

Basic Weather Spotting for the Inland Northwest

Spring 2022

National Weather Service - Spokane



T-storm near Waterville, WA - July 2021



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.....



May 27-29, 2021 - Dust, Wind and Damage

Coeur d'Alene, ID



Okanogan, WA



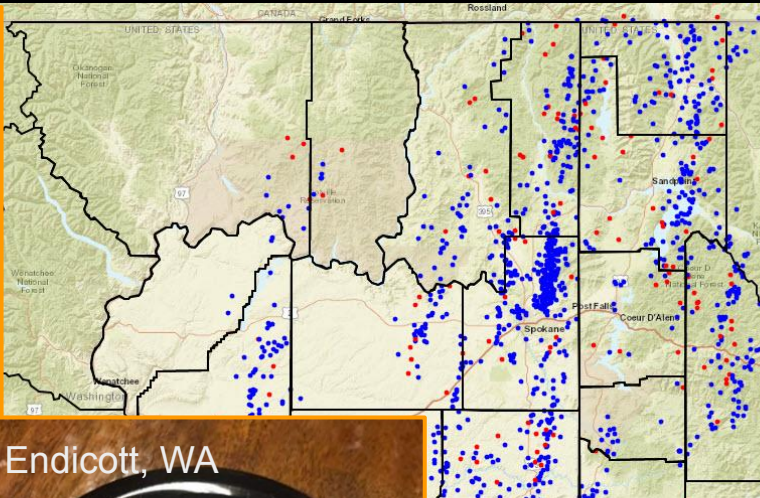
krem.com

Ritzville, WA



June 15, 2021 - AM Severe Thunderstorms

9W Pomeroy, WA



Big Creek, ID



Endicott, WA



Lincoln WA	58
Ferry WA	7
Garfield WA	57
Whitman WA	154
Spokane WA	308
Stevens WA	71
Bonner ID	124
Pend Oreille WA	125
Boundary ID	101
Kootenai ID	22
Latah ID	19
Benewah ID	17
Shoshone ID	111
Asotin WA	12



Lancaster, WA

May 6, 2022 - T-storms & Tornadoes in Spokane



Nov 16-17: Flooding Similkameen & Okanogan Rivers



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 - NOAA
- Responsible for all weather/water Watches & Warnings
- Works with local agencies
- Observe & Forecast
- “Behind the Scenes”
- Decision Support
- Preparedness & Education



Staffed 24/7

Current office site since 1995

- * 21 Employees
- * Meteorologists
- * Technicians

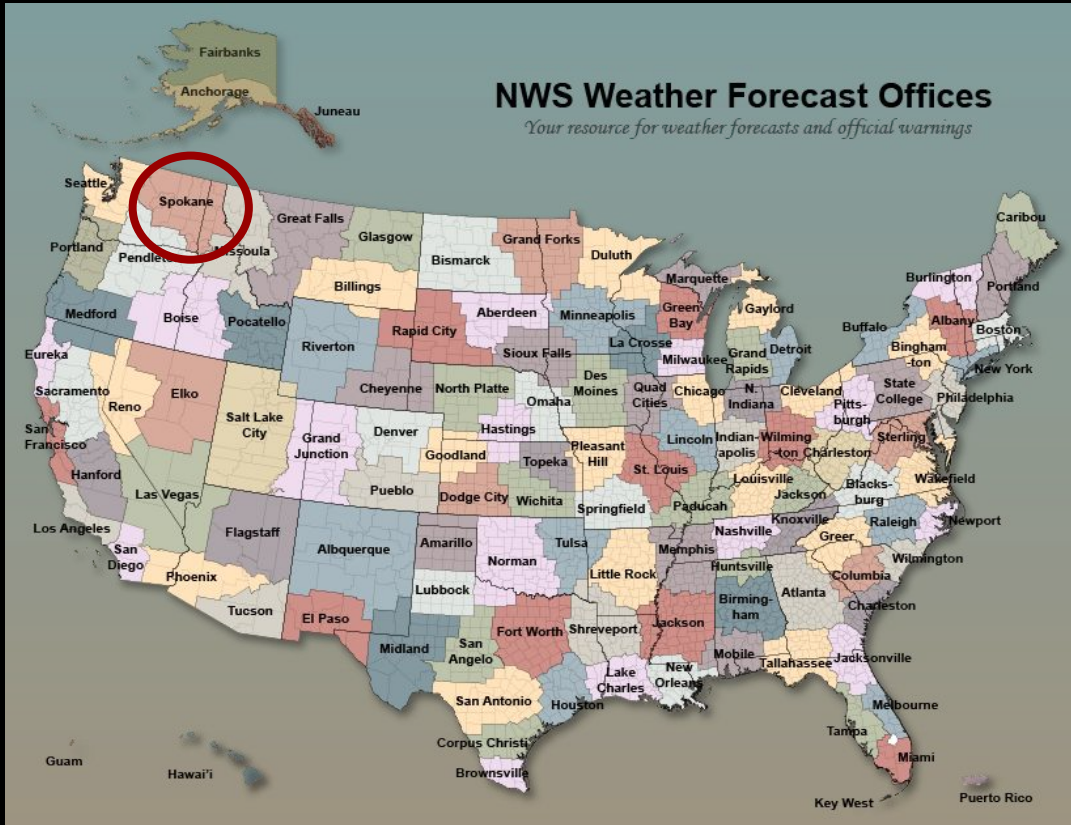
NWS Spokane

- Duties

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



NWS Spokane Forecast and Warning Area

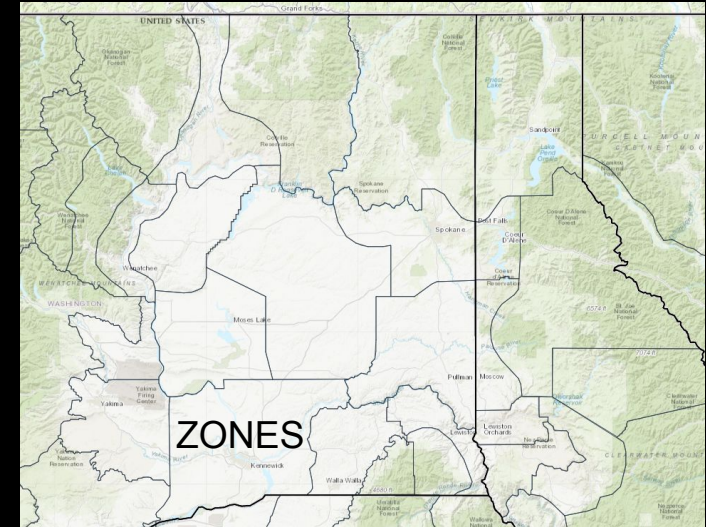


Includes 2 states

- 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



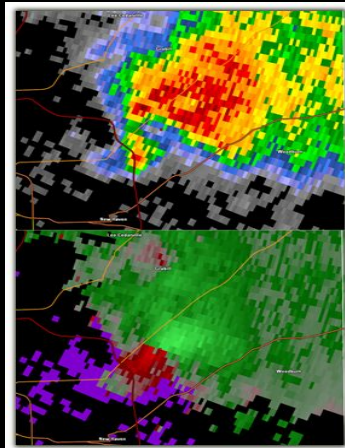
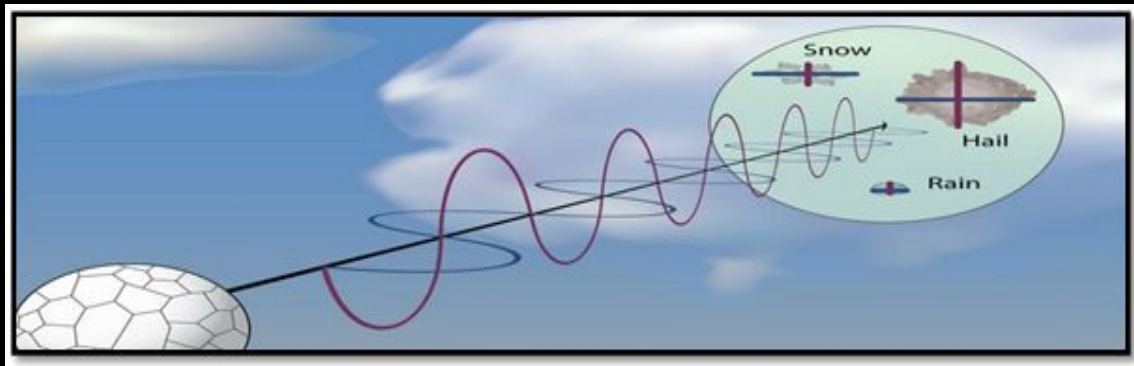
Issue watches/warnings for the protection of life and property



NWS Observations & Tools



Doppler Weather Radar



Reflectivity (dBZ)



Small Particles

Light Rain, Dust, Bugs

Big Particles

Hail, Big Rain Drops

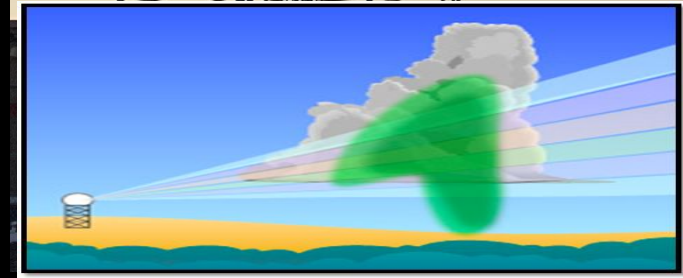
Velocity (kts)



Speed Moving Away from Radar

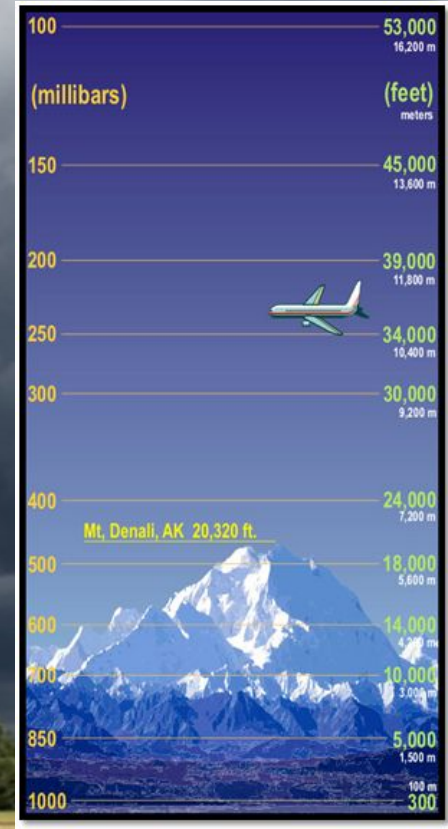


Speed Moving Toward Radar



Weather Balloon - Radiosonde

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



Weather Satellites

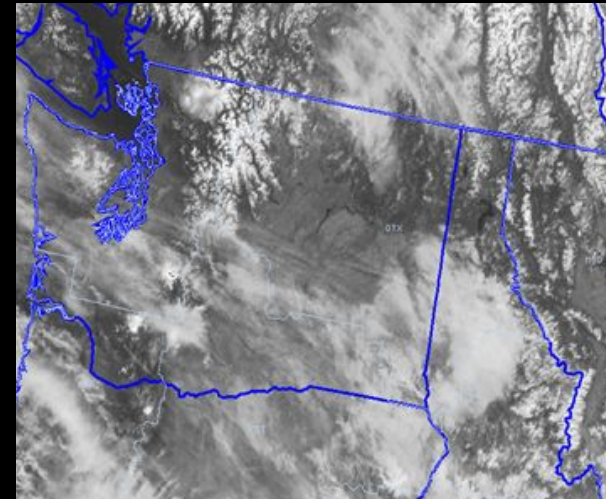
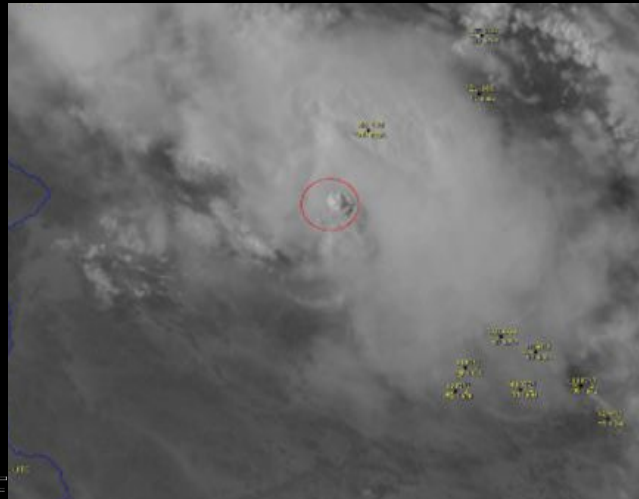
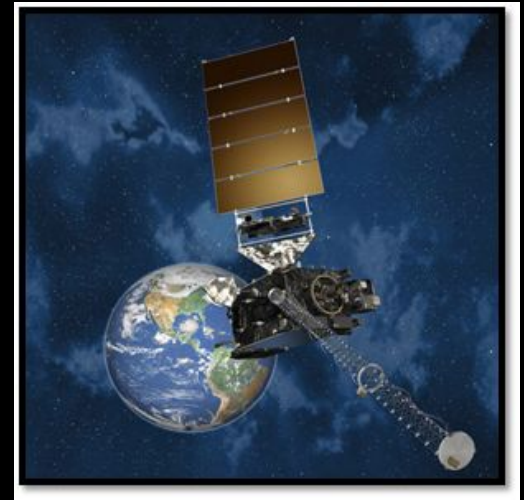
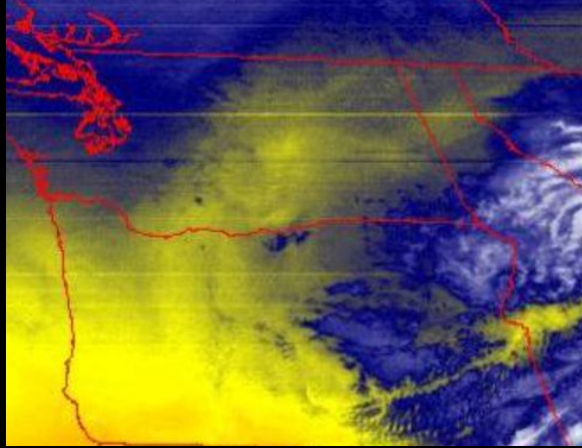
GOES 17 - 16 different channels

