



The December 2003 Winter Storm & Closure of I-5 at Siskiyou Summit

Ryan Sandler, *Warning Coordination Meteorologist*

On early Saturday morning, December 27th, 2003, our office issued a winter storm watch for most of Siskiyou County above 2500 feet. Snow was expected to begin Sunday afternoon and increase in intensity Sunday night before tapering off to snow showers Monday morning with a total of 6 to 12 inches. The NWS forecast was updated late Saturday evening to include a winter storm watch Sunday night and Monday for the Cascades and Siskiyou with the potential for 1 to 1 1/2 feet of snow and windy conditions. This area included Siskiyou Summit on I-5. These watches were then upgraded to winter storm warnings early Sunday morning, the day of the storm.



Vehicles stranded near Siskiyou Summit. Photo courtesy of ODOT.

Keep in mind that Sunday was a big travel day with travelers returning home after the long Christmas holiday. First, the good part of the forecast. The timing was excellent with snow becoming heavier Sunday night

and tapering off Monday morning. Now, for the not so good part. The winter storm watch, which included Siskiyou Summit, was only issued 18 hours before the heavy snow began to fall. This meant that travelers went to bed Saturday night without hearing that a winter storm watch or a big storm would severely impact the region late Sunday. Remember that this was 2003 and there were no smartphones capable of receiving updated weather alerts and the internet search for weather forecasts was primitive by today's standards. In 2003, nearly everyone received their weather forecast through a newspaper, radio, or television.

Have a question you'd like to see answered in the next edition? Send it our way! The next issue will be published in March 2023 for the Spring edition.

Submit a Question for the Next Issue of the Crater Chronicle's "Ask A Meteorologist" Column!

E-mail:
Misty.Firmin@noaa.gov

INSIDE THIS ISSUE

2003 Winter Storm	1-2
Where to Find Road Conditions	2
How to Measure Snow	3
Ask the ASA	3-4
Tales from the COOP	5
Post-Fire: Common BAER Team Responsibilities	6-8
About Us	9

Snowfall rates increased late Sunday afternoon and early Sunday evening as significant traffic was moving along I-5 between Oregon and California. Winds were picking up causing drifting and blowing snow. What resulted were accidents and hundreds of drivers stranded on I-5 near Siskiyou Summit spending a long, frigid night in their cars with little food or water. Even one of our meteorologists got stranded in this storm!

The storm closed about 150 miles of I-5 with the greatest snow totals of 2 feet across Yreka, Mt. Shasta City, and Dunsmuir. Siskiyou Summit received about 1 1/2 feet of snow in a relatively short time and Mt. Ashland Ski Area saw 2 to 3 feet of snow. Peak winds in Weed, California gusted to 61 mph during the storm. The combination of heavy snow and gusty winds resulted in numerous downed trees and power outages. The state police reported snow drifts of 6 to 7 feet on I-5.

Twenty years later, the combination of greatly improved forecasting, communications, and road maintenance make this 2003 disaster less likely to happen but still possible if a big storm strikes on a busy travel day. The best thing you can do to prepare is check the forecast before you leave and stay off the roads during a winter storm.




Snow drifts blew over the Jersey barriers on I-5 near Siskiyou Summit. Photo courtesy of ODOT.


Where to Find Road Conditions when Snow Affects Travel

Misty Firmin, *Lead Meteorologist*

When snow is occurring or has just ended, we receive A LOT of calls at the office from people asking what the road conditions are like. As much as we would like to be able to tell callers about road conditions, we simply can not. This is because we are meteorologists; we forecast the weather. If we were to give road conditions, that would be the equivalent of calling the Department of Transportation for a weather forecast. We can give you a forecast for an ideal window when snow will be less likely to impact travel, but we simply can not judge what ideal road conditions are. What may seem like ok or ideal road conditions for one of us in the office, may be considered highly treacherous for the caller. Aside from that, we will just simply look at area webcams for an idea on what road conditions are, which are the same sources available to the public. So when we receive a call inquiring about road conditions, we refer the callers to either tripcheck.com or 511 if they are looking for Oregon road conditions. If they are looking for California road conditions, we refer them to the Caltrans website, dot.ca.gov.



