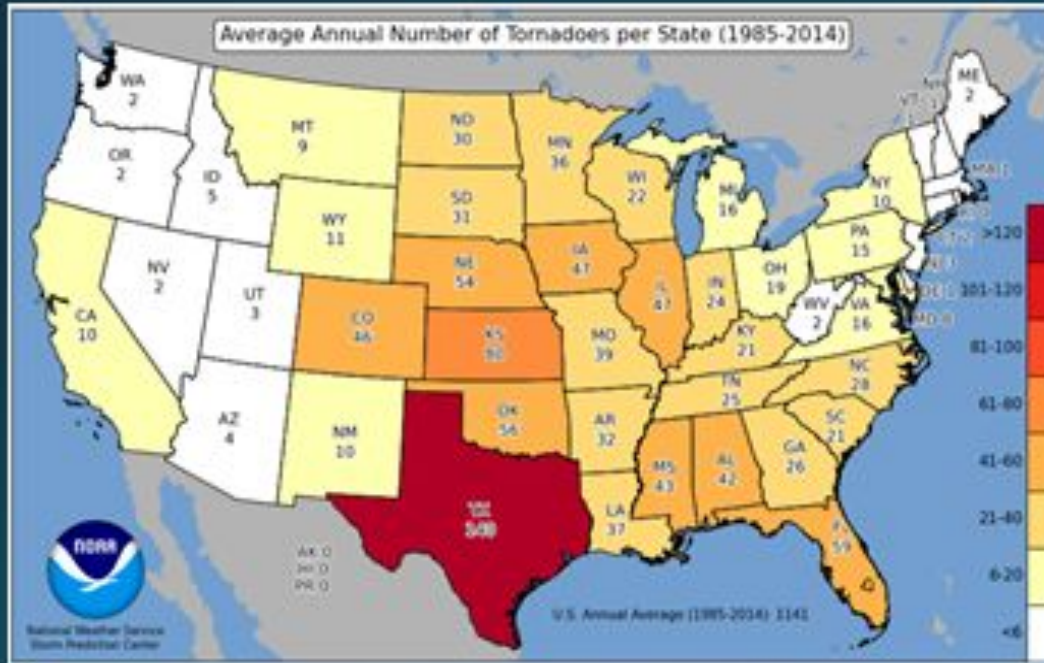
Airway Heights - May 2004

Spokane - July 2016



# How are tornadoes measured?

## The Enhanced Fujita Scale

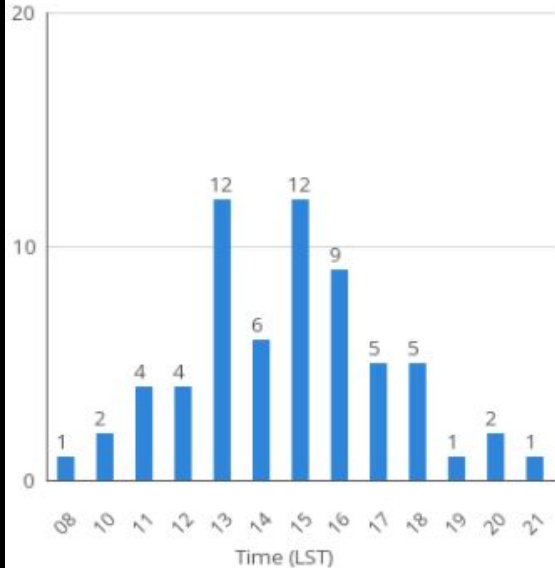


EF-Scale	Speed
EF0	65-85 mph
EF1	86-110 mph
EF2	111-135 mph
EF3	136-165 mph
EF4	166-200 mph
EF5	>200 mph

# Inland NW Tornado Stats ~ 64 reports (1936-2016)

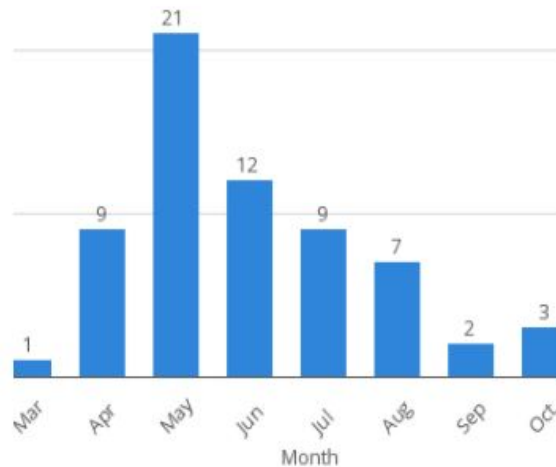
## Tornadoes by time of day

Total number of tornadoes by time of day



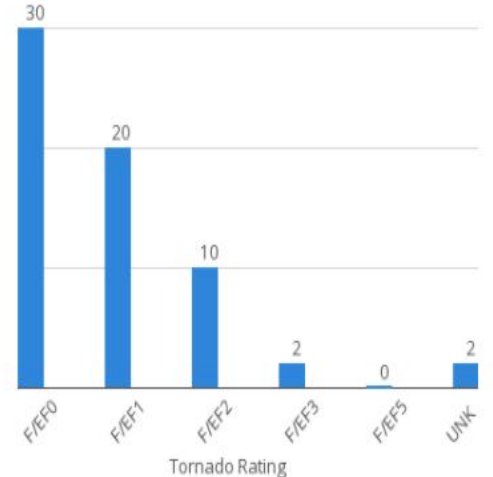
## Tornadoes by month

Total number of tornadoes by month



## Tornadoes by rating

Total number of tornadoes by RATING from 1936 to 2016





# What about Funnel Clouds & Dust Devils?

- Funnel clouds stay aloft attached to storm cloud
- Dust devils start at the ground and extend upward
- Tornadoes extend from storm cloud to the ground
- In doubt, check for cloud cover and debris on ground
- Take a picture and share!



# Cloud Types

Scud clouds - ragged



Cumulus



Towering Cumulus



Wall cloud – lowering cloud base/ rotation



Stratus – stable clouds, hugs mountains



# #4 Poll Question

Identify this cloud.





# Strong or Damaging Winds

- Strong downburst winds or straight line winds
- Can be convective or sustained strong winds
- Report any winds estimated to be over 40 mph
- Winds that product any damage
  - Downed trees, power lines, structure damage
- Remember, severe/high winds  $\geq$  58 mph



