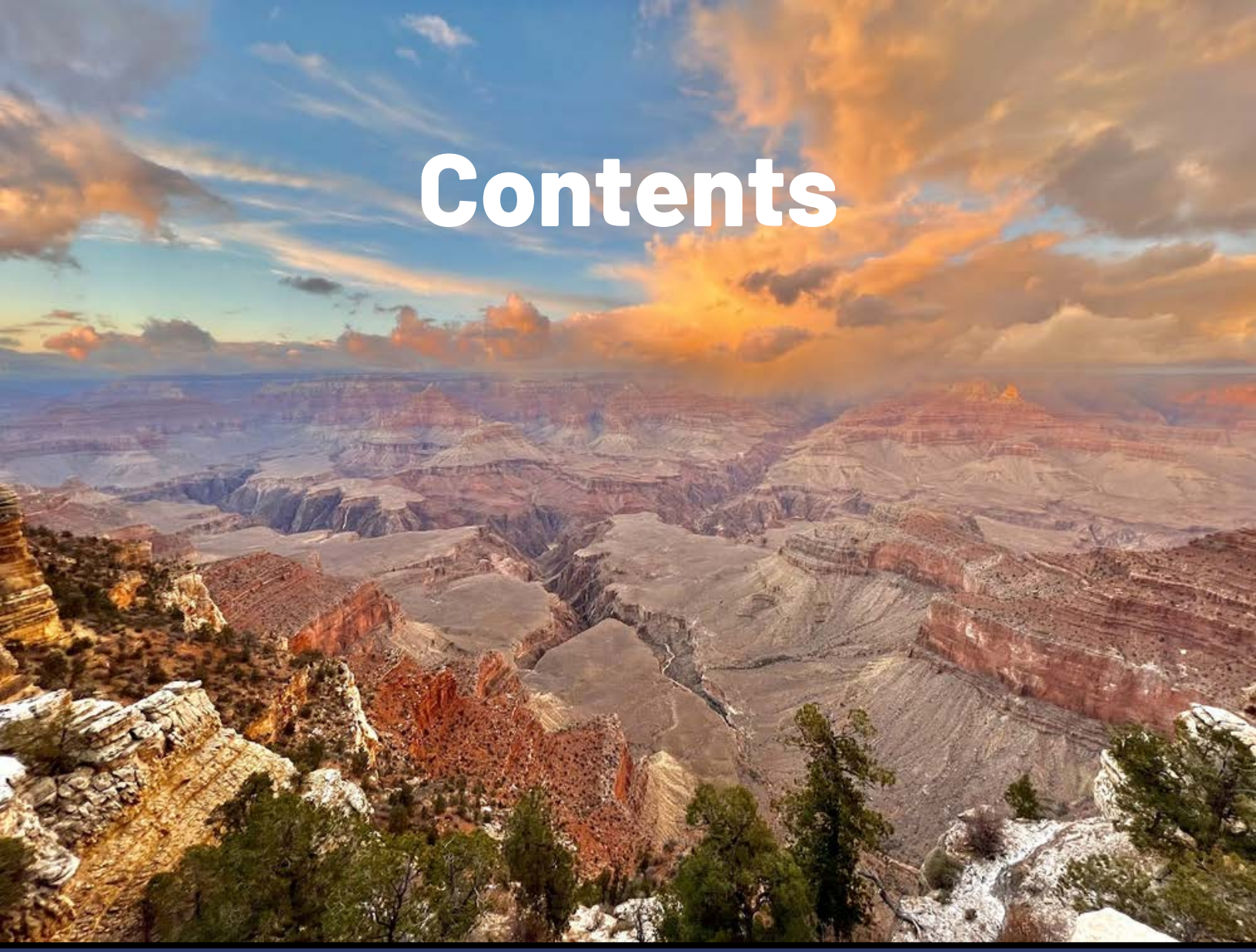
National Weather Service
Flagstaff, Arizona

Annual Report 2022



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NWS Flagstaff: Northern Arizona's Leading Weather Experts