For a weather forecast:
www.weather.gov/mfr
 541-773-1067 , we're here 24/7/365



For Oregon Road Conditions:
www.tripcheck.com
 Call: 511 (while in OR)



For California Road Conditions:
www.dot.ca.gov/
 Call: 511 (while in CA) or 1-800-427-ROAD (7623)

MEASURING SNOW



WHERE

Best: Open, flat grass

Good: Deck (Flat surface)

Avoid: Trees (Shaded areas)

PROCESS

1. Take a handful of measurements
2. Round to the nearest 0.1"
3. Average the measurements

SHARE IT!

@NWSMedford
541-773-1067

Ask the ASA

Interview led by Miles Bliss, *Forecaster*

The Administrative Support Assistant (ASA) is the welcoming figure in each NWS office that I have visited. Their wide ranging duties center on supporting the management team and, as a result, supporting the entire office. At the Medford Forecast Office, Roberta is our ASA. Her background prior to the NWS is vast and engrossing to hear about. I asked a series of questions that focus on how her background influences her work with the National Weather Service and to gain a better perspective into how the ASA role supports the office:

M: How do you describe your job to new acquaintances when they ask you what you do?

R: Mostly I joke that I keep the lights on. Honestly, I think a good ASA serves to ensure smooth continuity of operations. They will move from task to task, quietly

supporting the mission.

I try to end each work day by asking if anyone needs anything before I depart.

M: You've worked a variety of other jobs in the federal workforce. One that I enjoy hearing about is your work at the CDC. Would you share some of what you did and how the National Weather Service may benefit from adopting some of their practices?

R: My CDC position focused on management analysis; basically I looked for areas of potential weakness and developed methodologies and management controls to improve those areas. One assignment I enjoyed was

when I was tasked to work on a project to standardize data terminology as it related to cross cutting areas of public health.

I think the National Weather Service could adopt some aspects of disease prevention protocols and public health reporting mechanisms and adapt them to improve outreach related to severe weather impacts and community readiness. In my mind, a winter storm is the equivalent of a measles outbreak, and climate change compares to a pandemic.

M: The description of an ASA is to support the management staff. During your time here, you have supported two different Meteorologists-in-Charge (MIC). From your perspective, what is the most constant or demanding challenge of their roles and does the ASA have a role in helping out

R: Having worked for two federal science agencies, I've observed that most scientists are strong introverts. A Meteorologist-in-Charge may be an introvert too, but they have to be able to find their hidden extrovert qualities in order to lead and support the staff. This is especially true with respect to an MIC's ability to communicate. A good MIC is always a good communicator.

It's important for an ASA to be a good listener and adept at adapting to new management styles as leadership changes occur.

M: You work closely with Incident Meteorologists (IMETs) to track their deployments and make sure the money for their deployment comes from the correct budget. How have the incrementally more intense fire seasons shaped your duties?

R: Each fire season is different, and they are definitely becoming more challenging with respect to stress on meteorologists, smoke impacts, urban interface, and fire related hazards. Fire seasons have grown longer, with less 'down' time for recovery, assessment of the past season, and training for the next season.

Wildland fires have become more complex and cross multiple jurisdictions, often involving several incident management teams, making mission support and consequent tracking of expenditures a more difficult responsibility. A single wildland fire may span federal, state, and local agency control.

M: As meteorologists we have extensive training, both on-site and in person classes, to learn the latest techniques,

swap skills, and network. Do ASAs have similar training options and is there more that can be done to support the work of ASAs?

R: ASAs are trained and supported by our regional headquarters administrative management division. We receive guidance and updates on a regular basis.

I've been sent to Western Region headquarters twice for training. It was intense, but beneficial to my performance.