Windstorm 2015



April 27, 2019



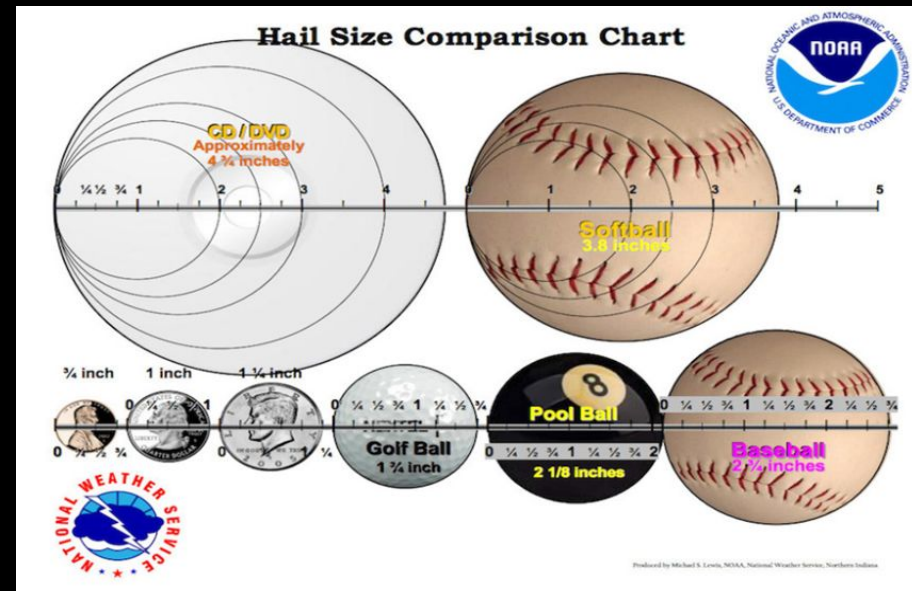
January 13, 2021

Beaufort Wind Chart – Estimating Winds Speeds

Beaufort Number	MPH		Terminology	Description
	Range	Average		
0	0	0	Calm	Calm. Smoke rises vertically.
1	1-3	2	Light air	Wind motion visible in smoke.
2	4-7	6	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	11	Gentle breeze	Leaves and smaller twigs in constant motion.
4	13-18	15	Moderate breeze	Dust and loose paper is raised. Small branches begin to move.
5	19-24	22	Fresh breeze	Smaller trees sway.
6	25-31	27	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult.
7	32-38	35	Near gale	Whole trees in motion. Some difficulty when walking into the wind.
8	39-46	42	Gale	Twigs broken from trees. Cars veer on road.
9	47-54	50	Severe gale	Light structure damage.
10	55-63	60	Storm	Trees uprooted. Considerable structural damage.
11	64-73	70	Violent storm	Widespread structural damage.

# Hail

- Strong updraft keeps chunks of ice aloft
- Circulated within a storm and collects layers of water and freezes
- Can fall to the ground at  $> 100$  mph
- Severe hail  $\geq 1$ " diameter
- Always report the largest Hailstone you see in the pile.



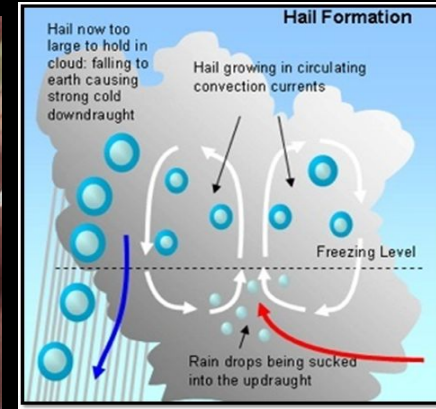
Naples, ID - May 2020



July 2019 - Metaline, WA



Spokane -  
July 2016





# Heavy Rain

Report heavy downpours or long periods of steady rain  
Give specific locations - streets and creeks

- 0.50"+ in 1 hour - convective
- 1.0" in 12 hours or 1.5"+ in 24 hours - stratiform





# Flooding and Flash Flooding

Rising water on rivers, streams & low lying areas

Give specific locations of streams & streets



Wenatchee - Sept 2019



Williams Flats Fire Flood - Aug 11, 2019



Moscow - April 2019



**Turn Around, Don't Drown**



April 9, 2019 - Pullman



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# Mud and Debris Flows

Water-saturated rock, mud and debris moving down a slope

Give specific locations, roadways or intersections

Post-fire Floods





# Dust Storms

- Prolonged dry spell + strong winds + plowed fields
- Sudden reduction in visibility
- Give locations of roads and intersections
- Also called Haboobs
- If widespread, can lead to air quality issues
- Keep in mind - Smoke can limit visibilities as well.

April 27, 2020 - Dusty



Harrington - Aug 2014



April 11, 2020 - Ritzville



Harrington - Aug 2014



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# Lightning

Close Enough to Hear Thunder,-  
Close Enough to be Struck!

- Lightning can strike as far as 10 miles from the thunderstorm.
- More than 50% of lightning deaths occur AFTER the storm has passed

## When Thunder Roars, Go Indoors

Seek Safe Shelter indoors - or vehicle if needed  
Stay away from windows & doors  
Don't use a corded phone or take a bath/shower



Spokane, WA April 2017



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June 2019 - Spokane



Ritzville - May 2020

# Spotter Safety

- Personal Safety is the Primary Objective of every spotter
- Protect You and Your Family First
- Do NOT put yourself in harm's way
  - Don't walk or drive over obstructions as flooded roads or downed power lines
  - Don't put yourself under objects that have the potential to fall or be blown over
- **ACES - Awareness, Communication, Escape Route and Safe Zones**



# Tornado Safety Tips

East Wenatchee - May 2004



## OUTSIDE

- People in open rural areas may be able to drive away from a distant approaching tornado
- If tornado is unavoidable, seek shelter in strong building or ditch
- Do not ride out tornado in auto!

**Treat Severe Thunderstorm or High Wind Warnings Seriously! Straight line winds can be as Destructive as a Tornado**

## INSIDE

- Seek shelter in a strong building
- *Underground shelter & "safe room" is the best*
- Otherwise small interior room on lowest floor (bathroom or closet, cover yourself)
- Stay away from windows!!!
- Abandon mobile homes!





# Flash Flood Safety Tips



- Do not cross a flooded roadway!!!
- Do not walk/hike/stand near flood waters!
- Be patient, wait for water to recede, or find an alternate route.
- Are you in a low-lying area that is flood prone? Seek higher ground.
- 2 Feet of Flowing water will carry away most vehicles
- Keep in mind, flooding may occur many miles away from the thunderstorm/source

**Turn Around, Don't Drown!**



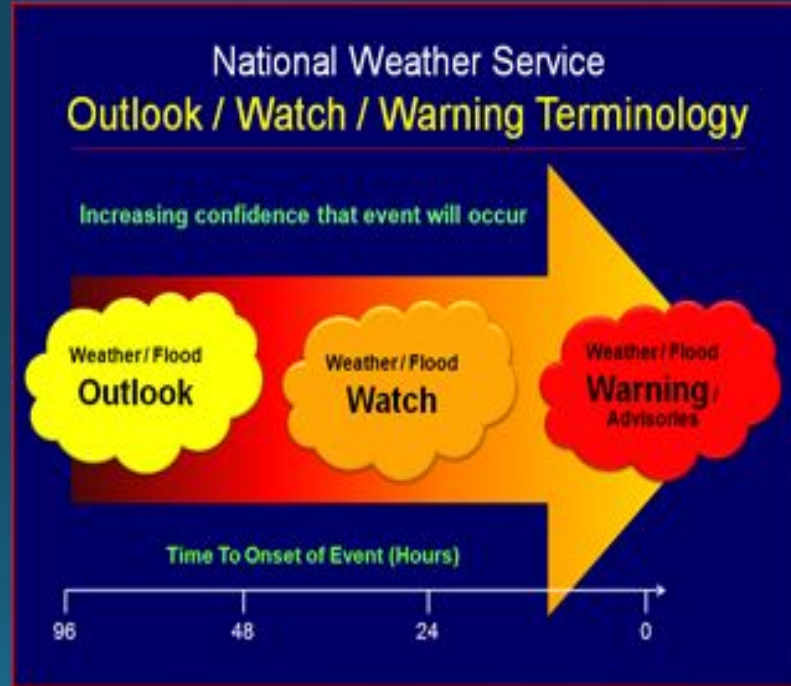
# #5 Poll question

Where is a safe place to go during a thunderstorm?



# Stay Informed - NWS Terminology

- **Watch:** Conditions are favorable, but not imminent, for severe weather or flooding
- **Warning:** Severe weather or flooding is imminent or already occurring
- **Advisory:** Minor nuisance or inconvenient weather or flooding is expected, but in most cases not anticipated to adversely affect plans.



## Short fused

Tornado  
Flash Flood  
Severe  
Thunderstorm

## Long fused

High Wind  
Flood  
Winter Storm  
Red Flag








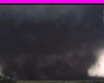
# Stay Informed

National Storm Prediction Center

[www.spc.noaa.gov](http://www.spc.noaa.gov)

Thursday, 4/22/2021

## Understanding Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with all thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					

\* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.