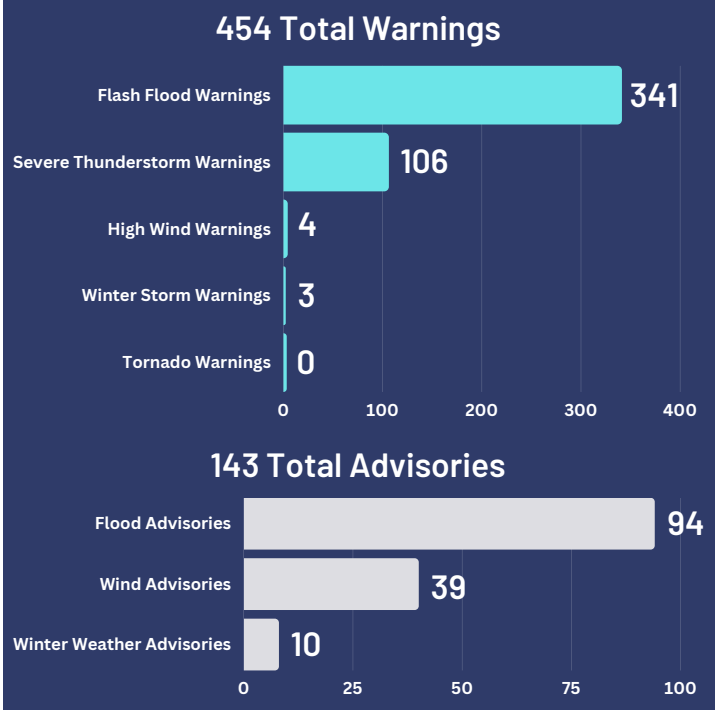
Dr. Brian Klimowski, Meteorologist-in-Charge

The weather of 2022 provided many forecast challenges, severe impacts, drought relief, and many opportunities for the NWS Flagstaff to provide needed services to our partners and stakeholders.

While the winter started out relatively quiet our fire season raged early, with many homes lost and several neighborhoods impacted for months by the wildfires and post-fire flooding in the Flagstaff area. We appreciated the opportunity to stand with our local partners in coordinating weather information and warning notifications to the local area throughout the summer.

The longest monsoon season in memory produced numerous flash floods and severe thunderstorms. NWS Flagstaff issued 341 flash flood warnings and 106 severe thunderstorm warnings in 2022. The abundant rains this summer brought some relief to the ongoing drought, but the lingering drought impacts are ever-so-present as seen in our reservoir levels. In most areas, 2022 will go down as near normal in precipitation, with a larger than normal fraction falling during our busy monsoon season.

Products Issued by NWS Flagstaff in 2022



We're looking forward to 2023, and will be working hard to improve the forecasts and decision support services we provide. We have several new staff on board who will bring energy and expertise and experience to our forecasting, maintenance, administrative, and training programs. If there are any changes or enhancements you'd like to see regarding our forecasts, communications, graphics or support, please let me know. As the authoritative source of weather information in northern Arizona, the National Weather Service in Flagstaff is here to serve you.

Service During the 2022 Wildfire Season

In Flagstaff's Buffalo Park, the Pipeline fire draws onlookers

A dry start to 2022 led to an early fire season across northern Arizona. By mid-April, two large wildfires were already burning across portions of Coconino and Yavapai counties, and periods of critical fire weather conditions persisted until heavy monsoonal precipitation drenched the state by the second half of June.

Did you know?

In 2022, local Incident Meteorologists were deployed to 4 large wildfires across the western US.

Major Fires in the Flagstaff Area

The Tunnel Fire
April 17, 2022
20,000 acres
30 residences burned

The Pipeline Fire
June 12, 2022
26,000 acres
Triggered fire scar flooding crisis

NWS Flagstaff tours the Pipeline fire scar with USFS

When wildfires strike, NWS Flagstaff remains by your side.

We provide impact-based decision support services 24/7/365.

NWS Flagstaff supports the Prescott Interagency Dispatch Center during the heart of the fire season. Meteorologists provide tailored fire weather and aviation briefings each day, with additional on-demand briefings and weather support conducted as needed.

Collaborating and Communicating Through The Historic Monsoon Season of 2022

Dr. Brian Klimowski, Meteorologist-in-Charge

Timely and relevant forecasts, watches and warnings are major strengths of the National Weather Service. However, new and evolving needs in society call for the NWS to shift much of our efforts to the impact-based decision support services (IDSS) approach.

During the spring and summer of 2022, NWS Flagstaff worked closely with the USFS, City of Flagstaff, Coconino County, and other partners during our severe local wildfires (Tunnel and Pipeline Fires) and the subsequent post-burn flash flooding. NWS Flagstaff provided on-site briefings and support during the wildfires, with dedicated meteorologists (IMETs) on the front line with those managing the fires.