IR, Water Vapor & Visible

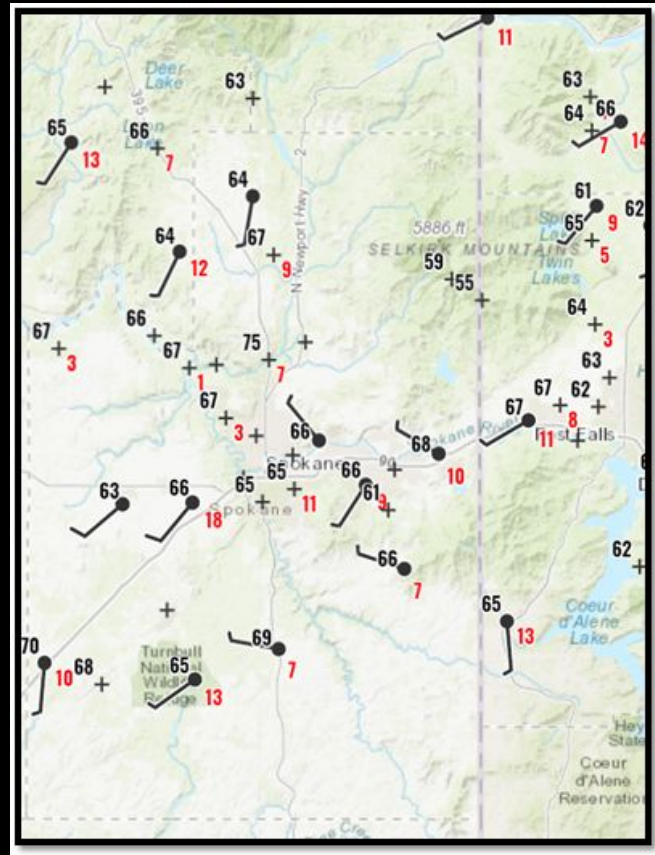
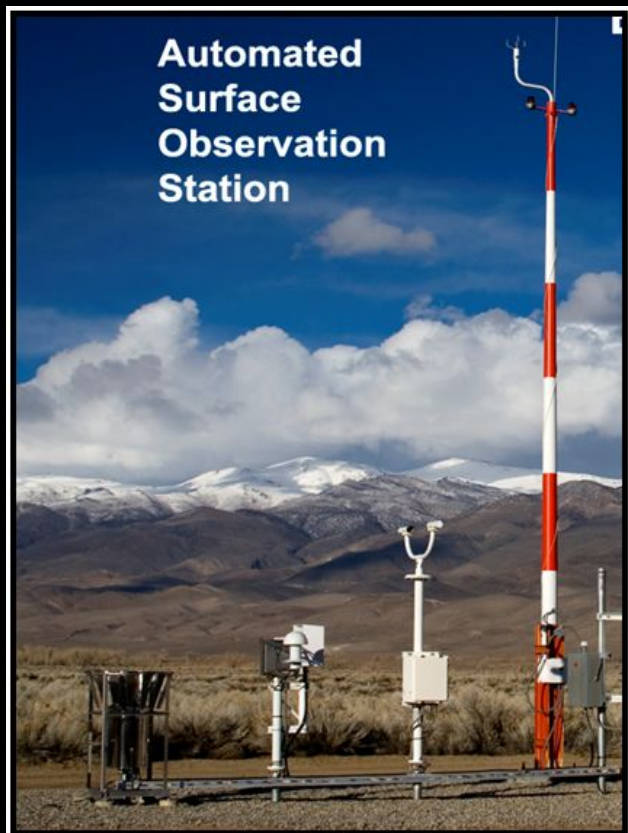
New images every 5 minutes

Aids in early detection

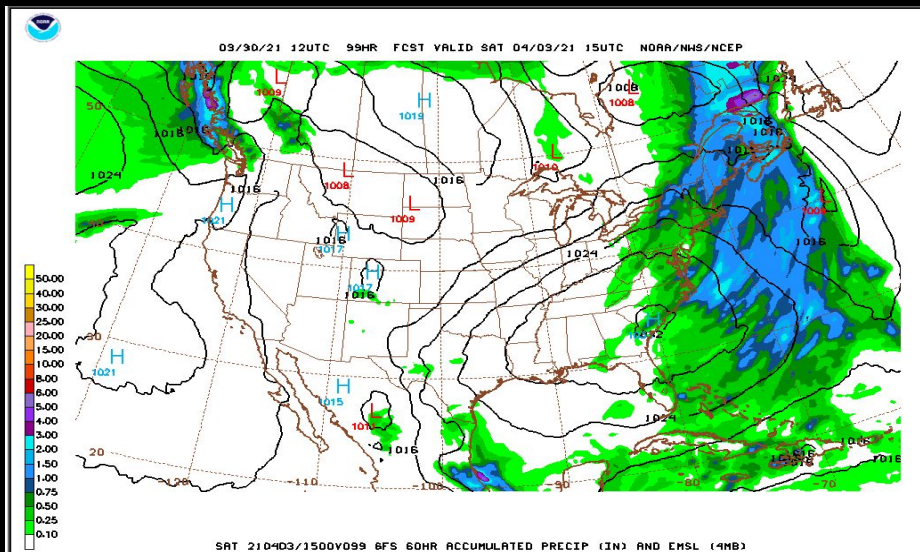
Thunderstorms & Wildfires



Surface Observations & Web Cams

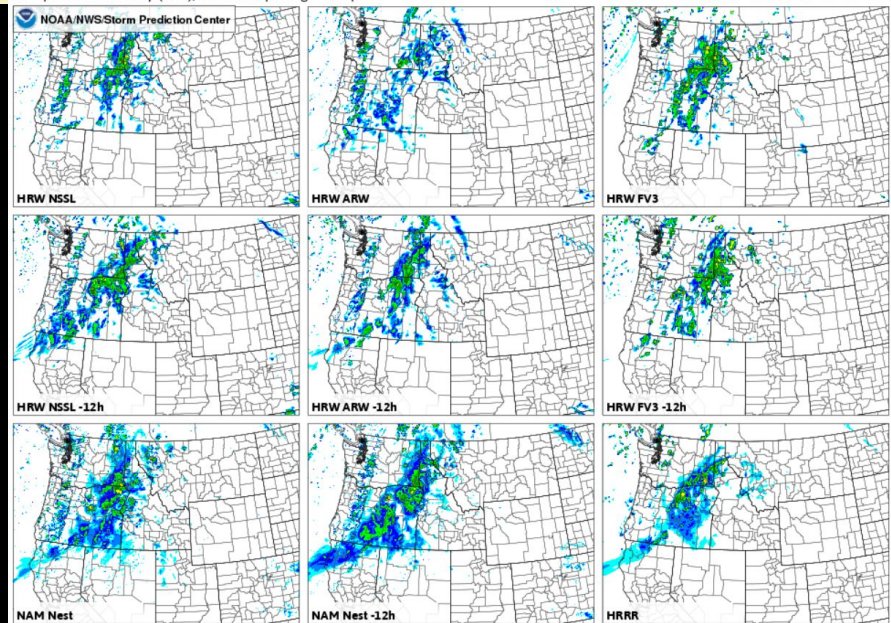


Supercomputers & High Resolution Models



Composite reflectivity (dBZ), ensemble postage stamp

Valid: Tue 2022-04-26 03:10



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 SKYWARM logo on the right. It consists of a vertical list of weather-related categories, each with a colored background and specific 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 (mntns)
- 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



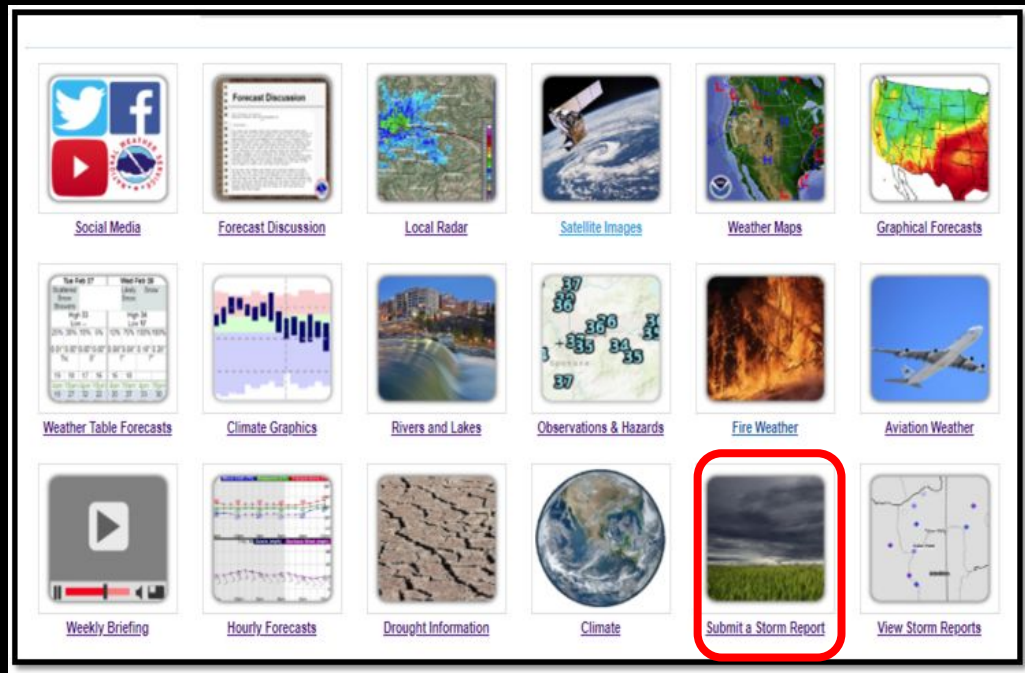
 **Storm Reports**
Alerting the NWS to local weather



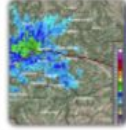
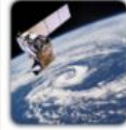



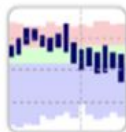





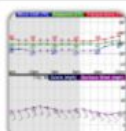




Report Type -> Details -> Location -> Review and Send

Please select a report type ▼

[← Back](#) [Next →](#)

[Privacy policy for weather reports](#)



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-  [Graphical Forecasts](#)
-  [Weather Table Forecasts](#)
-  [Climate Graphics](#)
-  [Rivers and Lakes](#)
-  [Observations & Hazards](#)
-  [Fire Weather](#)
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-  [Weekly Briefing](#)
-  [Hourly Forecasts](#)
-  [Drought Information](#)
-  [Climate](#)
-  [Submit a Storm Report](#)
-  [View Storm Reports](#)