National Weather Service  
[www.spc.noaa.gov](http://www.spc.noaa.gov)

SPC DAY 3 CATEGORICAL OUTLOOK  
ISSUED: 0725Z 04/20/2021  
VALID: 1200Z Thu 04/22 - 1200Z Fri 04/23  
FORECASTER: GLEASON  
NOAA/NWS Storm Prediction Center, Norman, Oklahoma


Categorical Outlook Legend:

TSTM	1: MRGL	2: SLGT
3: ENH	4: MDT	5: HIGH

# Stay Informed

## NWS Spokane Web Page

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)

**NATIONAL WEATHER SERVICE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION


HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Local forecast by  
City, ST or ZIP code  
  
  
[Location Help](#)


**News Headlines**

- [Spring 2021 Virtual Weather Spotter Training...Register Here!](#)
- [NOAA Weather Radio Technical Issues - Degraded service at Mt Spokane transmitter](#)
- [Weather Watcher Quarterly Newsletter - Spring 2021](#)


**MY FORECAST**  
Spokane WA



Clear  
**46°F**  
8°C [Get Detailed info](#)

Today  


Sunny  
High: 59°F

Tonight  



Mostly Clear  
Low: 33°F [change location](#)

**NWS Forecast Office Spokane, WA**  
[Weather.gov](#) > Spokane, WA






Spokane, WA  
Weather Forecast Office

Current Hazards Current Conditions Radar Forecasts Rivers and Lakes Climate and Past Weather Local Programs

Weather this week



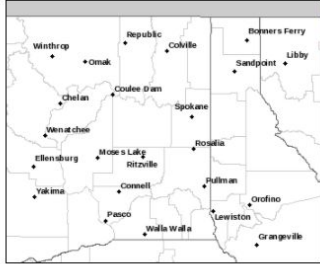
**Seasonal & Settled Before Mid-Week Change** 12531827 4 11 PM - Sunday, April 4, 2021

MON	TUE	WED	THU	FRI
				
50°s - low 60°s	High 50°s ~ 60°s	60°s	50°s - low 60°s	High 40°s ~ 50°s

[Show Caption](#)

**NATIONAL WEATHER SERVICE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Click a location below for detailed forecast.




[Watches, Warnings & Advisories](#)  
There are no watches, warnings, or advisories at this time.


[Zoom Out](#)  
[Zoom In](#)


Last Map Update: Mon, Apr. 5, 2021 at 10:44:15 am PDT

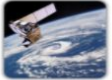
Text Product Selector (Selected product opens in current window)


Latest Text Products Issued by OTX

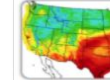
  
Social Media


  
Forecast Discussion

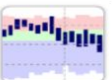
  
Local Radar


  
Satellite Images


  
Weather Maps


  
Graphical Forecasts


  
Weather Table Forecasts


  
Climate Graphics

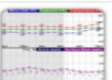
  
Rivers and Lakes


  
Observations & Hazards


  
Fire Weather


  
Aviation Weather

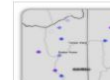
  
Weekly Briefing

  
Hourly Forecasts

  
Drought Information

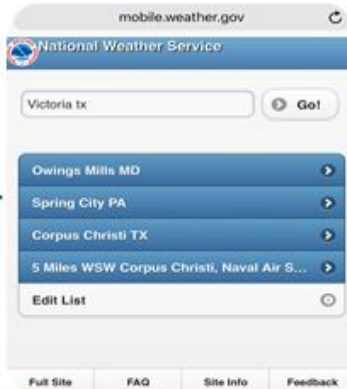
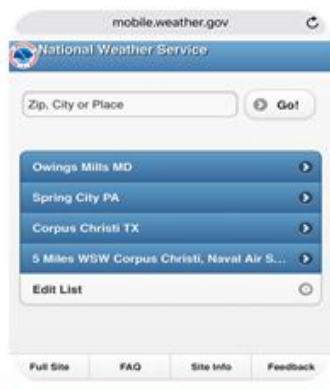
  
Climate

  
Submit a Storm Report

  
View Storm Reports

# Stay Informed On your Smartphone

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



Mobile.Weather.gov  
Smart Phone Enabled

Type in desired location  
Hit 'Go'

Up pops current  
conditions, hazards, and  
forecast

Can add this website to  
your 'Home' screen for  
quick access

Home Screen

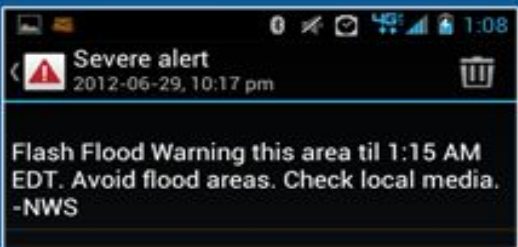


NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



# Stay Informed

## Wireless Emergency Alerts (WEA)



### Alert Categories

- Presidential
- Imminent threat to life and property (e.g., severe weather, HazMat, earthquake)
- AMBER Alert/child abduction

### Alert Message Content (90 characters)

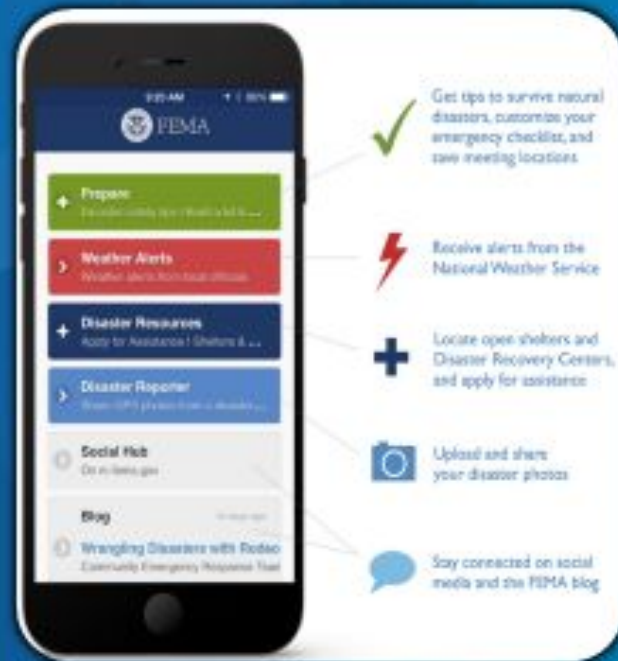
- What is happening
- Area affected
- Til time
- Recommended action
- Alert originator

Warning Type	
Tsunami Warning*	
Tornado Warning	
Extreme Wind Warning	
Hurricane Warning	
Typhoon Warning	
Flash Flood Warning	
Dust Storm Warning	79

# Stay Informed

## Smartphone Apps

- **FEMA**
  - ALL NWS alerts for up to 5 locations
  - Android, Apple, and BlackBerry
- **Red Cross Apps**
  - Two apps with alerts and safety information (Android and Apple)
  - **Emergency App:** 35 different severe weather and emergency alerts
  - **Tornado App:** Tornado Watch and Warning Alerts
    - Audible siren for Tornado Warnings