Prior to the monsoon season, the NWS worked closely with the local officials assessing flood potential, developing thresholds for anticipated flash flooding, and warning communication strategies. During the active monsoon, the NWS provided real-time interaction and communication on the minute-by-minute monsoon rainfall threats so that coordinated warning messaging from the NWS, Coconino County, and the City of Flagstaff could reach the greatest number of people. In 2023, the NWS will continue to work with local partners to best address any threats using the latest in forecast and warning techniques and technology.

Impact-based Decision Support Services (IDSS) are forecast advice and interpretative services the NWS provides to help core partners, such as emergency personnel and public safety officials, make decisions when weather, water and climate impacts the lives and livelihoods of the local populations.

Keeping the Information Flowing

NWS Flagstaff Electronics Staff

- 2 Electronic Technicians
- 1 Electronic Systems Analyst

Mission:
To maintain all assigned electronics and weather sensing equipment in the Flagstaff County Warning Area (CWA).

Essential equipment at NWS Flagstaff includes the Weather Radar, Automated Surface Observing Systems, NOAA Weather Radio Transmitters, and the Upper Air System.

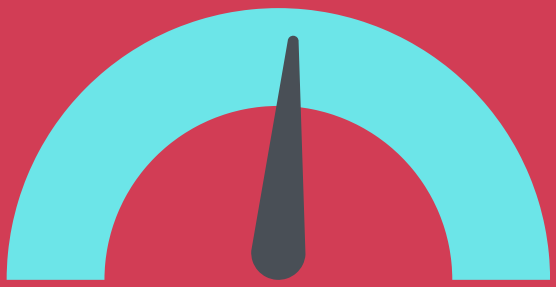
Day-to-day maintenance and repair of the weather equipment in the Flagstaff CWA can range from trips to remote weather stations in the Grand Canyon one day, to snow-covered mountaintops the next.

NWS Flagstaff Technicians are trained in: Snowcat, snowmobile, Utility Terrain Vehicles, winter survival, and Tower Fall Protection/Rescue.

Maintenance Statistics CY 2022

- >98% Equipment Uptime
- 9 Program Areas
- 35,000 Miles Traveled
- 1,000 Maintenance Orders Completed
- 2,000 Maintenance Hours

Cooperative Observer Program



52 active Cooperative Observing Stations

- Each visited >1x/year
- 11 are equipped with FPR-E weighing rain gauges that record 15 minute data
- 3 are newly opened/reopened stations as of 2022

FPR-E at Sierra Ancha

NWS Flagstaff hosted a COOP Appreciation Day in October. During this celebration we presented two Benjamin Franklin Awards for 55 years of service. Carl-Eric Grandfelt was presented the Thomas Jefferson Award. This is the highest award presented to NWS COOP observers, with only up to 5 of the nearly 10,000 observers awarded one annually. We also had John and Lynda Kieckhefer receiving the John Campanius Holm Award. This is the second highest NWS Award presented.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

Benjamin Franklin
Award
Presented to

For serving 55 or more years as a Cooperative Weather Observer

Presented in honor of Benjamin Franklin (1706-1790). Like everyone else, Franklin was affected by weather; but unlike most people of this time, he tried to explain the reasons for various weather related phenomena, and even discovered some ways to predict the weather.

Regional Director *Assistant Administrator for Weather Services*

Connecting With the Communities We Serve

Tony Merriman, Warning Coordination Meteorologist

Left to right: Benji, Ania, and Tony meet with Ed Tso at the Navajo Nation Emergency Management Center in Window Rock

With COVID restrictions being lifted for most of the year, we were able to get back out into the community and meet with all the great folks we serve! Our office was not only able to re-engage with the public, but we were also able to meet up again with our core partners as well.

We started off the year meeting with Glen Canyon NPS and our NWS Salt Lake City counterparts to better support Lake Powell safety operations. From that meeting, we created multi-lingual rack cards with safety messages for heat, flash flooding, wind, and lightning. We also worked with Grand Canyon NPS to enhance heat safety messaging.

Another integral part of re-engaging with core partner requirements was being able to participate in in-person tabletop exercises. We worked with Coconino County to develop and discuss how an extreme heat event might look like. We also participated in an in-person tabletop exercise with the Hopi Tribe for a potential Pasture Canyon Dam break. When we met with Navajo Nation Emergency Management, we learned more about how drought conditions impact the Four Corners area.