M: The NWS is seeking to refine the recruitment and hiring process to develop a workforce that is better able to achieve our mission through its diversity. ASAs play a leading role in onboarding new employees and pathways students. You were on the interview panel when I was hired and this has me wondering, how would you characterize the shift in qualities of the people you have helped to select during your tenure?

R: The agency has moved forward to recruit well-rounded candidates who have more to offer than expertise in atmospheric science. A forecast office is small and is staffed by a tightly knit group of professionals, and that can present challenges.

It is supremely important for each member of staff to possess a strong work ethic, the ability to support multiple focal points, and the drive to constantly train and develop expertise with new technologies. Staff are often called upon to serve on focused work groups that demand creative solutions for complex problems.

M: Lastly, archiving key documents is a part of your current job and was a focus for you previously while working at the National Archives. With your background in archiving, what do you think future generations will think of our efforts to keep climate records?

R: When I was an archivist we had a saying about preserving records, 'zero times five is still zero,' meaning that records are worthless if you don't take proactive efforts to preserve them and make them accessible. I think this philosophy applies to climate records.

As custodians of valuable scientific records, we need to preserve data in manageable, readable, and easily accessible formats. Equally important is the need to promote access to those records so that future scientists, students, and the general public can make use of them in ways we have yet to consider.

Tales From COOP: Holy Cow! I mean Bull!

Tom Wright, *Observation Program Leader*

I encounter a lot of cows in servicing the 80+ Cooperative Observer Program (COOP) stations in NWS Medford's 50,000 square mile service area. I also grew up around cows, so, I'm not afraid of them. But given their size and power, I do have a healthy respect for them. I find cows to be peaceful and curious – two things I really appreciate in the world (and find far too little of).

When I service the Fischer Porter-E (FPR-E) Rain Gauge at Devil's Flat, OR, I hope the cows are in the pasture where the gauge resides, because they always come over to say hi and see what I'm doing. In reality, they probably just hope I have hay in the truck, but I like to think it's because they like me. A few seconds prior to the photo to the right, she had her head in the front seat of my pickup. Unfortunately, she backed away as soon as I tried to get in position to get the photo, but see what I mean about that curiosity?



All that said, I'm not a big fan of bulls. I mean, I don't dislike them, but I would prefer to not be in the same pasture with them. I'm not sure if they're protecting the herd, territorial, afraid of anything new, or just being bullies, but I've been run off by a few bulls in my travels.

On the same trip to Devil's Flat as in the picture below, I suddenly drew the interest of the bull. I hadn't seen him in the pasture, or I would have been paying more attention. But I looked up from the gauge, and there he was – a few feet away snorting, chewing, and staring.

Luckily, the observer at Devil's Flat, Marlene Koch (pictured below), wasn't intimidated by him. Although I was too preoccupied to think to get a proper photo (I'll try to do better for this series in the future), she stood between me and the 2,000-pound bull so I could finish my work.



"I don't think he'd bother you," she said. "He's just curious like the rest of them. His (radio edit) are bigger than his brain, but with his size, you gotta worry about what he wants," she told me. He edged forward, and she pointed a finger, and calmly said "I told you no." He eventually gave in and walked away, at which point I relaxed enough to get this photo of Marlene watching over the rest of the herd.

Thanks Marlene!

Never a dull moment in COOP.

-Tom Wright

***Tales From the COOP** is a series by Tom Wright, our Observation Program Leader, which details the funny, strange, or otherwise encounters he has while servicing 80+ weather observing sites in NWS Medford's forecast area.*

Post-Fire Part 3: Common BAER Team Responsibilities

Spencer Higginson, *Service Hydrologist*

In the [Summer](#) and [Fall](#) editions of the 2022 Crater Chronicle, I explained that a BAER Team is an ad hoc team composed of many disciplines. The team assesses the damage done to the area burned by a wildfire in order to create an emergency rehabilitation and restoration plan. In this edition, I'll quickly touch on how each resource area is impacted and I'll give an example of how the team can help with recovery.