# Stay Informed

## NOAA Weather Radio

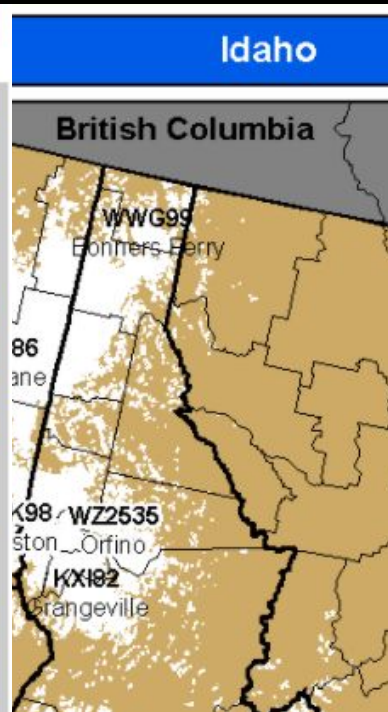
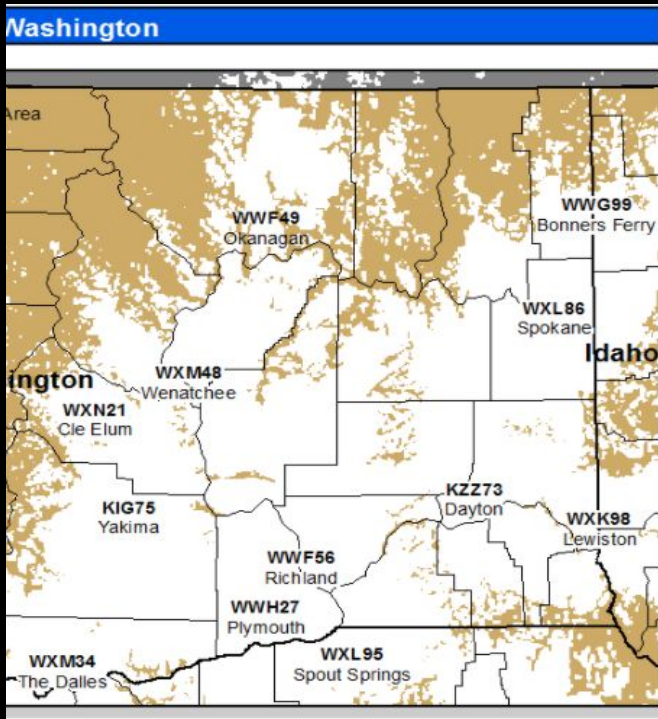


Continuous operation.

Battery backup capable.

Handheld device great for outdoor activities.

Can drive across the country and get info anywhere along path.





# Stay Informed

## Be Prepared - Disaster Kits and Disaster Plans

- **Water**, one gallon of water per person per day for at least three days
- **Food & medicine/prescriptions**, at least a three-day supply
- **Radio**, battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- **Flashlight and extra batteries**
- **First aid kit**
- **Whistle** to signal for help
- **Dust mask** to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- **Moist towelettes, garbage bags and plastic ties** for personal sanitation
- **Wrench or pliers** to turn off utilities
- **Manual can opener** for food
- **Local maps**
- **Cell phone with chargers, inverter or solar charger**



<http://www.ready.gov/kit>

# Other Ways to Get Involved

- ☒ Weather Spotter
- ☐ Join the Community Collaborative Rain, Hail, and Snow Network
- ☐ Join the Citizens Weather Observers Program



# Community Collaborative Rain, Hail and Snow Network - CoCoRaHS

Help Observe Precipitation in your Community

[www.cocorahs.org](http://www.cocorahs.org)

Volunteer take readings once a day - transmit on mobile device

The screenshot shows the CoCoRaHS website homepage. At the top is the CoCoRaHS logo and the text "COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK" with the tagline "Because every drop counts". Below this is a navigation bar with links: Home, Countries, States, View Data, Maps, My Data, My Account, Admin, Logout. A welcome message reads: "Welcome to CoCoRaHS! 'Volunteers working together to measure precipitation across the nations.'" A central box titled "Who uses CoCoRaHS Observations?" contains a table of reports received today (4/22/2020 as of 6:26 PM EDT):

Daily	Multi-day	SigWx	Hail	Condition	ET
10,433	63	5	7	9	51

Below the table is a map of the United States showing precipitation data points. To the right of the map is a legend for "Daily Precipitation (inches x.xx) USA 4/22/2020" with color-coded ranges: Trace (blue), 0.00 - 0.12 (light blue), 0.13 - 0.24 (medium blue), 0.25 - 0.60 (green), 0.61 - 1.44 (dark green), 1.45 - 2.16 (yellow), and 2.17 - 2.55 (orange). Below the map is a smaller map of the United States with state abbreviations. To the right of the main content is a sidebar with links: "JOIN COCORAHs", "TRAINING SLIDE SHOW", "Training Animations", "Things to know about..." (with icons for Rain, Hail, and Snow), "Download on the App Store", and "ANDROID APP ON Google Play". On the left is a "Main Menu" with links: Home, About Us, Join CoCoRaHS, Contact Us, Donate, and a "Resources" section with links: FAQ / Help, Education, Training Slide-Shows, Videos, Condition Monitoring, Evapotranspiration, Soil Moisture, Volunteer Coordinators, Mail Pad, Distribution/Drop-off, Help Needed, Printable Forms, The Catch, Message of the Day, Publications, CoCoRaHS Blog, Web Groups, State Newsletters, Master Gardener Guide, State Climate Series, March Madness, WxTalk Webinars, Sponsors, Links, and CoCoRaHS Store.



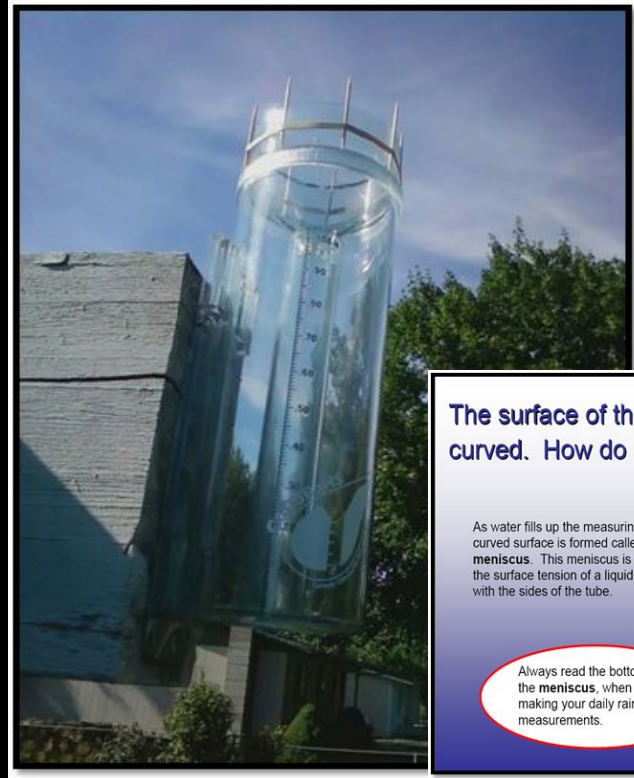
The screenshot shows the CoCoRaHS mobile app interface. At the top is the CoCoRaHS logo and the text "CO-LR-610 Fort Collins 3.5 SW". Below this is the title "Precipitation Report". The form includes fields for "Observation Date" (2015-05-13), "Observation Time" (07:00), and "Rain/Melted Snow" (0.00). There are toggle switches for "Trace Precip" and "Metric Units (mm/cm)". A "Submit" button is at the bottom. The app is running on a device with a status bar at the top showing "Verizon", "2:23 PM", and "87%".



# Community Collaborative Rain, Hail and Snow Network - CoCoRaHS

## Five easy steps

1. Sign-up at on the CoCoRaHS web site [www.cocorahs.org](http://www.cocorahs.org)
2. Obtain a 4" plastic rain gauge
3. View the online "training slide show"
4. Set up the gauge in a "good" location in your yard - away from trees
5. Start observing precipitation and report online daily



The surface of the water in the gauge looks curved. How do I know where to read?

As water fills up the measuring tube, a curved surface is formed called a **meniscus**. This meniscus is formed by the surface tension of a liquid in contact with the sides of the tube.



Always read the bottom of the **meniscus**, when the making your daily rain measurements.