The NWS Flagstaff County Warning Area includes a multitude of landscapes, including this ancient Hopi farmland near Moenkopi

Connecting With the Communities We Serve

This year we set up outreach booths at various events. We had our outreach booth at the Firewise Fire Expo in Prescott, the STEM event at Fort Tuthill near Flagstaff, the Coconino County Fair, and the Science in the Park event in downtown Flagstaff. We were able to provide various cloud charts, coloring pages, and other material to over 700 individuals combined! And of course, we had our popular cloud in a jar demonstration that was a big hit with the kiddos, and kiddos at heart.

Paige shows eager kids how to make a cloud, at Flagstaff's Science in the Park


NWS Flagstaff celebrates a successful open house

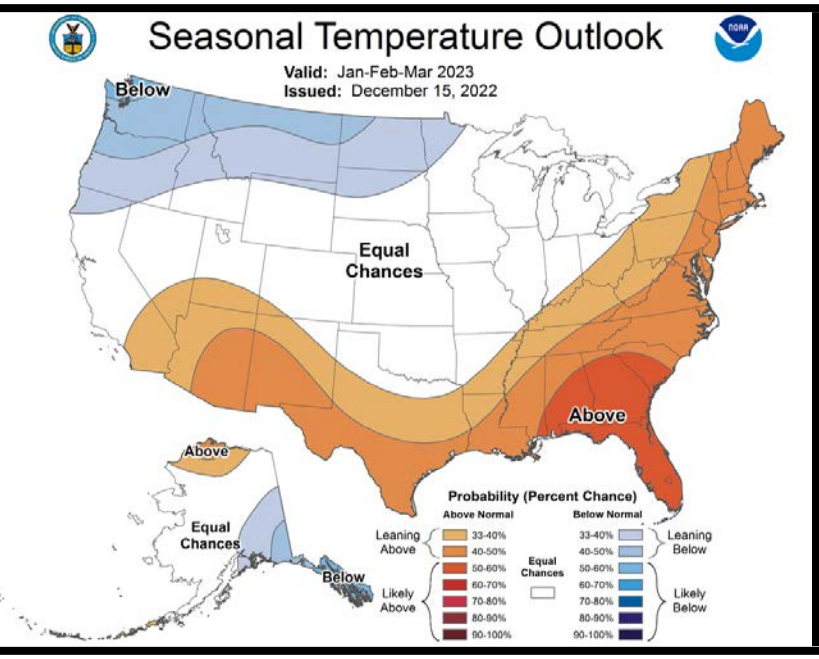
For our SKYWARN storm spotter program, this was the first year since 2019 that we were able to host in-person SKYWARN storm spotter training sessions. We were able to teach the course in each county, with the various public libraries providing the venues for the communities we serve. We recruited over 50 new spotters, which helps us tremendously with severe weather reports during the monsoon season

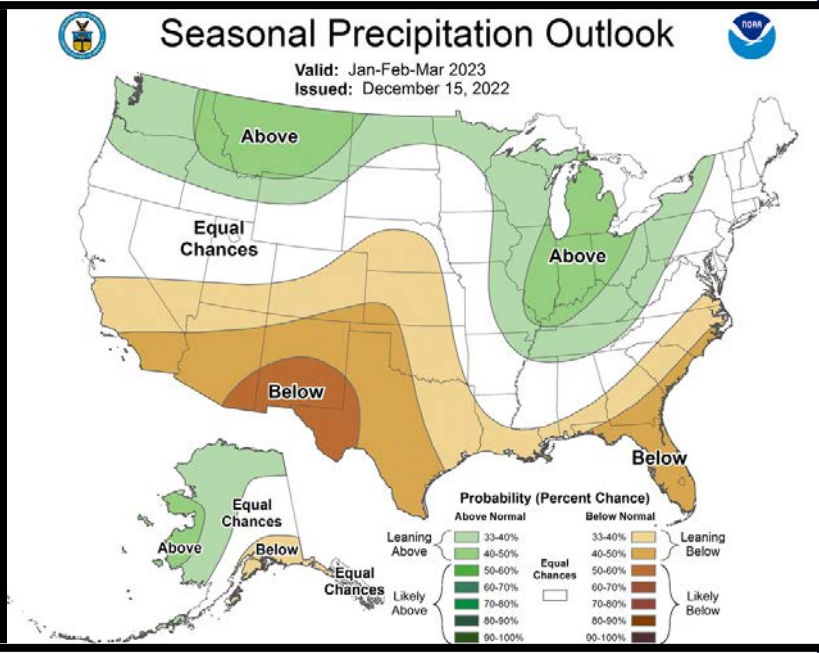
We were also able to give general weather information talks in classrooms across the region. As part of the Festival of Science, we were able to visit well over 20 classrooms in-person and talk about the water cycle as well as other science-related topics pertaining to meteorology. We also visited Quality Connections, which is an organization that helps individuals with disabilities become independent, productive members of the community.