Share weather data - Social Media

Twitter

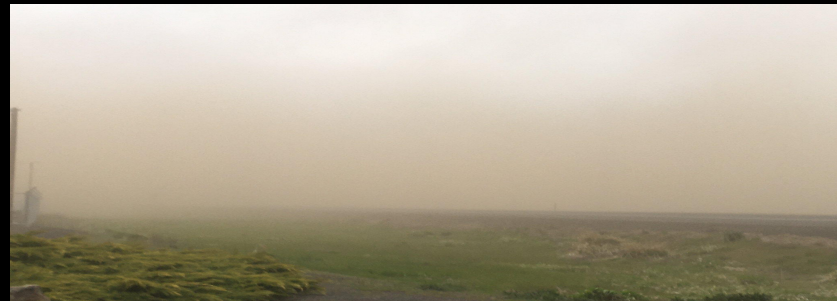


- @NWSSpokane
- #wawx & #idwx
- Share reports & pictures
- Monitored 24/7

Facebook

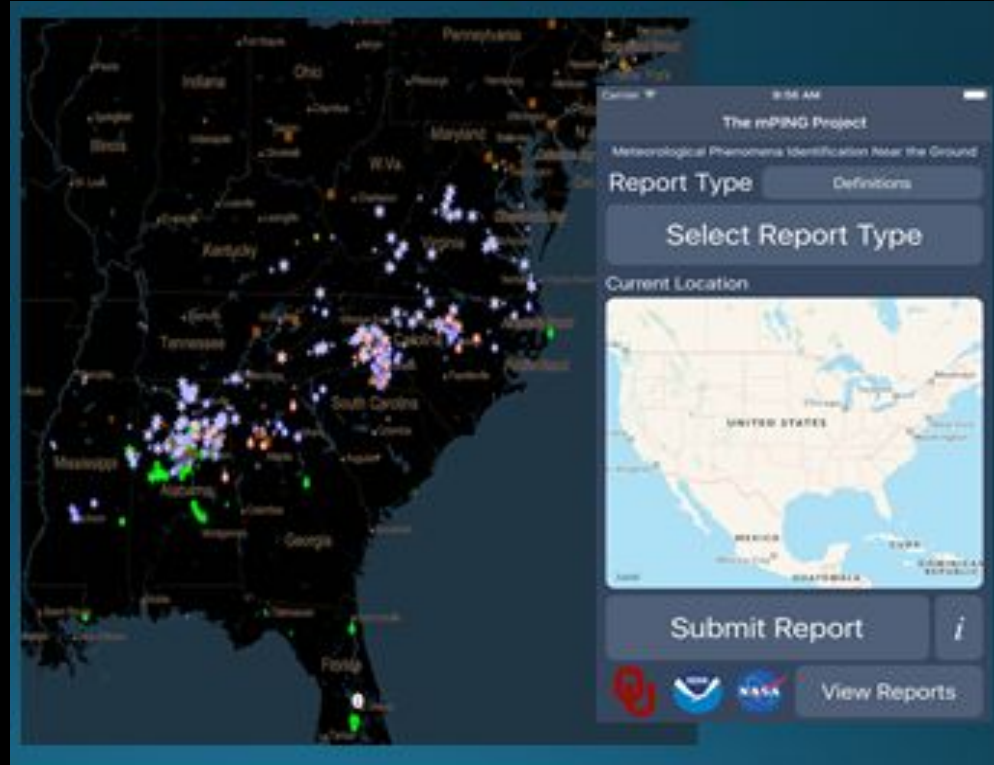


- NWS Spokane
- Send reports & pictures
- Monitored 24/7



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



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



National Weather Service - Spokane, WA

www.weather.gov/Spokane



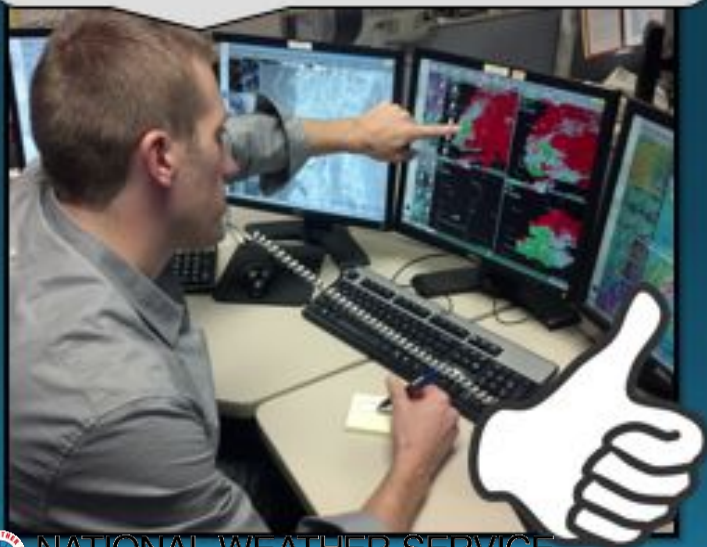
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Examples of Spotter Reports

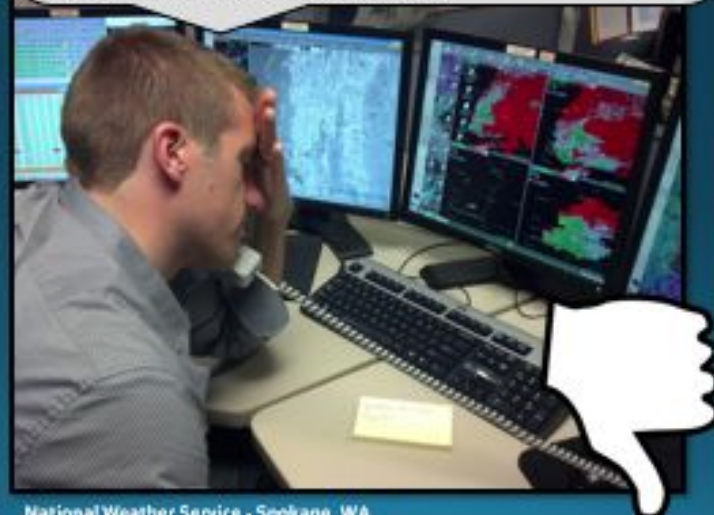
Good Spotter Report

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.



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?

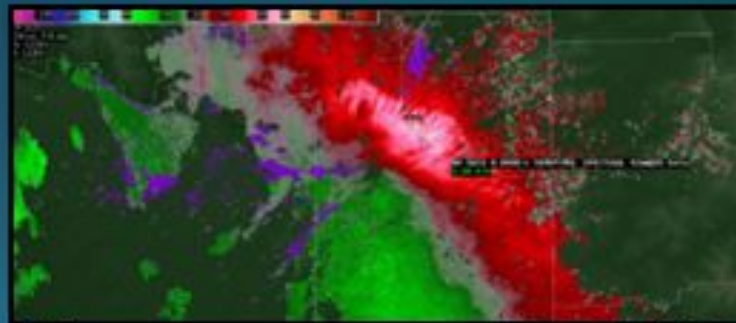


Keep in Mind – We may contact you

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



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

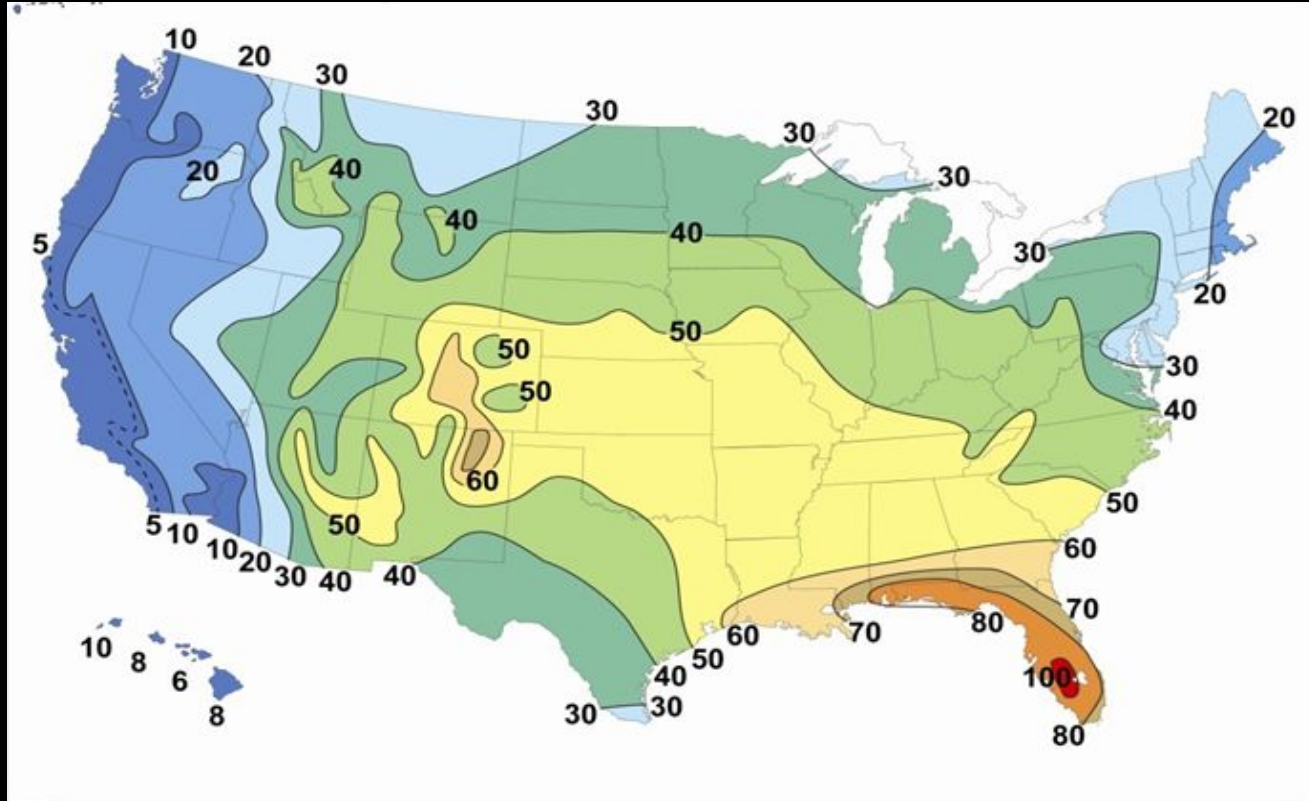
We send periodic emails to alert you of the quarterly newsletter and upcoming training opportunities.



#2 Poll Question

What is necessary to give in a spotter report?

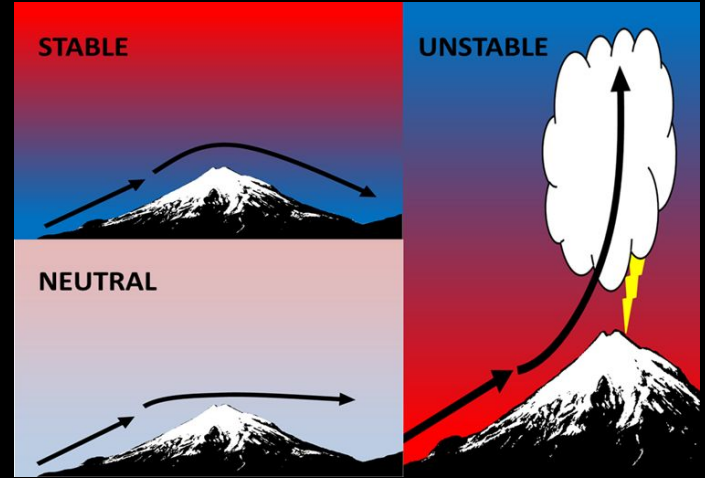
Average Annual Thunderstorm Days



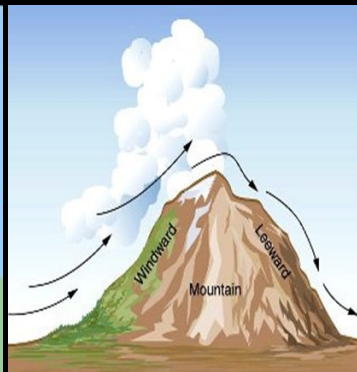
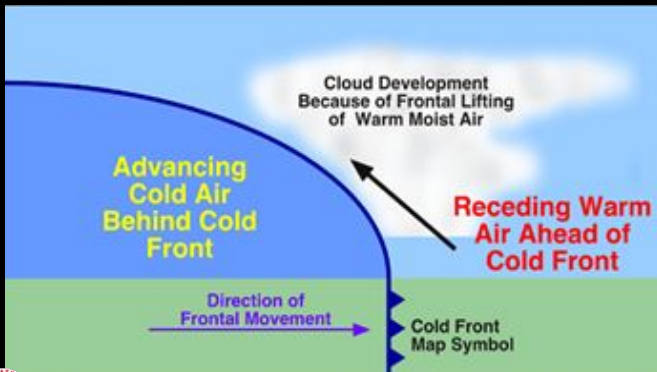
Thunderstorm Ingredients