# Citizen Weather Observer Program - CWOP

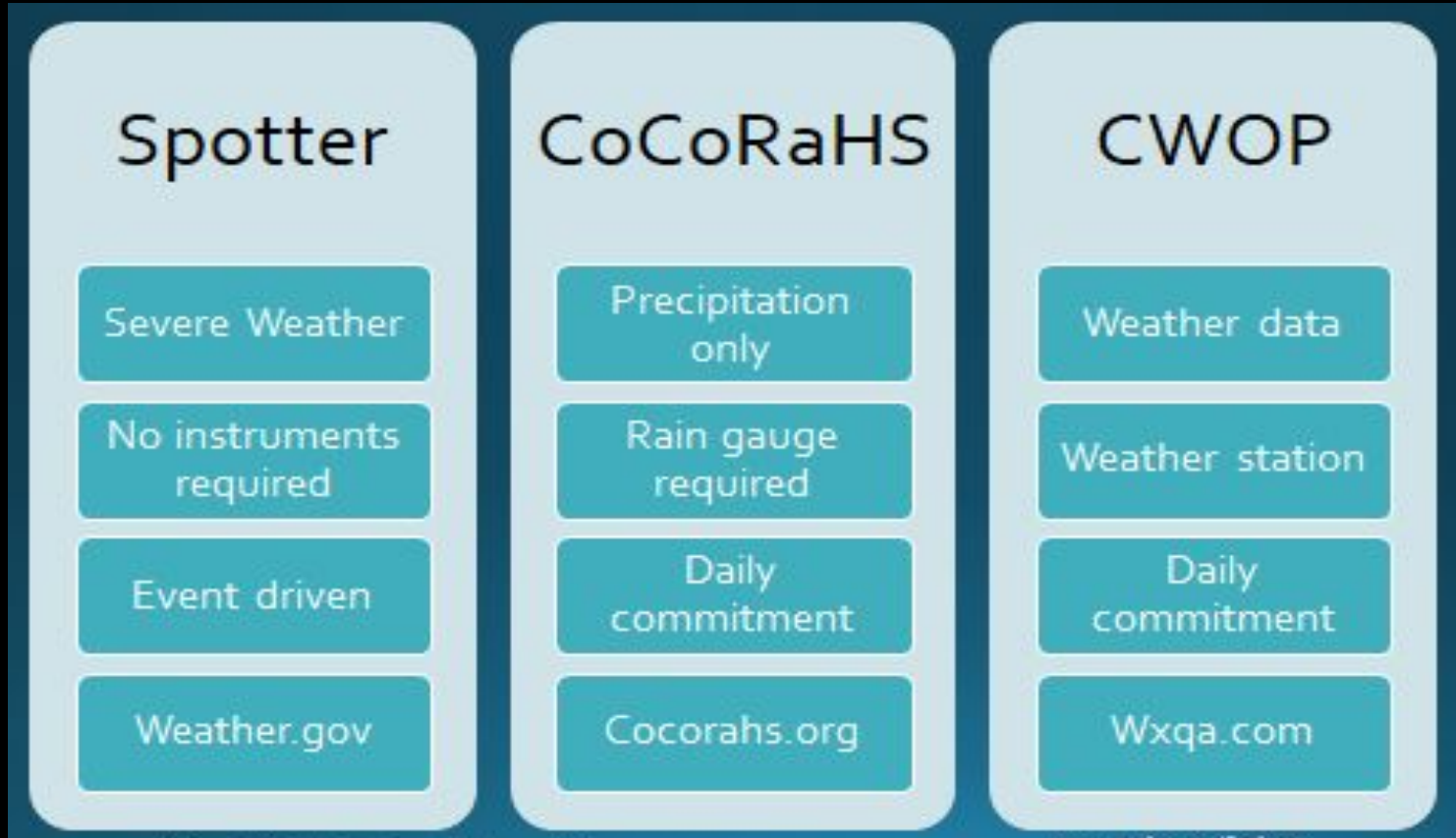


[www.wxqa.com](http://www.wxqa.com)

- Have a weather station and want to share data online
- Has a PC and Internet access
- Register Online & Receive a weather station ID
- Transmits data every 15 mins



# Different programs - All useful to the NWS





# Weather Spotter Resources Online

[www.weather.gov/spokane](http://www.weather.gov/spokane)

- Latest radar & satellite images
- Current watches, warnings & forecasts
- Latest NWS Storm Reports
- Maps of NOAA Weather Radio frequencies
- Current & Past Newsletters
- Spotter Guide
- Additional training resources -

## MetEd



## Spotter Resource Page

### [Send Spotter Reports](#)

*This website is an easy method to send spotter reports online through your computer!  
You have to be a registered weather spotter for the Inland Northwest to gain access to the system.*

### [Online Weather Spotter Sign Up Form](#) - New

[Weather Spotter Sign up Form](#)

[Virtual Training - Nov 2020](#) [Notes](#)

[Weather Spotter Checklist](#)

[Virtual Training - April 2020](#) [Notes](#)

[Ways to be a Weather Volunteer](#)

[Virtual Training - Dec 2019](#) [pdf](#)

[Latest NWS Storm Reports](#)

[Training Schedule](#) - NEW Spring '21

### [Weather Watcher Newsletter](#)

### Additional ONLINE Training

<u><a href="#">Spotter Training through COMET MetEd</a></u>	<u><a href="#">CoCoRaHS</a></u>
<u><a href="#">SKYWARN Spotter Training - Basic</a></u>	<u><a href="#">CoCoRaHS slide shows</a></u>
<u><a href="#">Role of the SKYWARN Spotter</a></u> - Applications	<u><a href="#">CoCoRaHS videos</a></u>
<u><a href="#">SKYWARN Spotter Convective Basics</a></u> - Intermediate	<u><a href="#">Wx Talks Webinars</a></u>

# #6 Poll question

What is a good way to stay informed about severe weather?



# Seasonal Outlook 2021

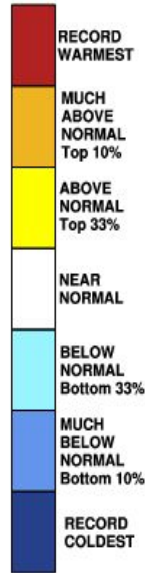
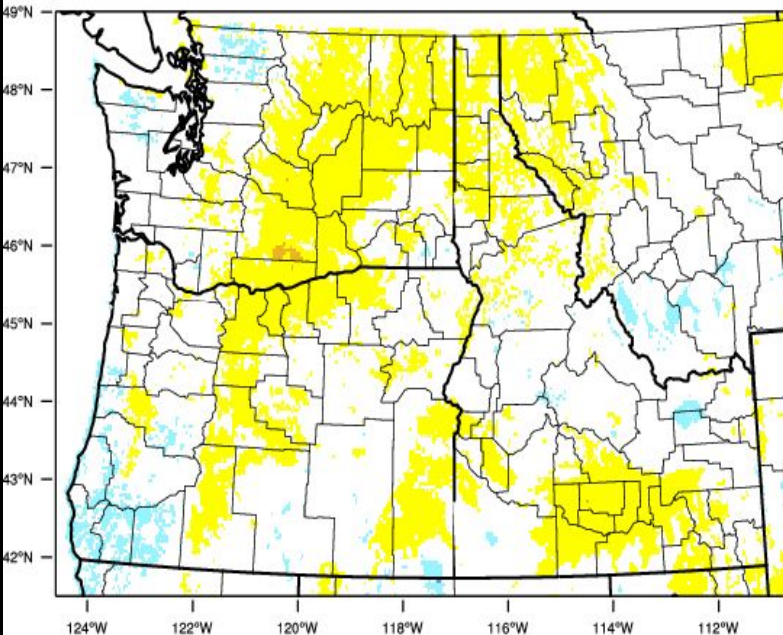
## So far this year...