Once again, the most common resource specialists requested on a BAER Team are: biologist, botanist, archeologist/cultural specialist, forester, recreation specialist, soil scientist, hydrologist, engineer, and GIS specialist.

Biology - The biologist is called when there is an impact to rare or endangered species that are known to inhabit the area that has been burned. Oftentimes these known species have been the subject of long studies and research and are very well documented. A biologist would go and look at how the habitat used by these species was damaged and how to give them the greatest chance of survival. For example, if there is a population of endangered birds, the biologist would inspect the known nesting sites. If they are intact, great. If they are damaged or destroyed, the biologist may look for other potential nesting sites nearby and make sure that they are not disturbed by other recovery efforts like salvage logging. The biologist would also look at the habitat of the prey animals that the birds rely upon for food. They may recommend some reseeded of grasses and shrubs to speed up the recovery of the prey animals' habitat to support the endangered bird species.

Botany - A botanist is called when there is concern about the recovery of the native vegetation. The concern could be related to a rare plant species, badly burned areas where seeds in the soil have been burned, or about invasive plants. If there is a rare plant species in the area, they will try to ensure its survival and recovery. If an area has lost its seed bank in the fire, reseeded is recommended to establish native vegetation before an invasive plant can establish and take over. It may not seem that important to keep out invasive plants, but invasive plants can completely alter the landscape and the land use. For example, picture a hillside that has grazing on it for livestock and wildlife. If it is burned and a weed like cheatgrass establishes before the native grasses can re-establish, the entire hillslope will no longer be viable for grazing as very few animals will eat it. This means that the hillside will no longer support a large portion of the animal community.

Archeology - There are historic and even pre-historic sites all over the western United States where so many fires burn. Fires often damage these sites whether it is from the flames themselves, falling trees, increased runoff, or increased visibility leading to looting. An archeologist or cultural specialist will visit all of the known sites within or downstream of the fire to determine the condition of the site after the fire and will try to protect the site from additional damage. A site may need to have fire-weakened trees removed so they don't fall on the site or hill slopes stabilized to prevent runoff and sediment from disturbing the site. The area may need to be closed until vegetation can regrow to hide artifacts and prevent looting of the site.

Forestry - Trees are one of the main fuel sources for wildfires and one of the greatest hazards that remain after a wildfire. Hazard trees are trees that have been damaged by wildfire and are likely to fall on a nearby target. A target is anything of value that



Hazard Trees can remain a danger in a burn area for years to come. (High Cascades Fire - Crater Lake National Park - 2017)

could be damaged by the hazard tree. A forester would inspect all trees within striking distance of a target and determine if it needs to be removed. This can be a simple task around a trail head or a massive undertaking along an extensive road network. Land management agencies are often involved in timber sales. The forester would make recommendations on which areas should be harvested first and which areas should only be thinned and which areas should be left alone completely. A forester works with the other resource specialists to meet their

needs (like nesting sites for endangered birds).