Finally we were able to host our annual open house event in October. We had over 230 individuals visit our office! Our guests toured the facility, met with our various core partners, learned about different weather instrumentation, and watched our balloon launch. The feedback from the community was overwhelmingly positive, with plans for another open house event during the fall of 2023.

Rest of Winter Outlook

The outlook for January through March, issued by the NWS Climate Prediction Center, calls for a tilt in the odds toward drier and warmer than normal conditions over Arizona. There will still be winter storms and cold weather, but the frequency of wintry conditions may be less than normal. This outlook takes into account the presence of La Niña, a cooling of the equatorial waters off the South American coast that affects global weather patterns. A typical La Niña impact over the southwestern United States is drier and warmer than normal winters.





For reference, here are the normal precipitation (rain & melted snow) and snowfall amounts for the January through March period for several locations across our region.

January through March

Normal Precipitation and Snowfall

	Chinle	Flagstaff	Page	Payson	Prescott	Show Low
Normal Precipitation	2.14”	6.10”	1.61”	6.49”	4.76”	3.42”
Normal Snowfall	3”	56”	2”	12”	8”	10”

Welcome TO THE TEAM

Krista Ames-Cook -

Krista is the Administrative Support Assistant (ASA) at our office in Flagstaff (Bellemont), Arizona and started here in February 2022. She graduated from Pepperdine University with a bachelor's in Liberal Arts with an emphasis in Elementary Education, and later completed a master's degree in Educational & Administrative Leadership. After teaching elementary school for over 2 decades, Krista left the classroom and worked in various administrative support roles in intellectual property and higher education before relocating to northern Arizona and joining NWS Flagstaff. Her hobbies and interests include traveling (especially road trips on Route 66), photography, spending time with family and friends, visiting theme parks, and being a "backyard tourist".

Benji Johnson -

Benji is a Meteorologist at our office in Flagstaff, Arizona and started here in June 2022. He graduated from the University of Wisconsin–Madison with bachelor's and master's degrees in Atmospheric and Oceanic Sciences. Benji's hobbies include exploring abandoned places and playing the piano.

Lamont Bain -

Lamont is the Science and Operations Officer (SOO) at NWS Flagstaff, Arizona and began this new role in January 2022. He graduated from the University of Oklahoma (OU) in 2011 with his B.S. in Meteorology and a minor in Mathematics. He also graduated from the University of Alabama in Huntsville (UAH) in 2014 where he earned his M.S. in Meteorology/ Atmospheric Science. During this time at OU and UAH, Lamont volunteered at National Weather Service Offices in Norman, OK, and Huntsville, AL, respectively. Lamont worked in the Oil and Natural Gas industry for a brief period after graduation before beginning his NWS career at the NWS office in Fort Worth, TX in 2014. Lamont's hobbies and interests include hiking/walking with his dog Sandy, weightlifting, traveling, eating exotic foods, and watching sports (Go Bucs, Rays, Lightning, and OKC Thunder).

Justin Broos -

Justin is one of our Electronics Technicians (ETs) and joined our Flagstaff office in October 2021. He has an A.S. in Information Technology from the University of Phoenix and served in the U.S. Army from 1995 to 2001 as a Satellite Communications System Operator/Maintainer. Before joining NWS Flagstaff, Justin worked at L3Harris Technologies in Salt Lake City for 15-years in manufacturing and also as a field service representative in Afghanistan and in South Korea. When not at work, Justin winds down at home by binge watching TV and/or finding time for some low impact outdoor activities. Justin also gets a kick out of writing Amazon reviews and likes to discover interesting (sometimes divey) restaurants and posting Yelp reviews about them.