[wrcc.dri.edu/](http://wrcc.dri.edu/)

January - Mild and Wet in the north  
February - Cold and Wet in the south  
March - Seasonal and Dry

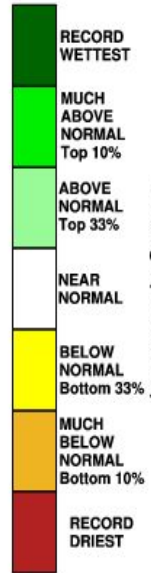
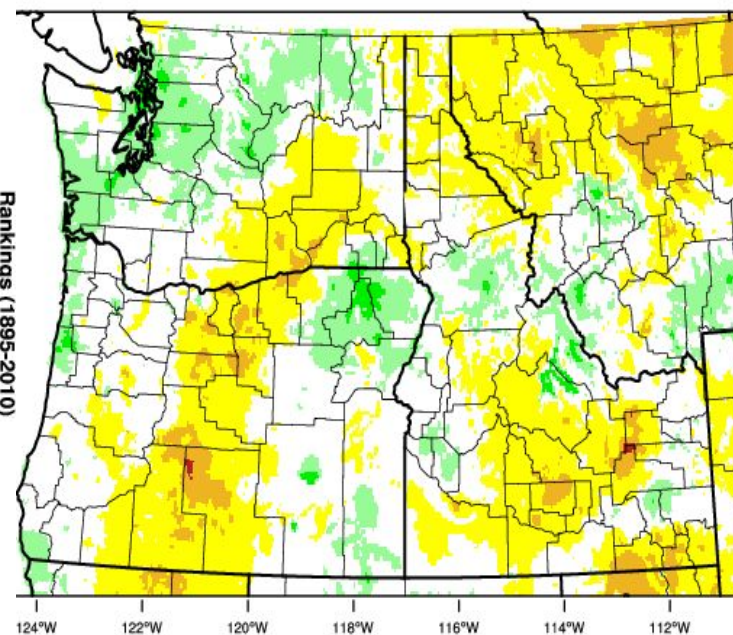
**April - STILL DRY!**

Pacific Northwest - Mean Temperature  
January-March 2021 Percentile



Rankings (1895-2010)

Pacific Northwest - Precipitation  
January-March 2021 Percentile



Rankings (1895-2010)

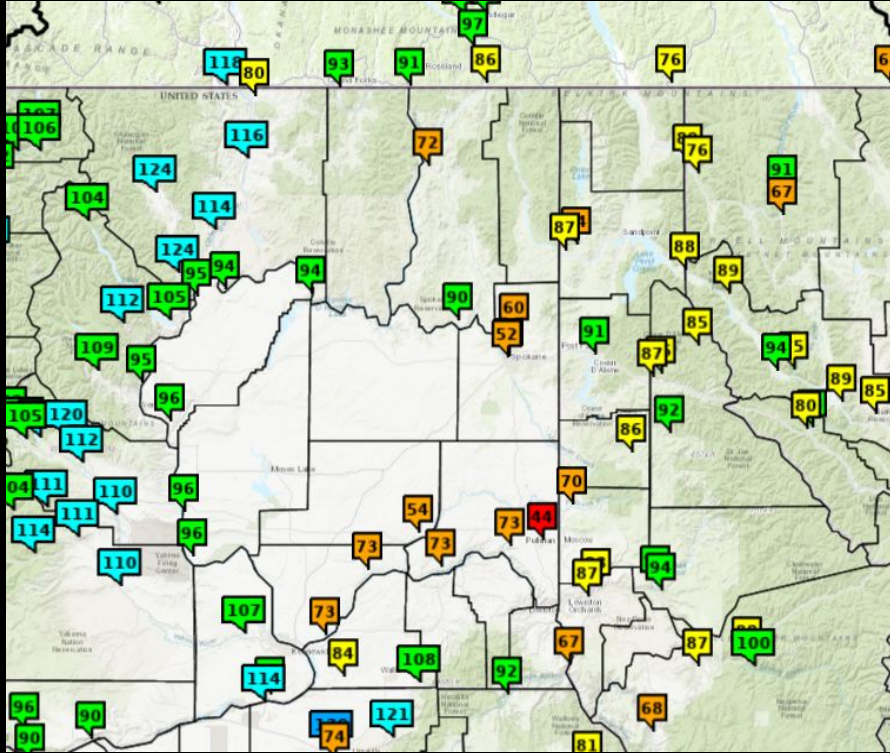
WestWide Drought Tracker - U Idaho WRCC Data Source - PRISM (Prelim), created 5 APR 2021

WestWide Drought Tracker - U Idaho WRCC Data Source - PRISM (Prelim), created 5 APR 2021



# Seasonal Outlook 2021

## Water Supply Outlook

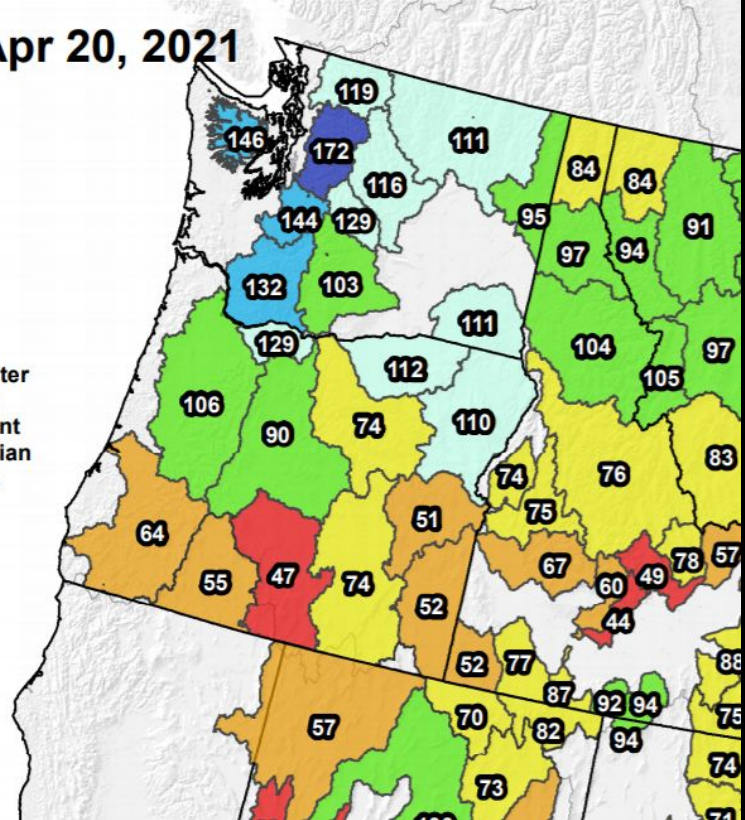
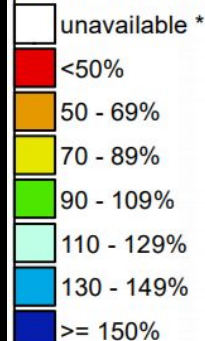