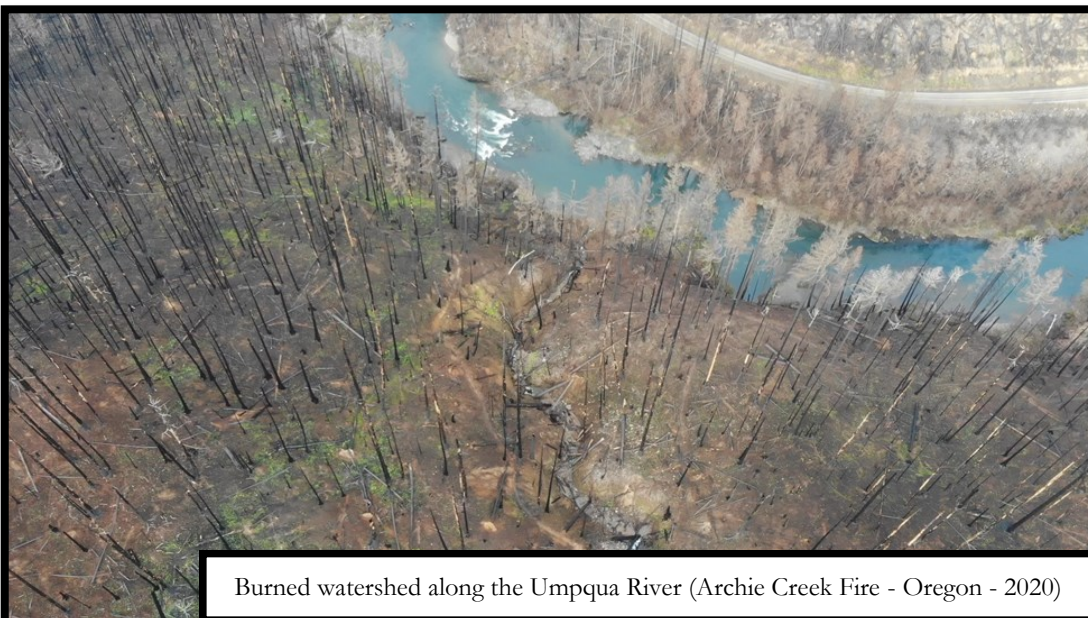
Recreation - Wildfires typically burn through forests. In these forests, you'll often find recreation infrastructure such as campgrounds, boat launches, interpretive signs, trails and trail heads, wildlife viewing areas, etc. These areas must be handled carefully



Recreation site following a wildfire (Beechie Creek Fire - Oregon - 2020)

as, more than any other resource, they draw people into the danger of the post-fire environment. People often grow up visiting the same recreation areas as part of family tradition and they want to resume that tradition after the fire is out. Others may just be interested in seeing what the wildfire did to the area. The most accessible and inviting places are the established recreation areas. The obvious goal of the recreation specialist is to create a plan to return the recreation area to a usable condition but before that can begin, the areas must be closed to keep the public out until they are made safe from the many hazards. The recreation specialist will work with the forester to get a plan in place to remove hazard trees so that reconstruction can begin. In some cases, the damage to a recreation site or trail may be so severe that it is never reopened and signage is placed warning people of the post-fire hazards.

Soil Science - The soil is not just 'dirt'. The soil is composed of minerals, organic matter, living organisms, air, and water. When a wildfire burns through an area, it burns at different intensities. The amount of heat and the duration of a burn will determine the effects on the soil. Higher heat and longer burn duration can cause a lot of damage to the soil. Organic material like roots and decomposing plant matter can be consumed and water can be boiled out causing the soil to lose cohesion. Living organisms like insects and seed banks can be killed and consumed making it difficult for the soil to recover. Infiltration rates can decrease and even fall to zero the more the soil is burned, changing the way runoff interacts with the soil. The condition of the soil post-fire determines a lot of what changes can be expected from the wildfire. Decreased infiltration leads to increased runoff. Increased runoff, combined with less-cohesive and less-stabilized soil, will lead to increased erosion and sedimentation within streams. In more extreme cases, this can also result in debris flows. For these reasons the soil scientist works closely with the hydrologist as soil condition affects hydrology (runoff) and hydrology affects soils (erosion/sedimentation).



Burned watershed along the Umpqua River (Archie Creek Fire - Oregon - 2020)

Hydrology - On a smaller team, the hydrologist will often fill the role of soil scientist focusing mostly on the condition of the soil as it relates to hydrology. The hydrology within a fire is often the most complex role because there are so many unknowns. The hydrology is dependent on the condition of the entire watershed. It is impossible to assess the entire burned area as access and scale are prohibitive. The hydrology is also dependent on the weather. During the

BAER Team process, it is impossible to know if there will be zero heavy rain events or 10 of them. There could be a mild, rainy season or a season loaded with atmospheric river events bringing intense rainfall and causing widespread flooding and debris flows. When lives and property are at risk, you have to plan for the worst while balancing budget constraints on the feasibility of reducing threats. On top of that, the hydrology impacts every other discipline in some way, so the other disciplines will also reach out to the hydrologist for input on how to protect or rehabilitate their respective resource areas. The hydrologist will also run models to predict where increased runoff may result in flooding or debris flows. They will often make sure early warning mechanisms are in place whether it be working with the local National Weather Service and/or local emergency management. They typically create a plan to have storm patrols go out and check road drainage devices such as ditches and culverts to make sure they are functioning to prevent the loss of the road system.