Moisture



Instability

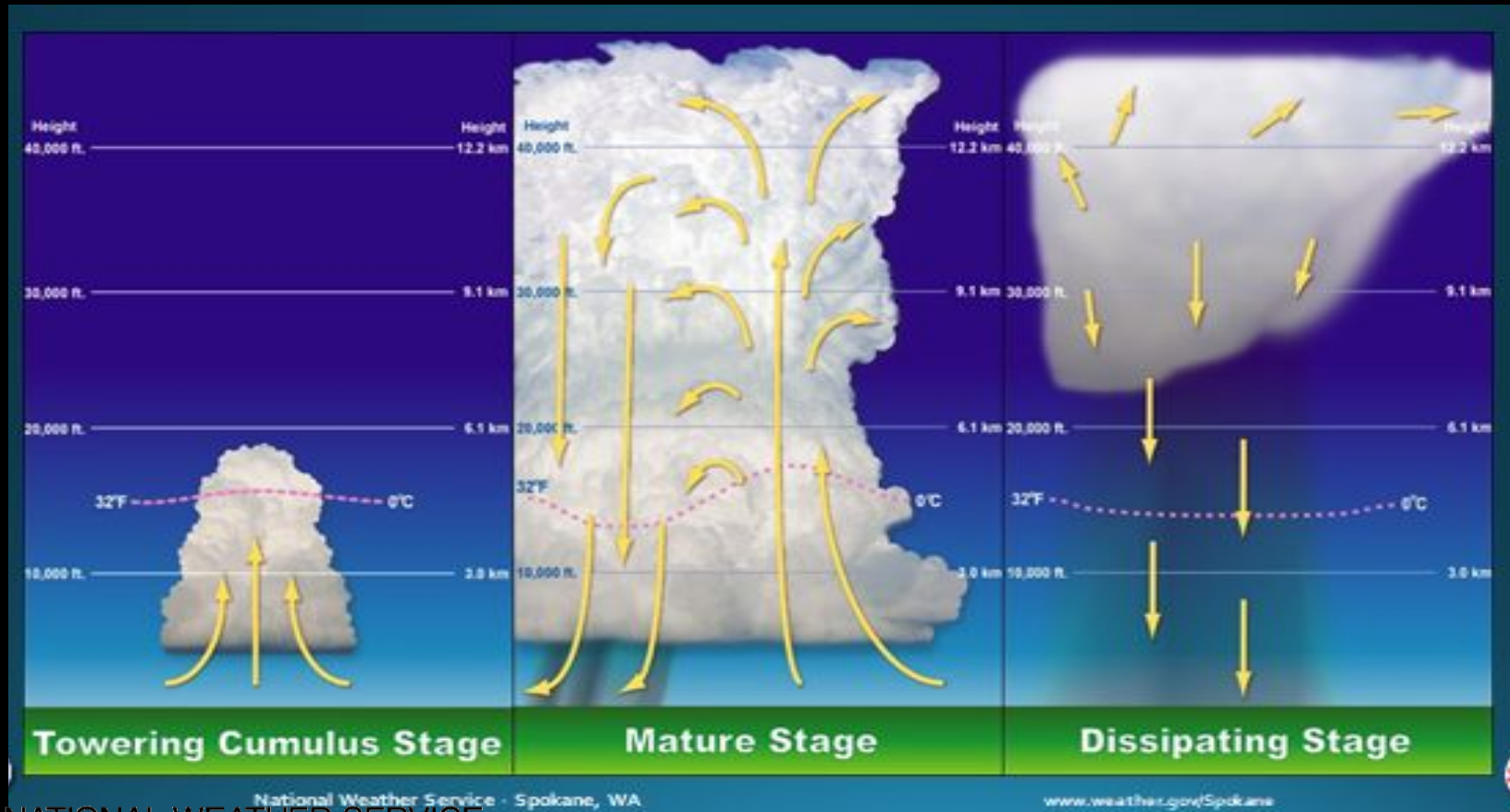


Lift

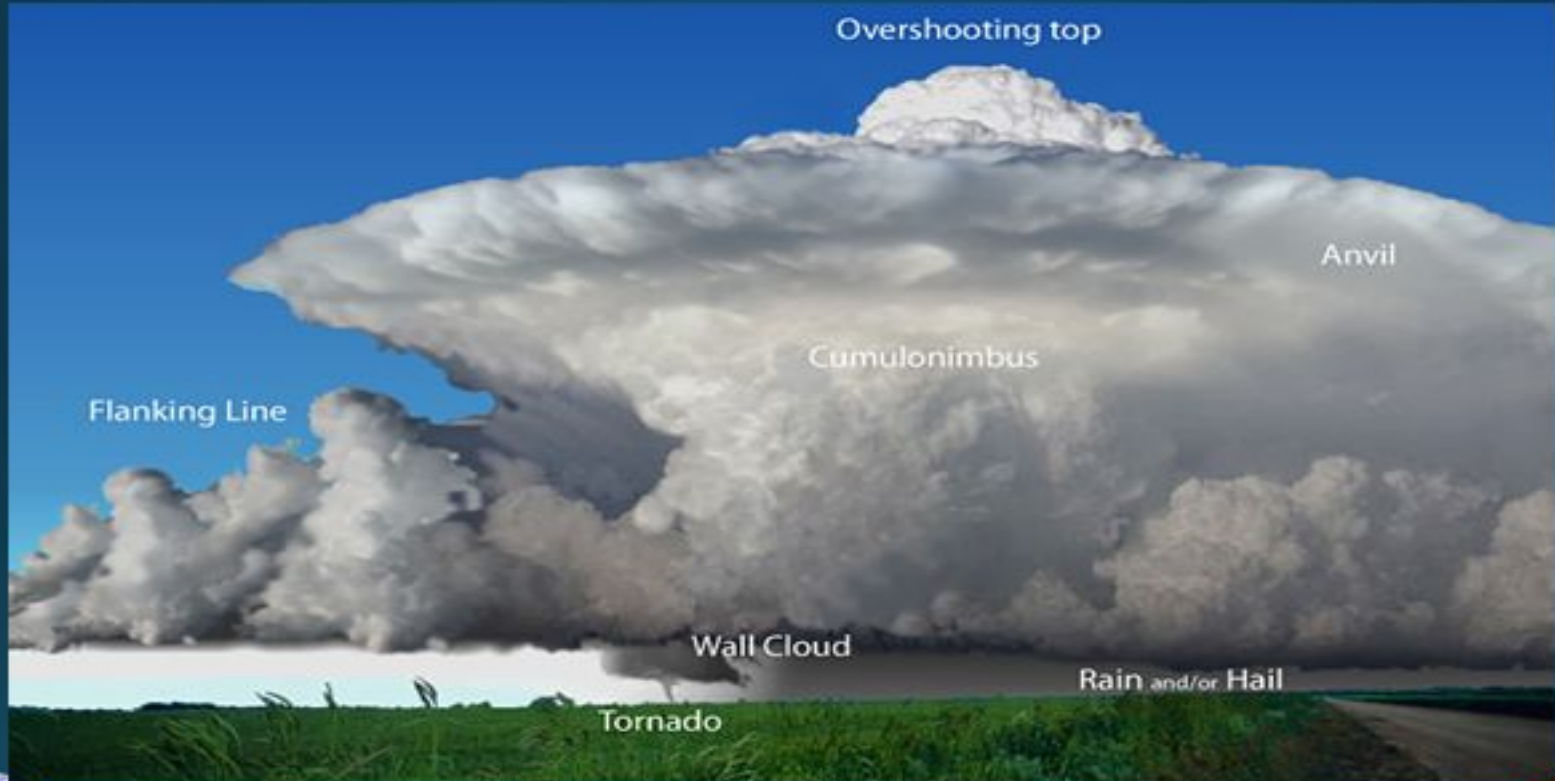


Vertical Wind Shear

Stages of a Thunderstorm



Anatomy of Thunderstorm



National Weather Service Spokane



What is a Severe Thunderstorm?