## Mountain Snowpack

### Westwide SNOTEL Current Snow Water Equiva

Apr 20, 2021

Current Snow Water  
Equivalent (SWE)  
Basin-wide Percent  
of 1981-2010 Median



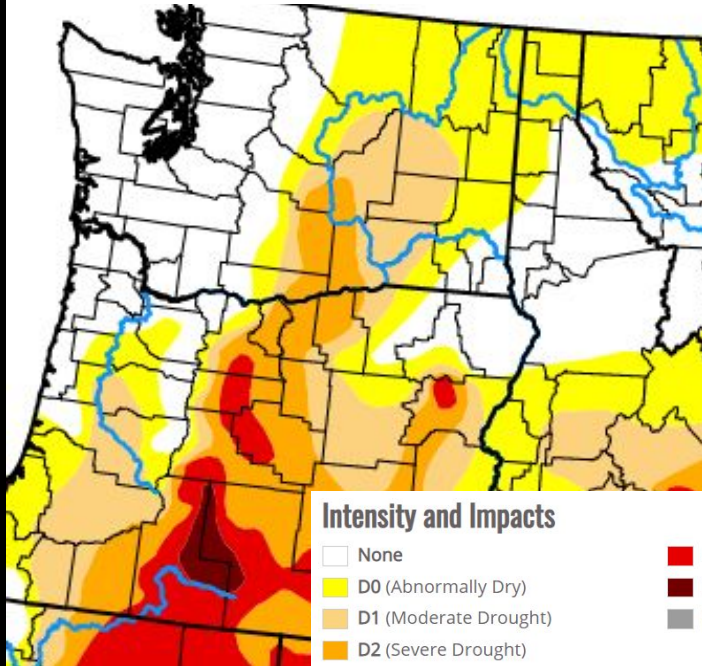
# Seasonal Outlook 2021

## US Drought Monitor & Seasonal Outlook

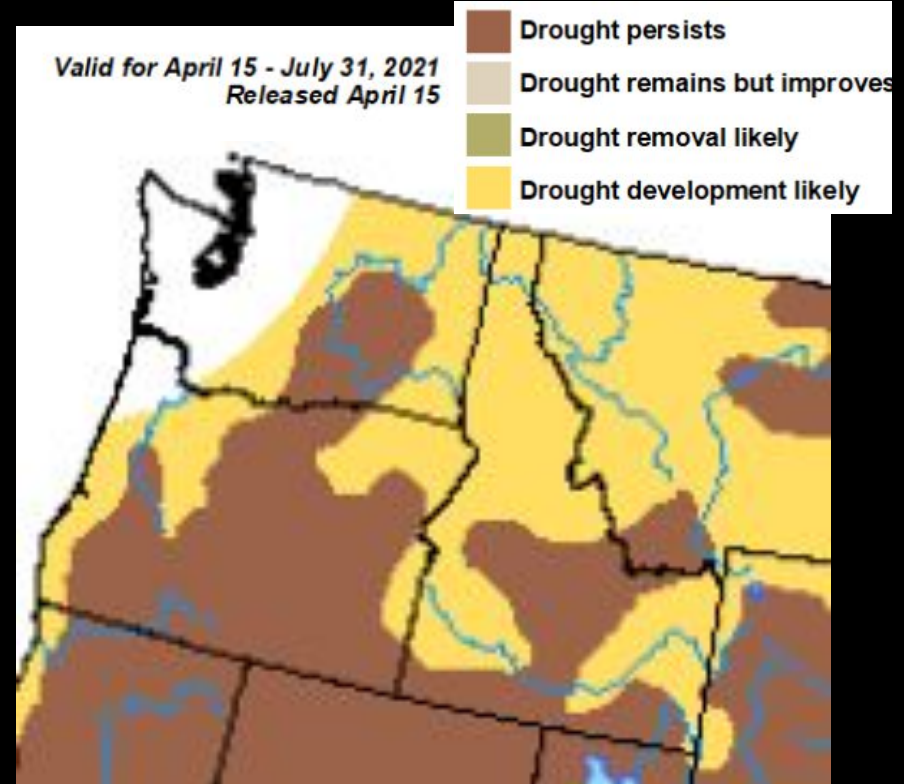
[www.cpc.noaa.gov](http://www.cpc.noaa.gov)

Map released: Thurs. April 15, 2021

Data valid: April 13, 2021 at 8 a.m. EDT



Valid for April 15 - July 31, 2021  
Released April 15



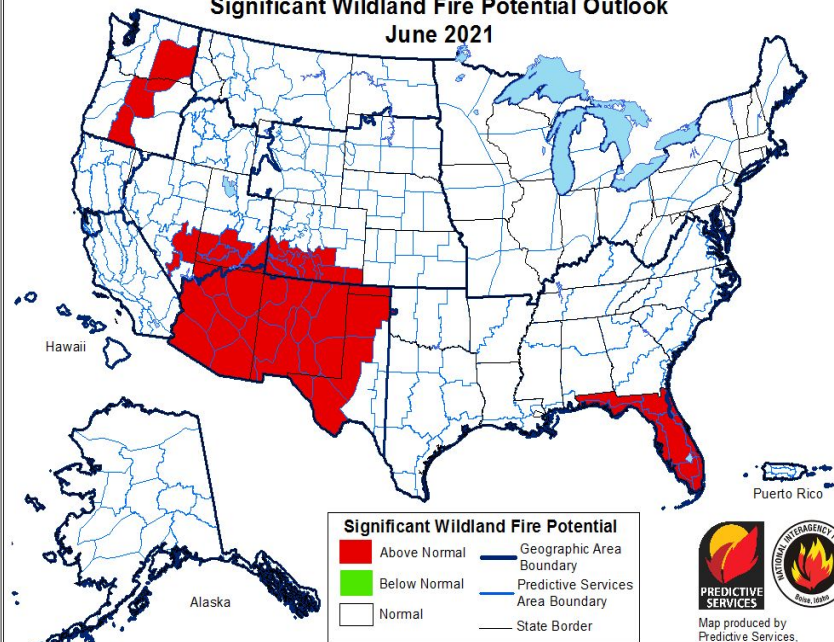


# Seasonal Outlook 2021

## Wildland Fire Potential

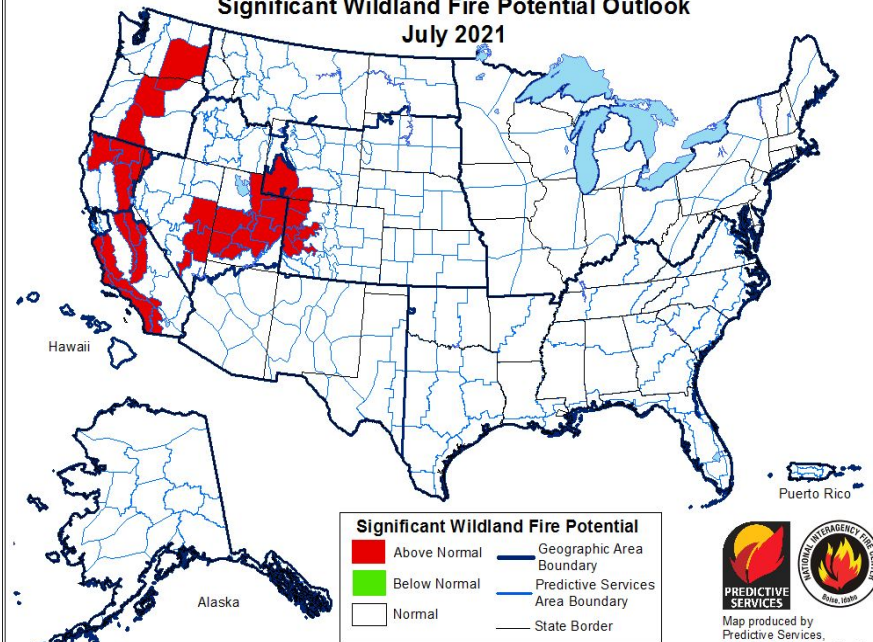
[www.nifc.gov](http://www.nifc.gov)

Significant Wildland Fire Potential Outlook  
June 2021



Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur.  
Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions.  
Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.