Engineering - An engineer is asked to handle the infrastructure needs within a fire that do not fall under the purview of the recreation specialist. This includes roads, guard rails, signs, water sources, utilities, etc. The engineer often gives input to the recreation specialist when their resources overlap. Typically the largest piece of infrastructure that the engineer must deal with is the road network. The most difficult part of keeping a road in place is drainage; passing water and sediment from the uphill side of the road to the downhill side of the road. To that end, the engineer and the hydrologist also work together frequently to ensure that the drainage system of the road network is functional and can handle the expected increase in runoff. If the drainage system fails and water begins flowing over the roadway, it will begin to erode the road bed and before long, the road will wash out leading to not only a huge expense, but a threat to life as evacuation routes can be cut off.



GIS - A GIS specialist is there to assist the other resource specialists with mapping needs in order to complete their assessments and display recommendations. They also determine the number of acres or miles of road involved in prescribed treatments to help calculate costs.

Once the BAER Team has worked through the problems they found and have created a plan to address those problems, the team will brief the land manager on the findings of the team. The land manager will either approve the plan or ask for some minor changes and then approve the plan. From there, the plan is turned over to the local unit to begin the process of implementing the recommendations made by the BAER Team. Some things must be done right away before the rainy season while other things are expected to be done over the course of a few years. After plan approval, the BAER Team would disband and return home and get ready for the next assignment.

These are some of the common issues we encounter on a BAER Team while working on a wildfire. The next installment will include some unusual and interesting things that I've encountered on BAER Teams over the last 10 years.

NATIONAL WEATHER SERVICE - MEDFORD, OREGON



National Weather Service
Medford Weather Forecast
Office
4003 Cirrus Drive
Medford, OR 97504-4198



Phone: (541) 773-1067

Fax: (541) 776-4344

Email: ryan.sandler@noaa.gov

Newsletter Editor:

Misty Firmin, Lead Forecaster

Email: misty.firmin@noaa.gov

Visit Our Website!

<http://www.weather.gov/medford>



www.facebook.com/NWSMedford



www.twitter.com/NWSMedford

Our Vision

Professionals focusing on science, teamwork, and customer service to design and deliver the best decision-support information to our community.

Our Mission

Our team at the National Weather Service Office in Medford strives to deliver the best observational, forecast, and warning information through exceptional customer service, extensive training and education, maintaining quality electronic systems, and relying upon an outstanding team of weather spotters and cooperative observers. We do this within the overall mission of the NWS to build a Weather-Ready Nation:

To provide weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.

Our Values

Trust, Integrity, Professionalism, Service, Teamwork, Ingenuity, Expertise, and Enthusiasm.

About Us

The Weather Forecast Office in Medford, Oregon, is one of more than 120 field offices of the National Weather Service, an agency under the National Oceanic and Atmospheric Administration and the United States Department of Commerce. The Weather Forecast Office in Medford serves 7 counties in southwestern Oregon and 2 counties in northern California, providing weather and water information to more than a half-million citizens. We are also responsible for the coastal waters of the Pacific Ocean from Florence, Oregon, to Point St. George, California, extending 60 miles offshore. The office is staffed 24 hours a day, 7 days a week, and 365 days a year by a team of 26 meteorologists, hydrologists, electronic technicians, hydro-meteorological technicians, and administrative assistants, under the direction of Meteorologist-In-Charge, Christine Riley.