Larry Dooley -

Larry is the Observations Program Leader (OPL) at our office in Flagstaff, Arizona and started here in January 2022. He graduated from Black Hills State University with a degree in Science. He previously worked at the NWS Alaska Regional Headquarters, NWS Billings MT, and NWS Springfield MO. Larry also served in the U.S Air Force (USAF) and USAF Reserve. His hobbies include camping and seeing new places. He hopes to one day see every U.S. National Park.

Jeremy Johnson -

Jeremy is one of our Electronics Technicians (ETs) here in Flagstaff and started working with the National Weather Service (NWS) and this office in October 2021. He used to work on F-16s for the Oklahoma Air National Guard in Tulsa prior to joining NWS. Jeremy received an Associates degree from the Air Force. His previous work helped him land this awesome job in the Weather Service. Other than working at NWS Flagstaff, Jeremy also works part-time for the Arizona Air National Guard in Tucson as an Avionics Technician. "Arizona is great, and I enjoy getting to see the outdoors."

Jeremy Mazon -

Jeremy graduated from Embry-Riddle Aeronautical University in 2011 with a BS in Applied Meteorology and from the University of Arizona in 2013 with a MS in Atmospheric Sciences. After working both in the private sector and in higher education, he joined the National Weather Service in Flagstaff as a Meteorologist in February 2020. Jeremy has served in the Arizona Army and Air National Guard since 2014. Jeremy is actively involved in our community as a high school wrestling coach and in youth ministries at a local church, but his most valued time is spent with his wife and three young children.

Valerie Meola -

Valerie is a Lead Meteorologist at our office in Flagstaff, Arizona and started here in mid-January 2022. She graduated from Arizona State University with a degree in Geography and completed some graduate work in climatology at the University of Delaware. Valerie started her National Weather Service career at the Philadelphia/ Mount Holly weather forecast office and spent almost 16 years there before moving to Flagstaff. Her hobbies include baking, drinking coffee, visiting new areas, trying all kinds of food, and spending time with family and friends. She is also a huge Sun Devils fan and tries to go to games when she can get down to the Phoenix Valley to see them.

Reggie Roakes -

Reggie is a Meteorologist and Incident Meteorologist (IMET) at our office in Flagstaff, Arizona and started here in December 2022. He graduated from Mississippi State University with a bachelor's and master's degree in meteorology, along with a minor in GIS, and previously worked at NWS Blacksburg, VA. Reggie's hobbies include camping, hiking, skiing, kayaking, CrossFit, and cooking.

Paige Swenson -

Paige is a Meteorologist at our office in Flagstaff, Arizona and started in May 2022. She graduated from Embry-Riddle Aeronautical University in Prescott, Arizona in December of 2020 with a bachelor's degree in Applied Meteorology. She also obtained her master's in Leadership with an emphasis in Emergency Management and Homeland Security from Grand Canyon University in June of 2022. Outside of work, Paige enjoys working on puzzles, going for walks, listening to music, and sleeping.

FLAGSTAFF, AZ
NATIONAL WEATHER SERVICE

Weather Forecast Office (WFO) Flagstaff (FGZ) Staff

(effective December 5, 2022)

Brian Klimowski	Meteorologist-in-Charge (MIC)
Tony Merriman	Warning Coordination Meteorologist (WCM)
Lamont Bain **	Science Operations Officer (SOO)
David (Dave) Olson	Electronic Systems Analyst (ESA)
Robert (Rob) Rickey	Information Technology Officer (ITO)
Larry Dooley **	Observation Program Leader (OPL)
Jeremy Johnson *	Electronics Technician (ET)
Justin Broos *	Electronics Technician (ET)
Krista Ames-Cook **	Administrative Support Assistant (ASA)
METEOROLOGISTS:	
Ben Peterson	Lead Forecaster
Darren McCollum	Lead Forecaster
Justin Johndrow	Lead Forecaster
Megan Taylor	Lead Forecaster
Valerie Meola **	Lead Forecaster
Mark Stubblefield	Forecaster
Jeremy Mazon *	Forecaster
Carter Humphreys *	Forecaster
Evan LaGuardia *	Forecaster
Cynthia (Cindy) Kobold *	Forecaster
Paige Swenson **	Forecaster
Benji Johnson **	Forecaster
Reggie Roakes **	Forecaster

Source: https://www.weather.gov/fgz/OurOffice

* = Joined Flagstaff office during 2021
** = Joined Flagstaff office during 2022