Winds \geq 58 mph



Hail \geq 1" in diameter



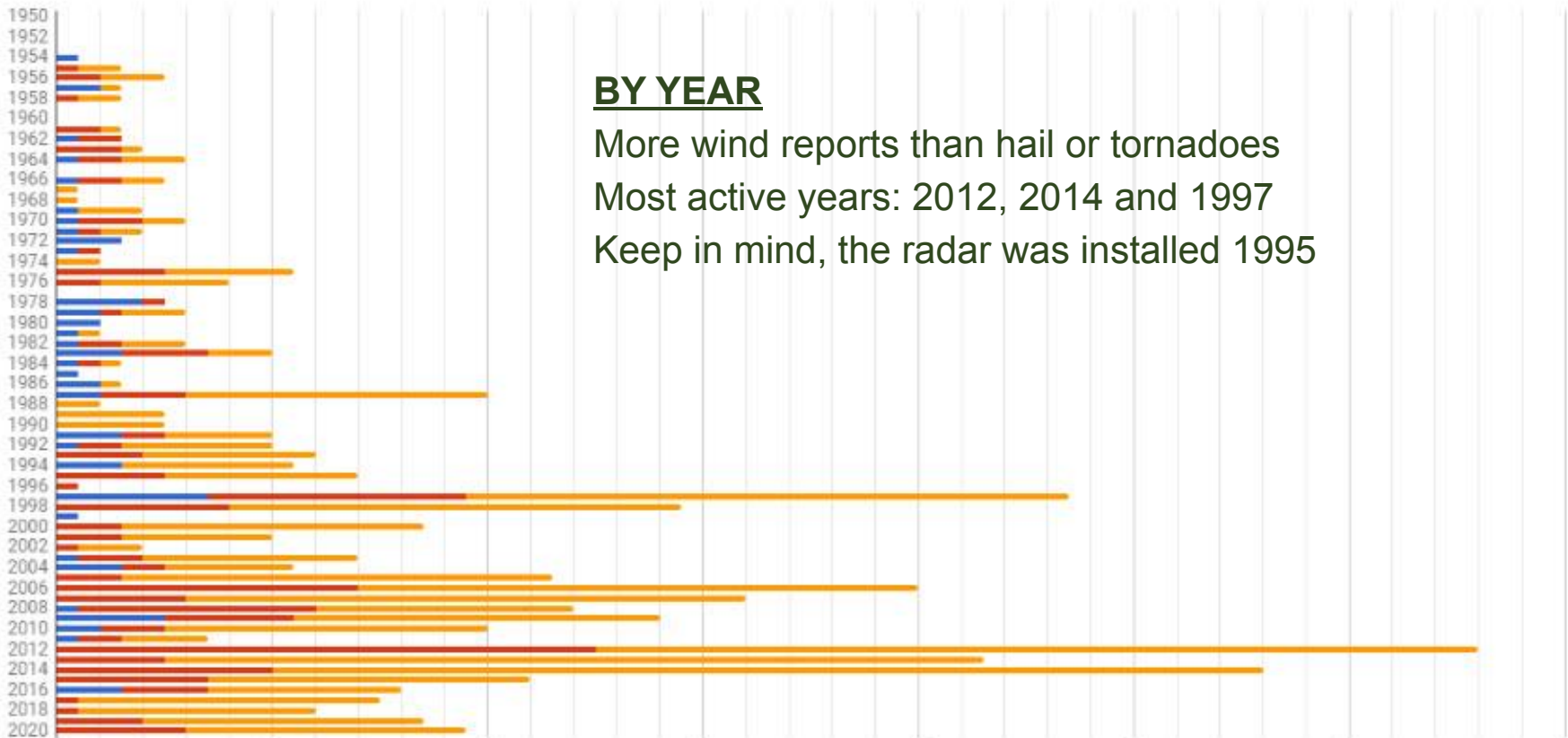
Tornado



- 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

■ Tornadoes ■ Severe Hail ■ Severe T-Storm Winds



BY YEAR

More wind reports than hail or tornadoes

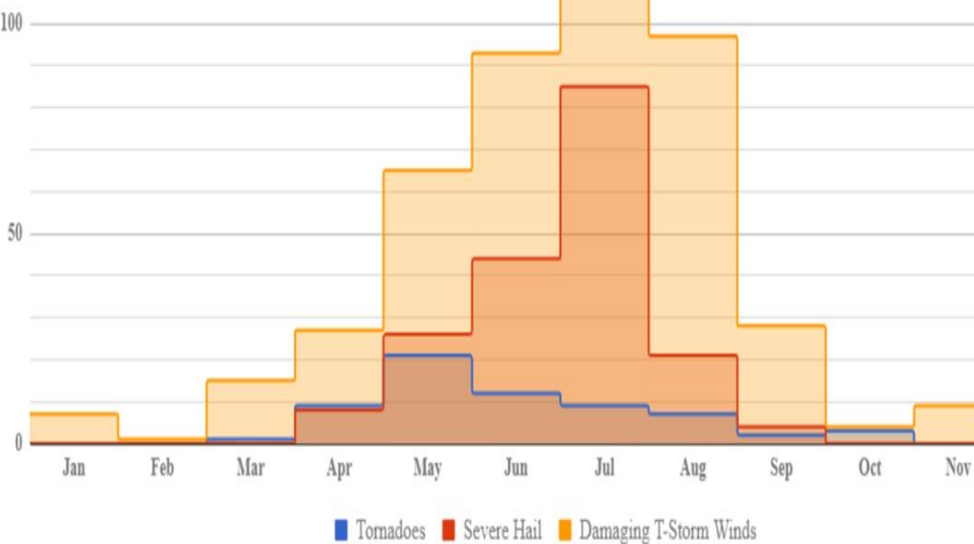
Most active years: 2012, 2014 and 1997

Keep in mind, the radar was installed 1995

More Local Severe Weather Climatology

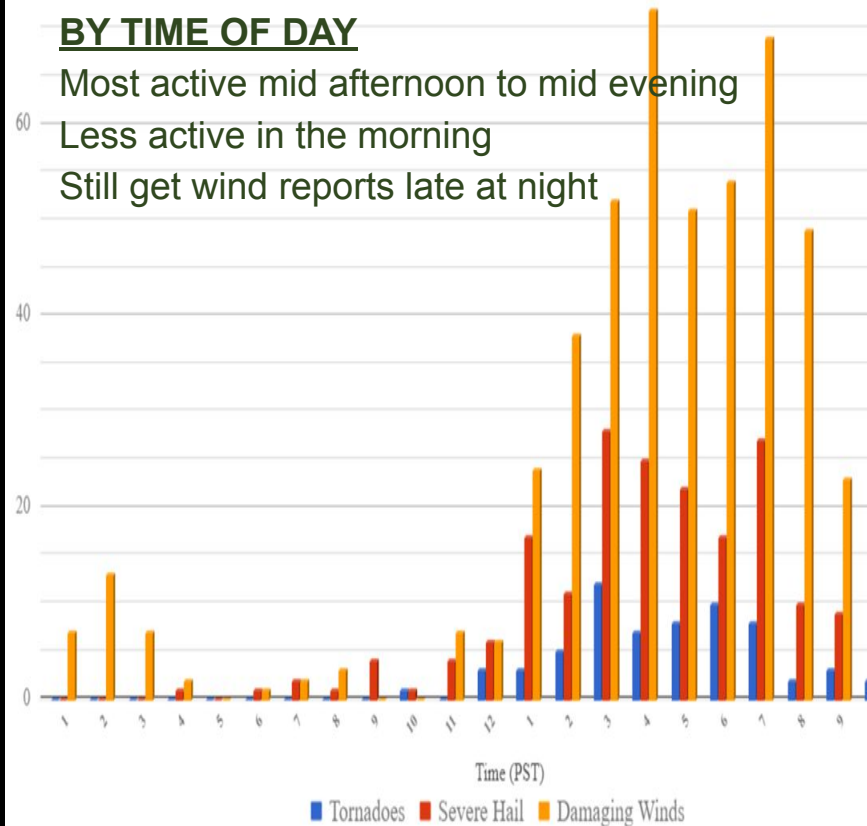
BY MONTH

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
- 1/4 mile track
- Max wind speeds of 80-110 mph
- Mostly EF0 to EF1

Mold - July 2016



Spokane - May 2022

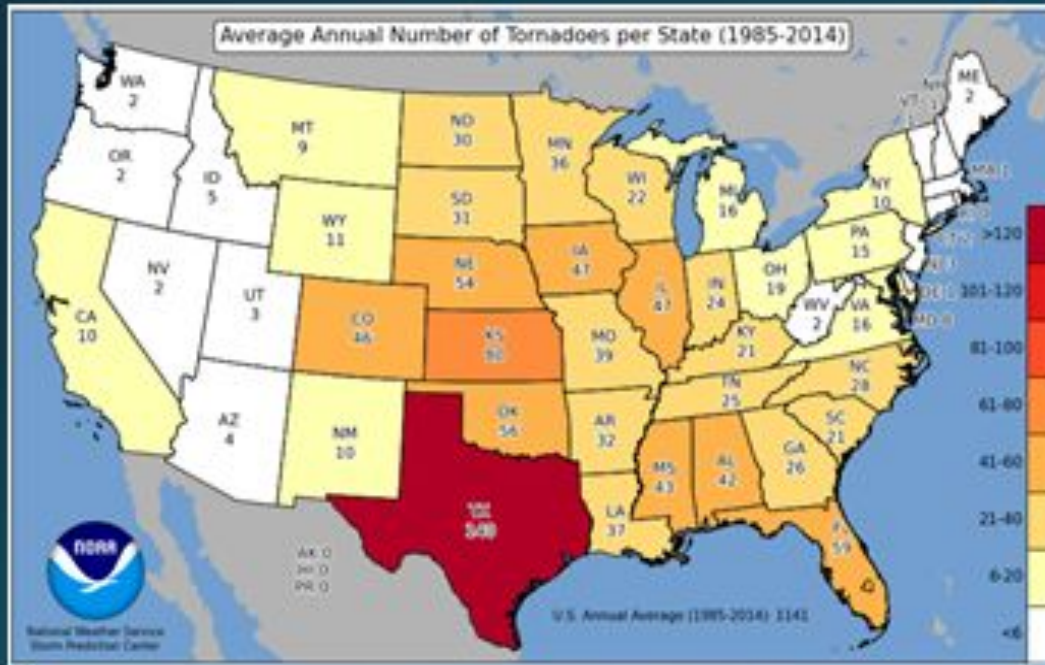


Spokane - July 2016



How are tornadoes measured?

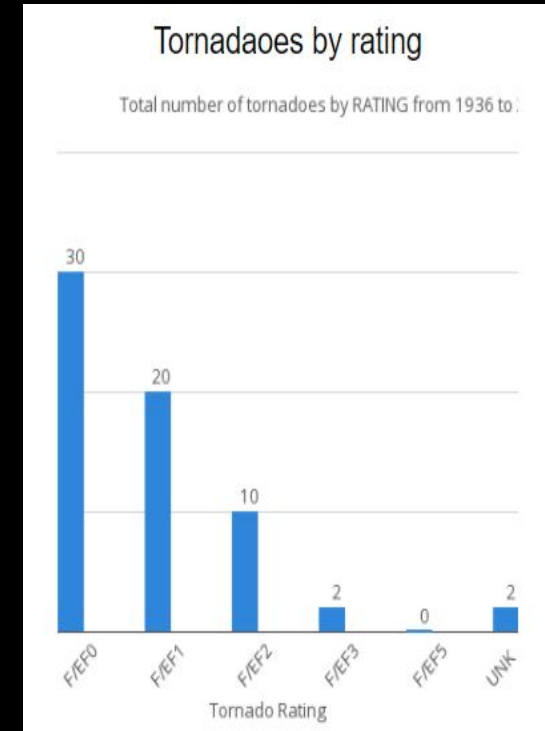
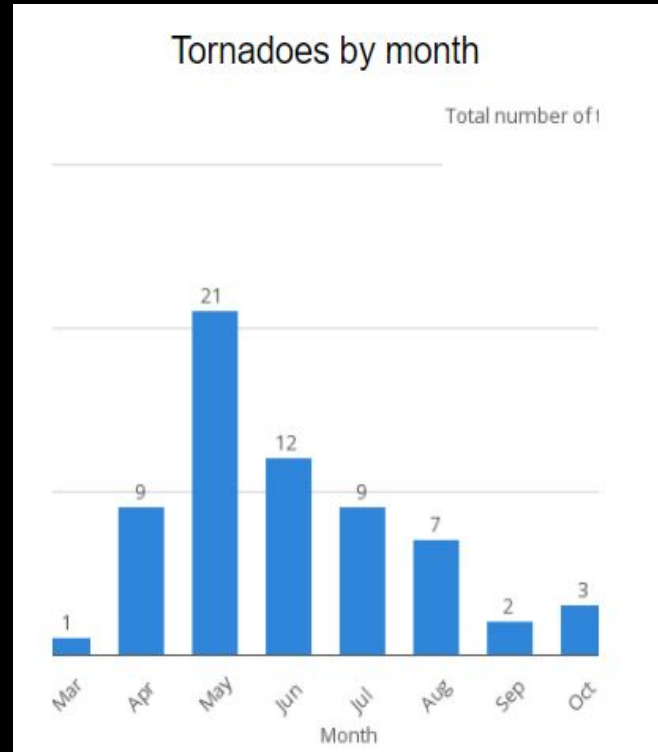
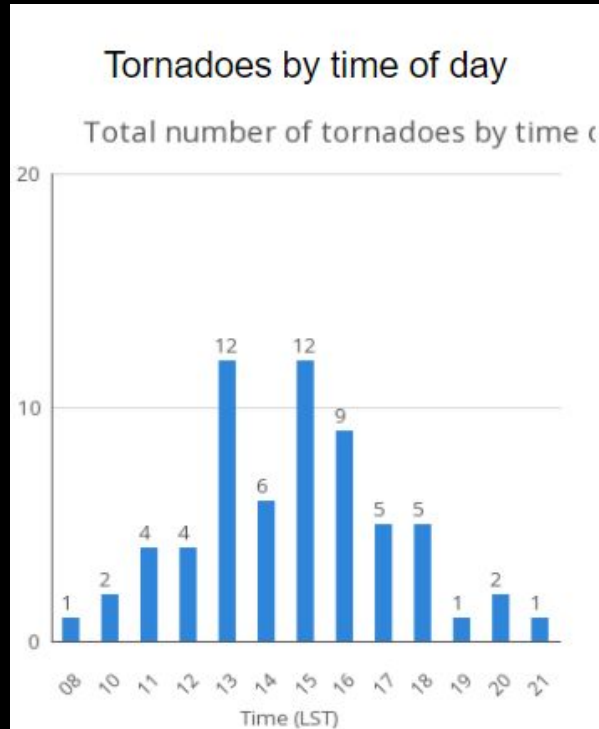
The Enhanced Fujita Scale



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)

In Spokane metro area: last time tornado spotted was 2016
There have been 13 tornadoes in the metro area since 13 (now 15)!



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



Stratus – stable clouds, hugs mountains



Wall cloud – lowering cloud base/ rotation



#4 Poll Question

Identify this image.



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 produce any damage
 - Downed trees, power lines, structure damage
- Remember, severe/high winds \geq 58 mph



May 6, 2022



April 27, 2019



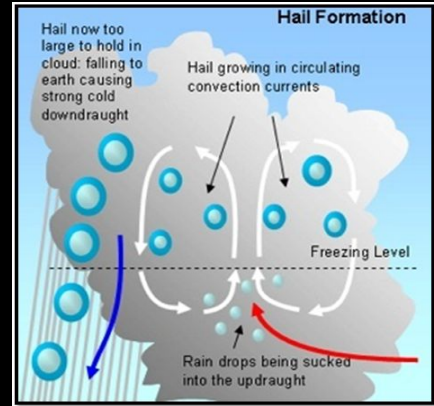
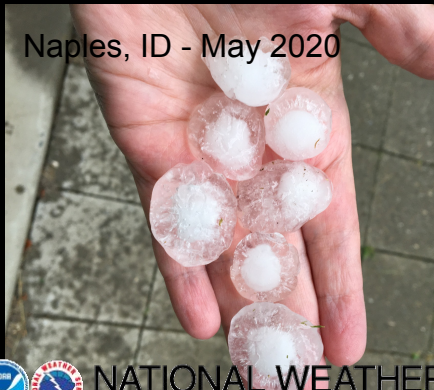
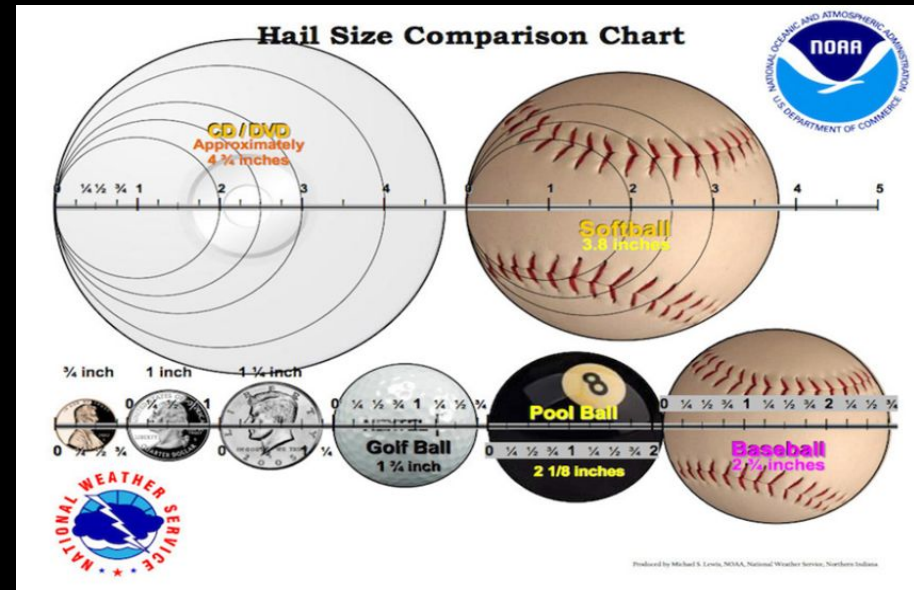
January 13, 2021

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 ≥ 1 " diameter
- Always report the largest Hailstone you see in the pile.