Significant Wildland Fire Potential Outlook  
July 2021



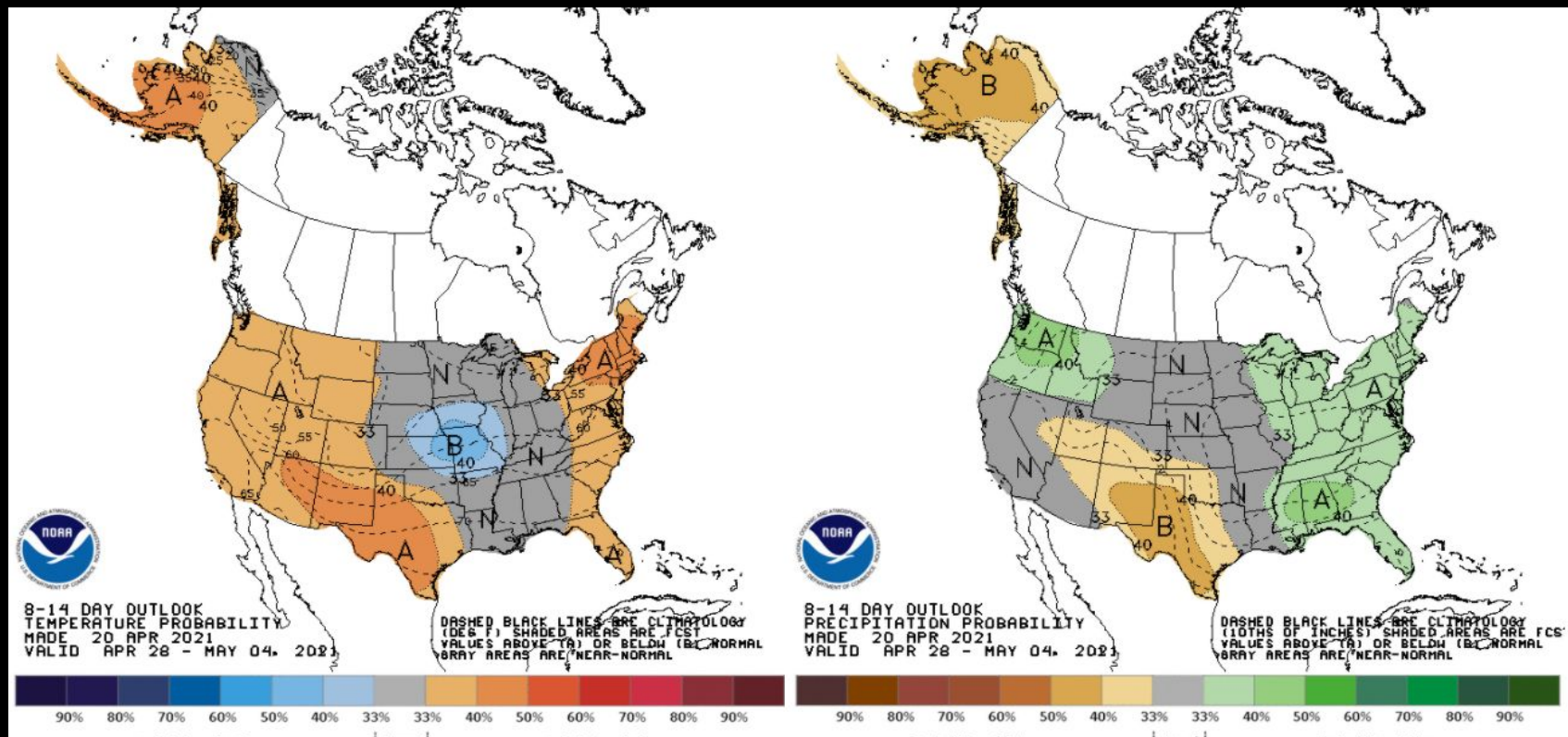
Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur.  
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# Seasonal Outlook 2021

## 8-14 Day Outlook

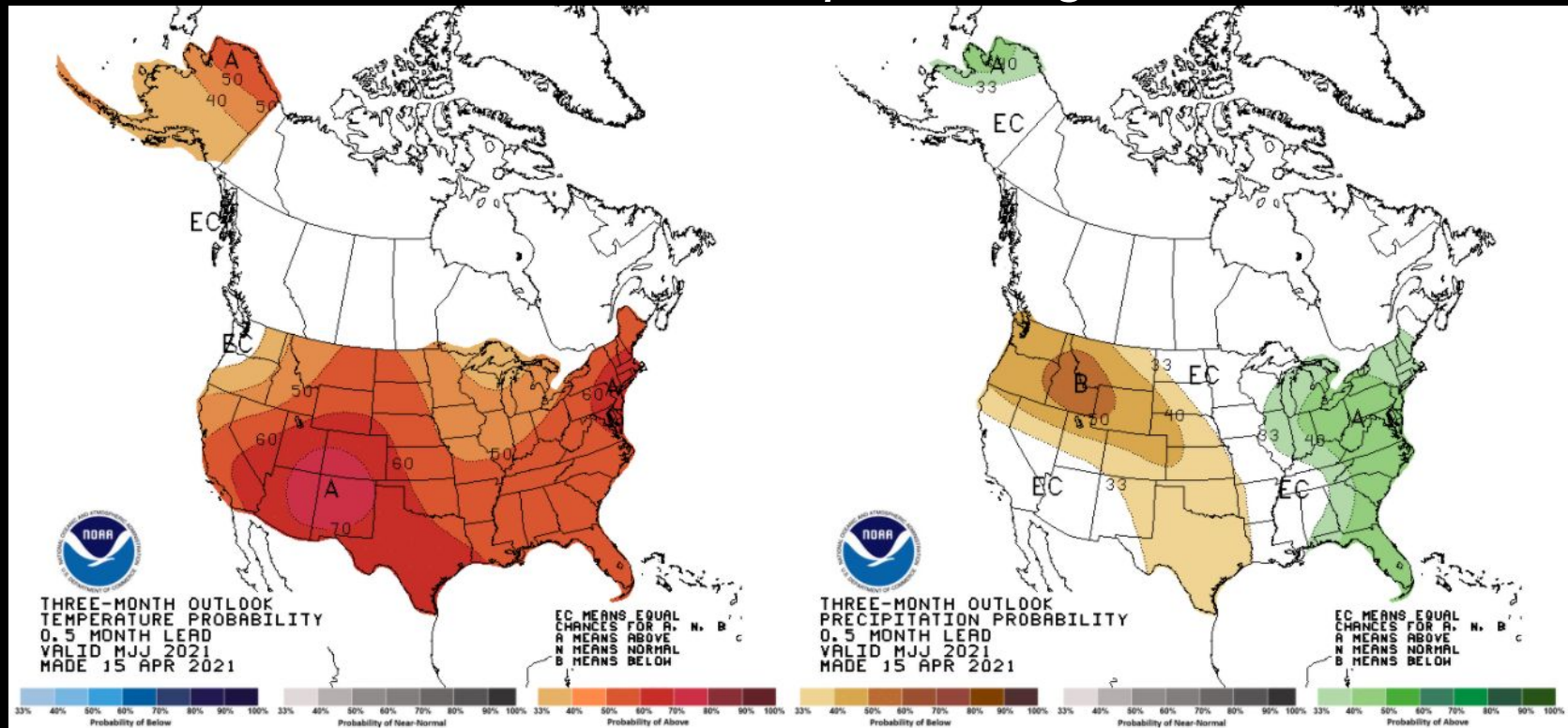
[www.cpc.noaa.gov](http://www.cpc.noaa.gov)



# Seasonal Outlook 2021 - May through July

## 3 Month Outlook

[www.cpc.noaa.gov](http://www.cpc.noaa.gov)



# NWS + Weather Spotters = Saved Lives

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

## THANK YOU!

# Any Questions?

I will unmute you - then you unmute yourself to talk.

### What's Next?

You will receive a follow-up email

- register as a weather spotter
- Spotter ID
- Spotter training certificate