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 spots

Give specific locations of streams & streets



Wenatchee - Sept 2019



Spokane - May 6, 2022



Williams Flats Fire Flood - Aug 11, 2019



Moscow - April 2019

Turn Around, Don't Drown



April 9, 2019 - Pullman

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.



Harrington - Aug 2014



April 11, 2020 - Ritzville



Harrington - Aug 2014



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



June 2019 - Spokane



Ritzville - May 2020



#5 Poll question

Identify this image.



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**



Lightning Safety Tips

Outdoors



- Avoid water, high ground, open spaces, tall objects, metal objects and groups of people.
- Do NOT shelter under small canopies or trees.
- Find indoor shelter or enclosed metal vehicle.

When Thunder Roars Go Indoors!

Indoors



- Avoid water, cords, plumbing.
- Stay away from doors and windows.
- If it is plugged in, stay away from it like a TV or computer. If it's not plugged in, then OK - like phone or tablet.



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!

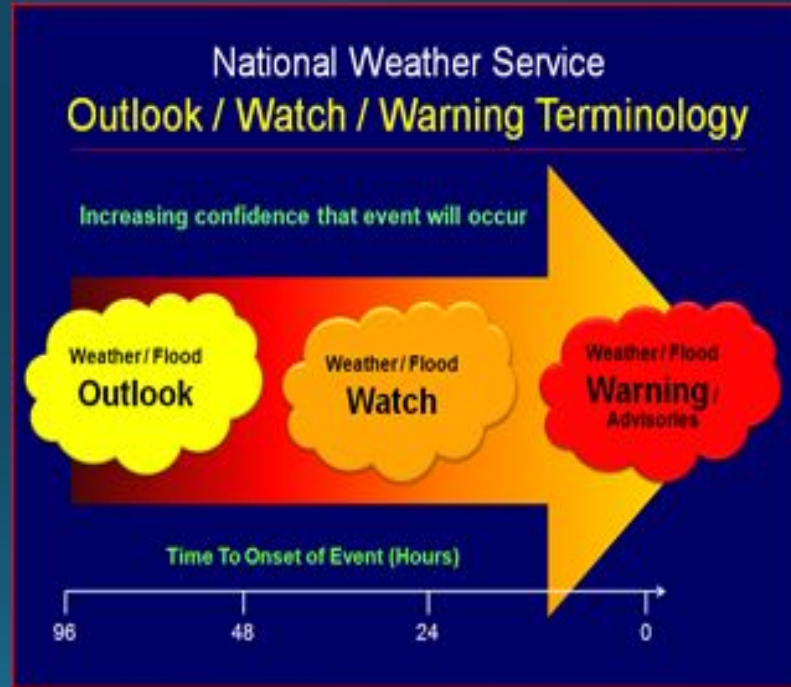


#6 Poll question

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






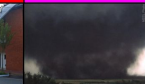
High Wind
Flood
Winter Storm
Red Flag

Stay Informed

National Storm Prediction Center

www.spc.noaa.gov

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



SPC DAY 2 CATEGORICAL OUTLOOK

ISSUED: 1700Z 04/18/2022

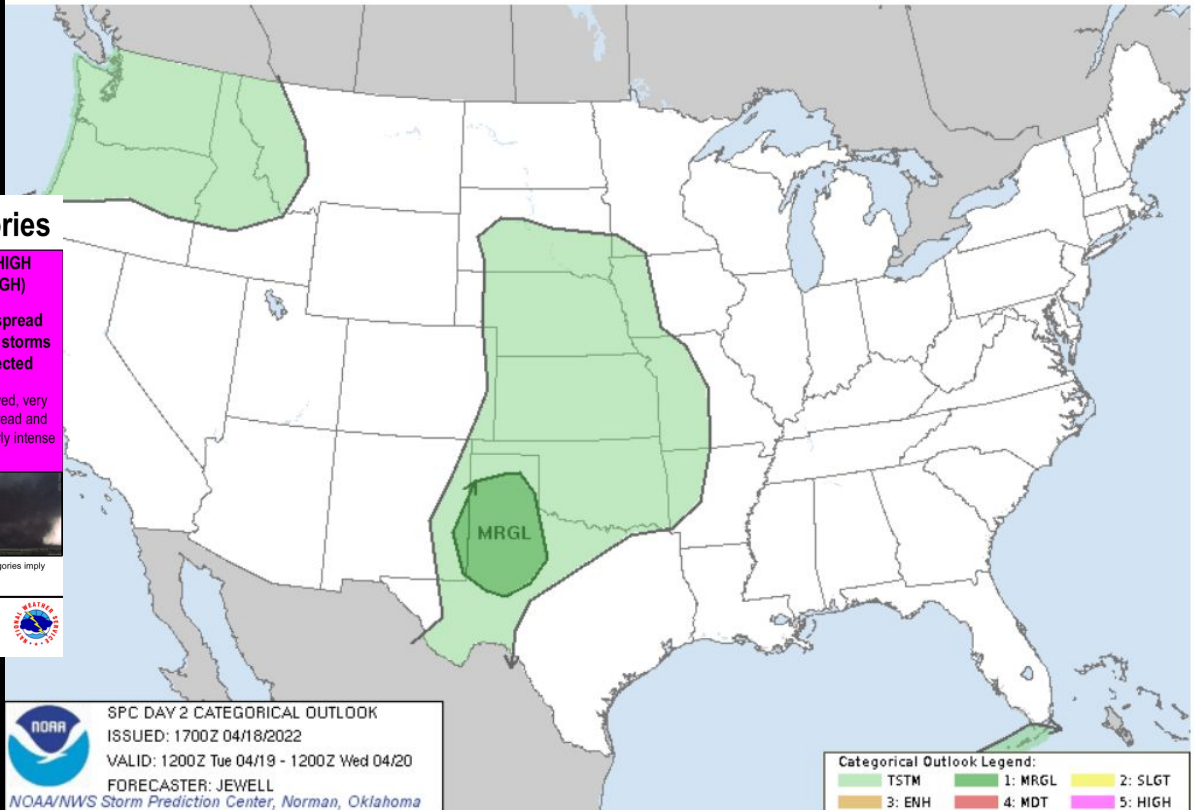
VALID: 1200Z Tue 04/19 - 1200Z Wed 04/20

FORECASTER: JEWELL

NOAA/NWS Storm Prediction Center, Norman, Oklahoma

Categorical Outlook Legend:

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



NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Stay Informed

Watch, Warning, Advisory

TYPE	DEFINITION	THREAT	ACTION
WARNING	Hazard is occurring, imminent, or very likely	Threat to life & property	Take protective action
WATCH	Conditions are <u>favorable</u> for hazard to occur	Threat to life & property	Have a plan of action
ADVISORY	Hazard is occurring, imminent, or very likely	Threat of significant inconvenience	Use caution

Stay Informed

NWS Spokane Web Page

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 2022 Weather Spotter Training Schedule - Register Here!
- Latest Edition of the Weather Watcher Newsletter - Spring 2022

MY FORECAST
Spokane WA

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

5 Day Outlook April Record Cold Breezy Tuesday

Inland Northwest
5 DAY OUTLOOK

Mountain Snow/ Valley rain
Highs 40-50s

Gusty SW Winds 25-40 mph
Isolated thunderstorms NE WA/Northern ID
Highs 40-50s

Evening showers
Highs low 50s

Morning showers, Afternoon isolated thunderstorms
Highs low 50s

Partly cloudy
Panhandle showers
Highs 50s

MON TUE WED THU FRI

National Weather Service - Spokane, WA
35.5662° N 117.644° W April 10, 2022

[Show Caption](#)

Mostly Cloudy
51°F
 11°C [Get Detailed Info](#)

This Afternoon
 30%
 Chance Rain
 High: 53°F

Tonight
 70%
 Rain Likely then
 Rain/Snow
 Low: 36°F

[change location](#)

Click a location below for detailed forecast.

Winthrop Omak Republic Colville Bonners Ferry
 Sandpoint Libby
 Chelan Wenatchee
 Ellensburg Moses Lake Ritzville Rosalia
 Yakima Connelly Pullman Orofino
 Pasco Walla Walla Lewiston Grandview

Watches, Warnings & Advisories
 There are no watches, warnings, or advisories at this time.

Zoom In Zoom Out

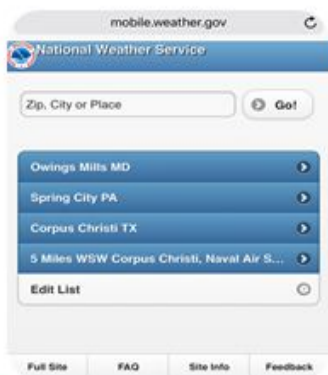
Last Map Update: Mon, Apr. 5, 2021 at 10:44:15 am PDT

Text Product Selector (Selected product opens in current window)

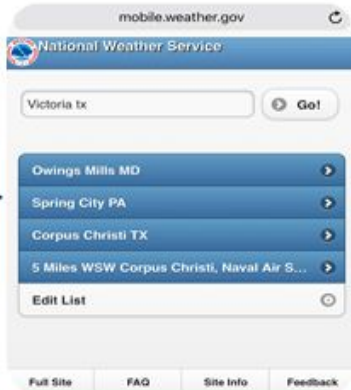
Social Media	Forecast Discussion	Local Radar	Satellite Images	Weather Maps	Graphical Forecasts
Weather Table Forecasts	Climate Graphics	Rivers and Lakes	Observations & Hazards	Fire Weather	Aviation Weather
Weekly Briefing	Hourly Forecasts	Drought Information	Climate	Submit a Storm Report	View Storm Reports

Stay Informed On your Smartphone

mobile.weather.gov



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

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

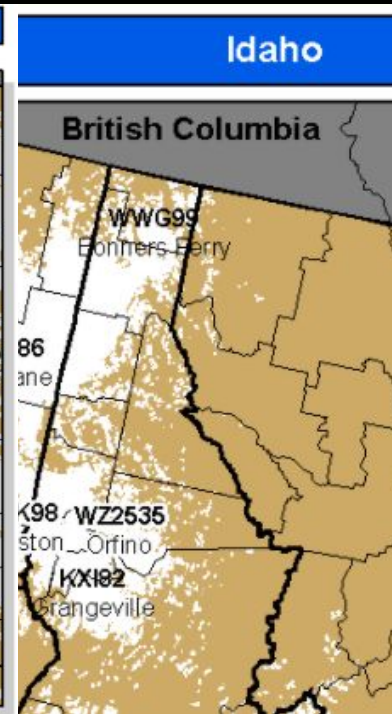
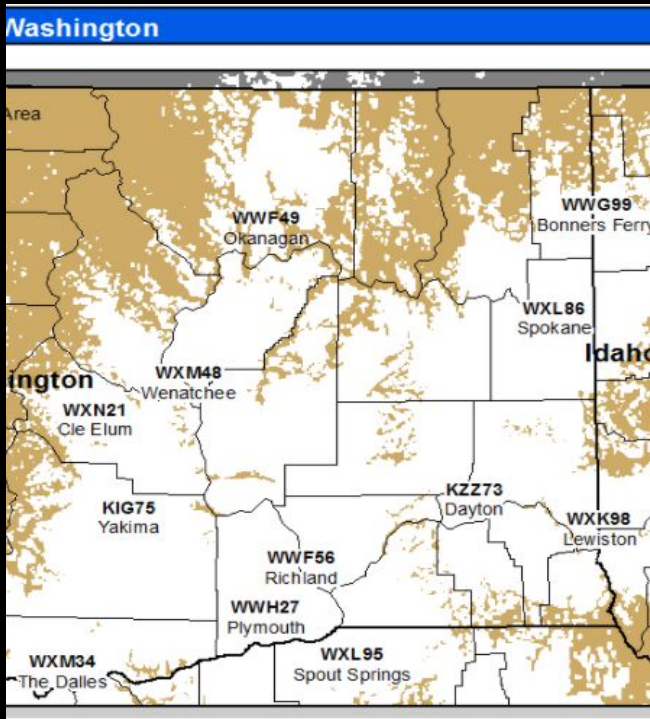


Continuous operation.

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

Volunteer take readings once a day - transmit on mobile device

The screenshot shows the CoCoRaHS website homepage. At the top, it says "COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK" with the tagline "Because every drop counts". Navigation links include Home, Countries, States, View Data, Maps, My Data, My Account, Admin, and Logout. A welcome message reads: "Welcome to CoCoRaHS! 'Volunteers working together to measure precipitation across the nations.'" A central box asks "Who uses CoCoRaHS Observations?" and displays 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: 0.00 - 0.12 (purple), 0.13 - 0.24 (blue), 0.25 - 0.60 (green), 0.61 - 1.44 (yellow), 1.45 - 2.16 (orange), and 2.17 - 2.58 (red). A "JOIN COCORAHS" button is visible on the right side of the page.

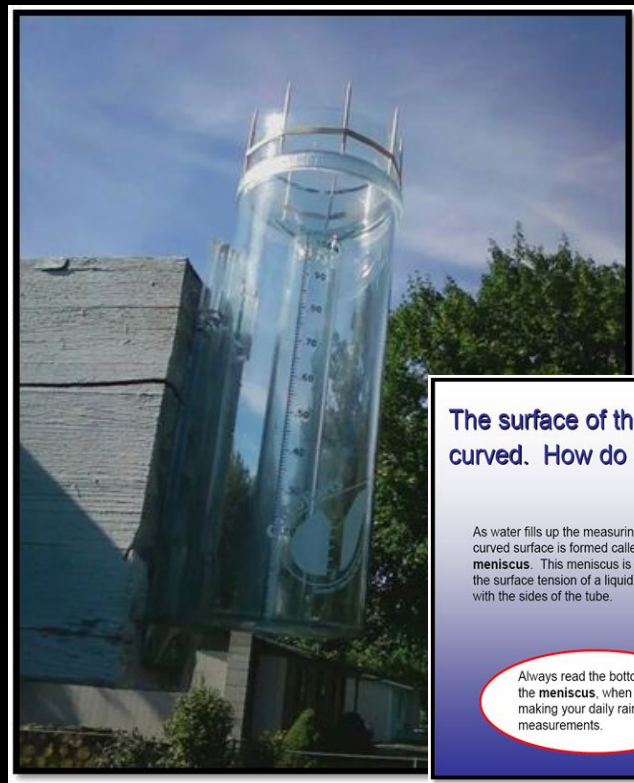


The screenshot shows the CoCoRaHS mobile app interface. At the top, it says "Logout Precip Report Details". The user's profile is "CO-LR-610 Fort Collins 3.5 SW". The "Precipitation Report" section shows: "Observation Date" as 2015-05-13, "Observation Time" as 07:00, and "Rain/Melted Snow" as 0.00. There are toggle switches for "Trace Precip" and "Metric Units (mm/cm)". A "Submit" button is at the bottom.

Community Collaborative Rain, Hail and Snow Network - CoCoRaHS

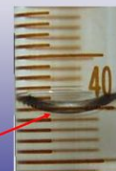
Five easy steps

1. Sign-up at on the CoCoRaHS web site 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

- 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

Spotter

Severe Weather

No instruments
required

Event driven

[Weather.gov](https://www.weather.gov)

CoCoRaHS

Precipitation
only

Rain gauge
required

Daily
commitment

[Cocorahs.org](https://www.cocorahs.org)

CWOP

Weather data

Weather station

Daily
commitment

[Wxqa.com](https://www.wxqa.com)



Weather Spotter Resources Online

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

#7 Poll question

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

Seasonal Outlook 2022

So far this year...

wrcc.dri.edu/

January - Wet for the first half of the month/then dry

February - Cool and dry

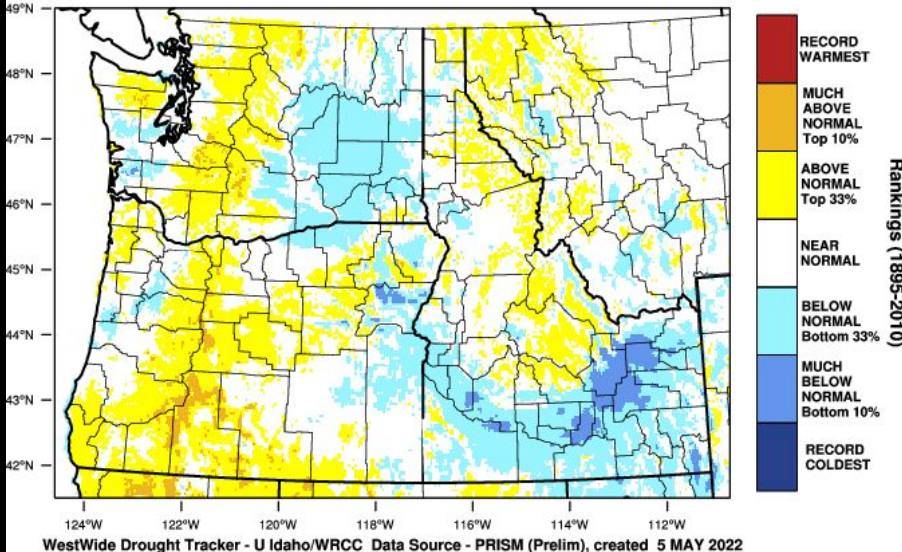
March - Mild and dry

April - Cold and Wet

April - Colder

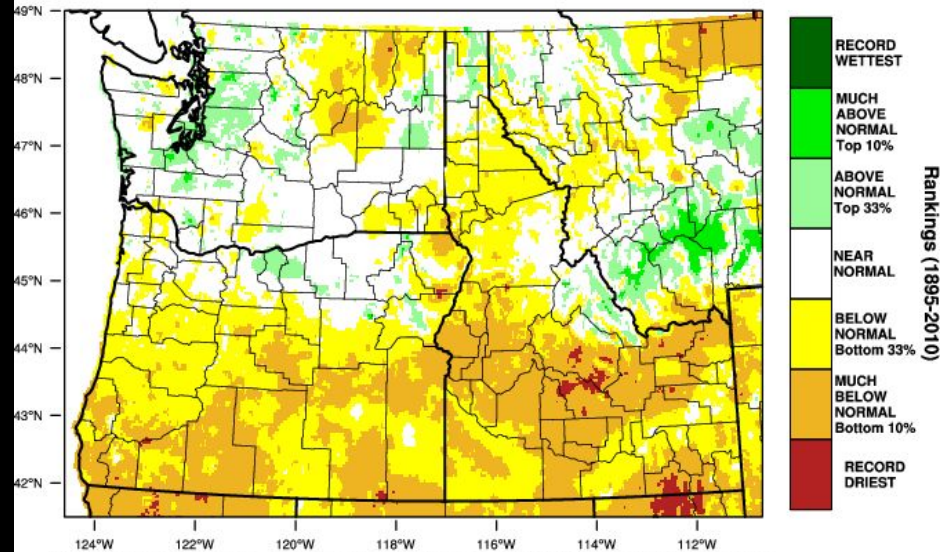
Pacific Northwest - Mean Temperature

January-April 2022 Percentile



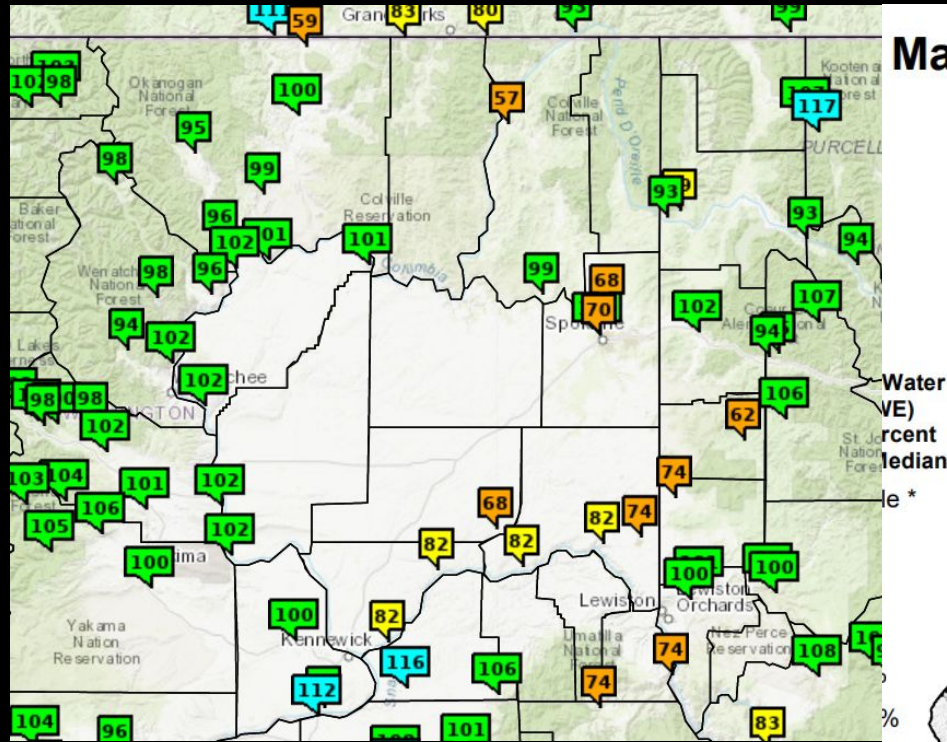
Pacific Northwest - Precipitation

January-April 2022 Percentile



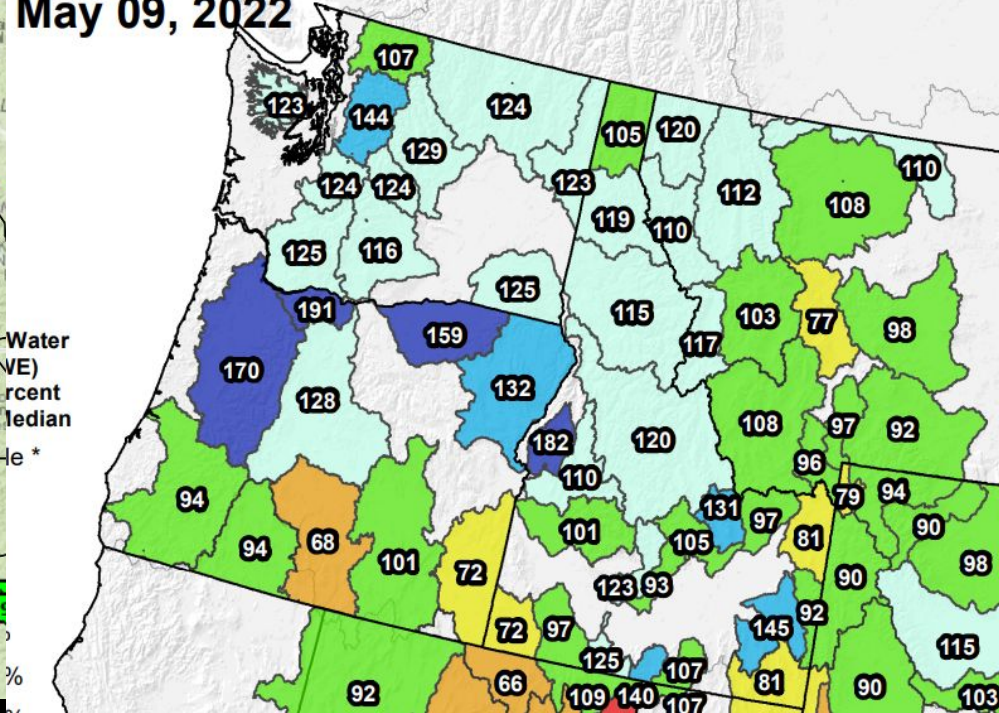
Seasonal Outlook 2022

Water Supply Outlook



Mountain Snowpack

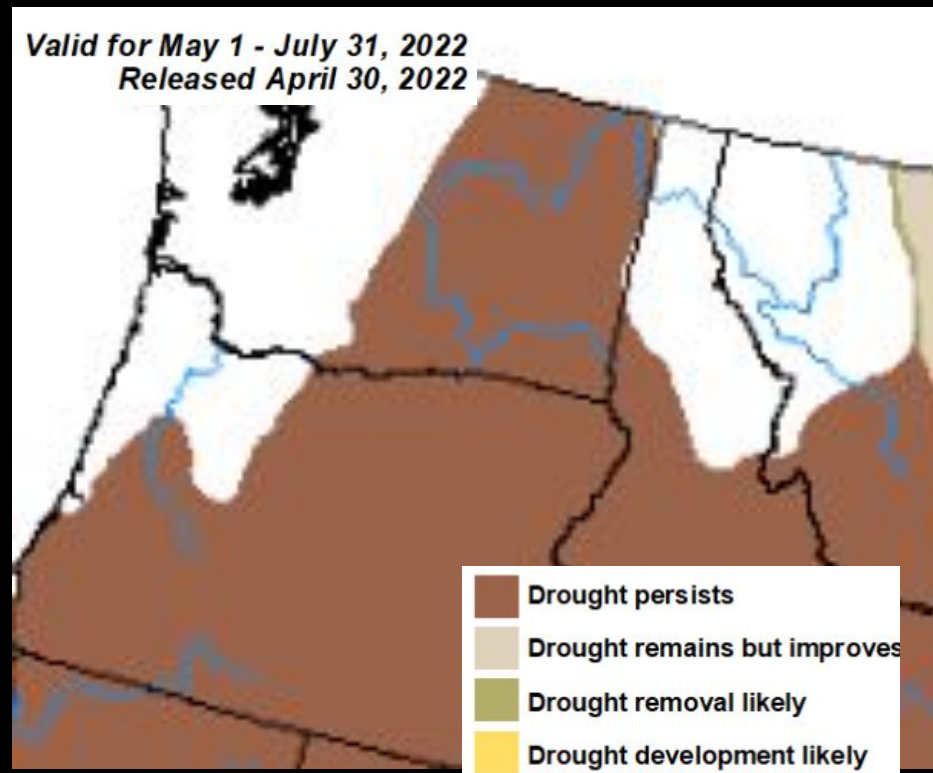
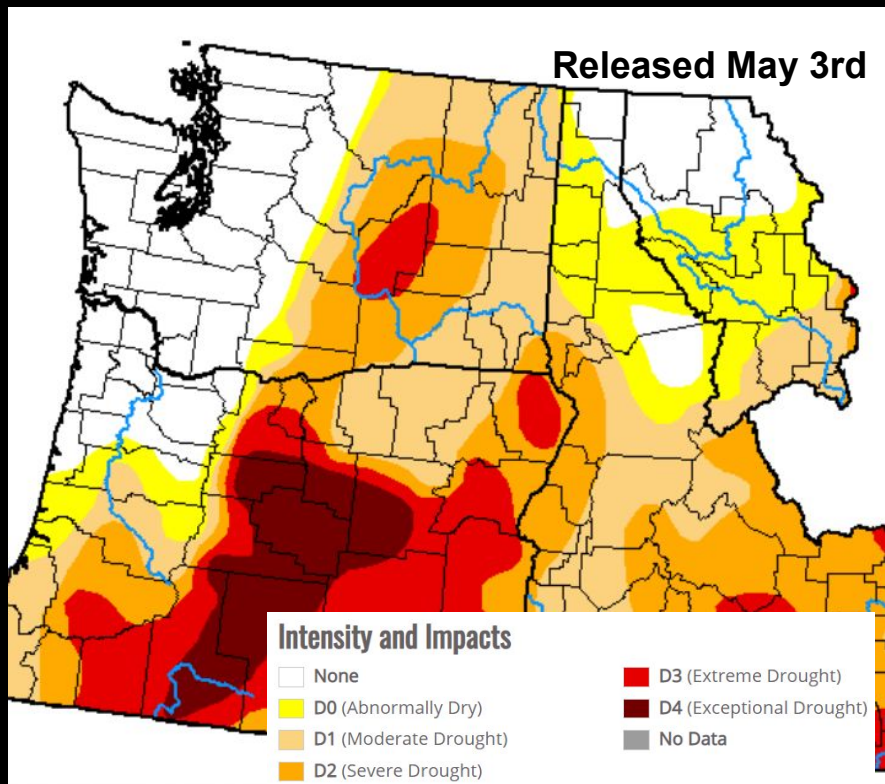
May 09, 2022



Seasonal Outlook 2022

US Drought Monitor & Seasonal Outlook

www.cpc.noaa.gov

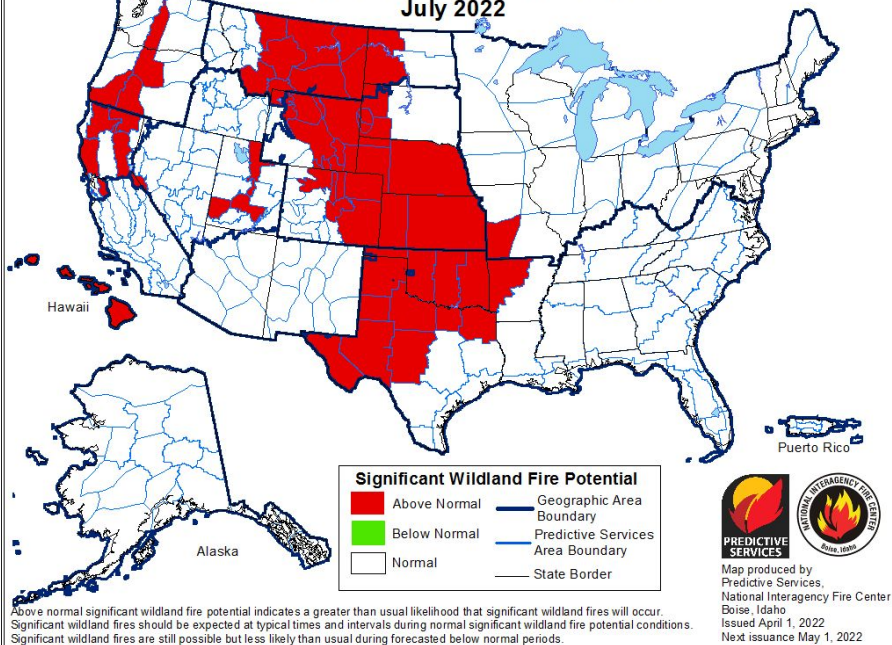


Seasonal Outlook 2022

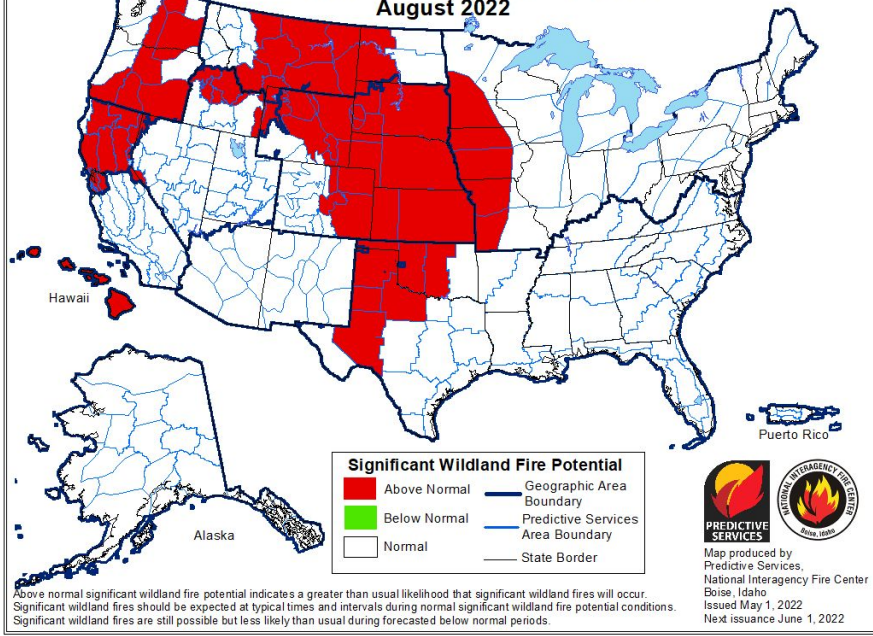
Wildland Fire Potential

www.nifc.gov

Significant Wildland Fire Potential Outlook July 2022



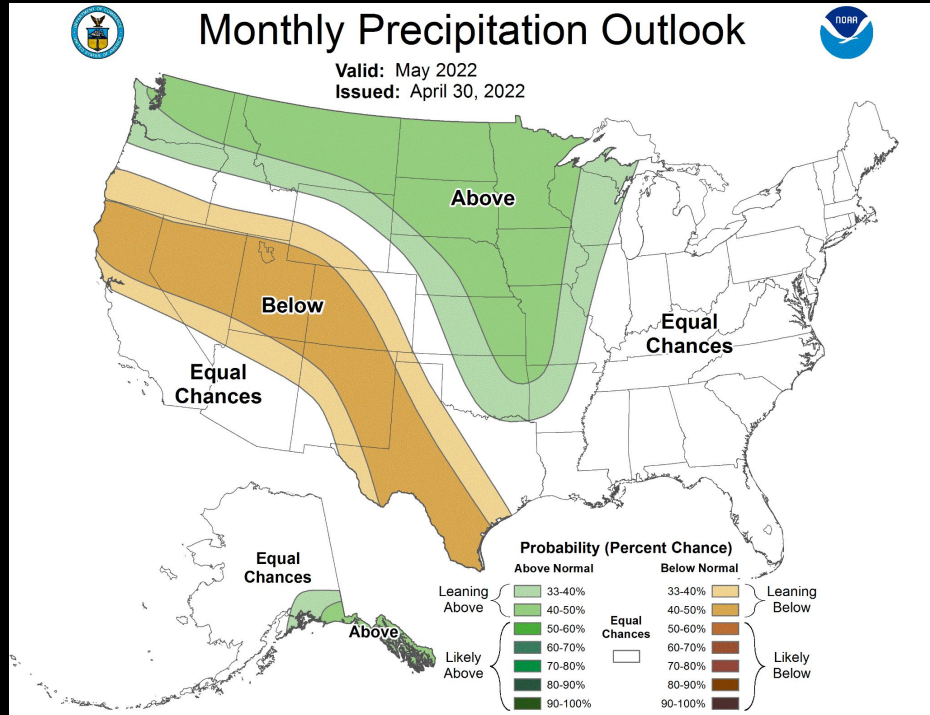
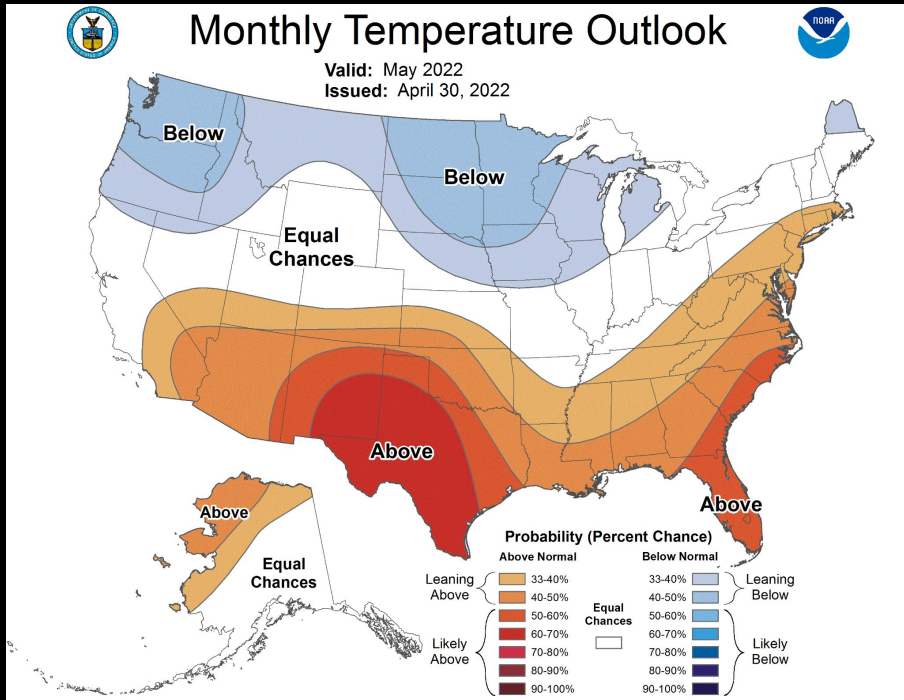
Significant Wildland Fire Potential Outlook August 2022



Seasonal Outlook 2022 - May

One Month Outlook

www.cpc.noaa.gov



NWS + Weather Spotters = Saved Lives

nws.spokane@noaa.gov

THANK YOU!

What's Next?

You will receive a follow-up email

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

Any Questions?

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

View from Steptoe Butte, May 2018

