NATIONAL WEATHER SERVICE - MEDFORD, OREGON

Winter 2016

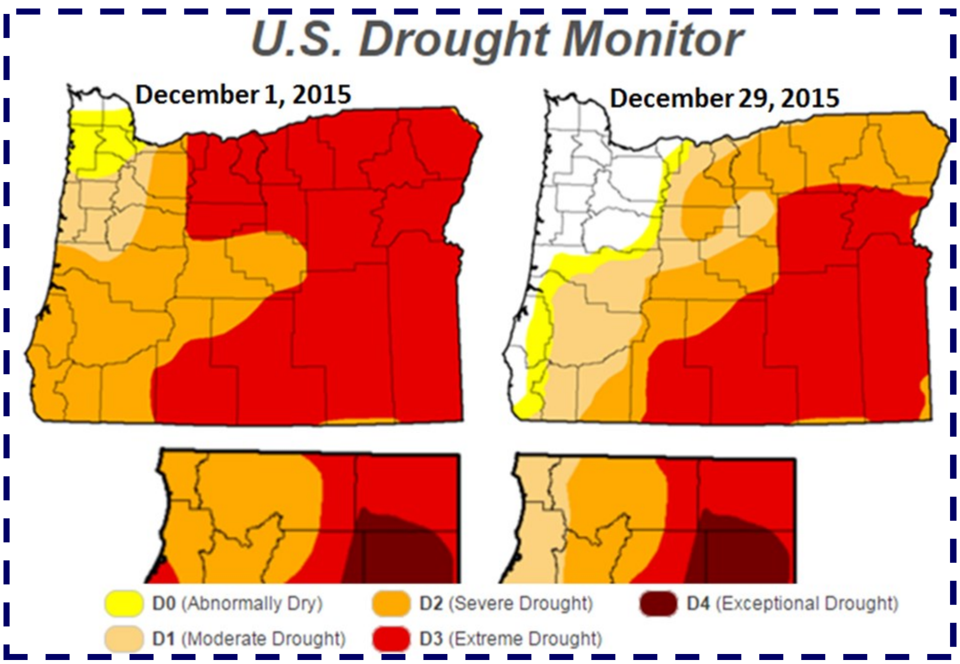
Volume 4, Issue 4

Is the Two-Year-Long Drought Over?

Ryan Sandler, *Warning Coordination Meteorologist*

December's rain and snow was the perfect prescription for our drought affliction. This being a strong El Niño season gave us high hopes that drought conditions would improve, but the relief so far hasn't been uniform. Greater benefits were seen closer to the coast and across southwest Oregon versus northeast California, but improvements were seen nearly everywhere **(see the graphic below)**. December 2015 brought us a parade of cold storms, in sharp contrast to the much warmer storms experienced in December 2014.

Drought intensity is difficult to define. When we talk about drought we are mainly talking about water supply. We live in a climate which has a notable wet winter and dry summer. Rain and snow during the winter has to be sufficient to get us through the dry summer and early fall for both city and agricultural needs.



What are the ingredients that define our drought? Well, it depends on where you're located. Near the coast, it's highly dependent on the amount of rainfall compared to normal over a long period. Normal rains result in moist soils, higher water tables, and normal stream flows. An extreme coastal drought features drier soil, a lower water table, very low streamflows, and low urban reservoir storage. The southern

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Oregon coast began December 2015 with many of these drought conditions, but by the end of the month the soils were wet and the streamflows were so high that some flooding occurred. You can see from the graphic above that the drought classification for the southern Oregon coast went from "severe" on December 1st to no drought at all by the end of the month. As an example, the weather station in Brookings received 27.40 inches of rain in December compared to a normal of 12.58 inches.

For inland areas, snowpack and reservoir storage dominate the drought discussion. At the end of December, the snowpack was about 150% of normal across southern Oregon, and about 100% of normal across northern California. Reservoir storage was highly variable, ranging from above normal to critically low. In the Umpqua Basin, Galesville Reservoir's storage was above average. The Rogue Basin had near normal levels at Lost Creek Applegate reservoirs, while the Talent and Medford Irrigation Districts' reservoirs in the Cascades were quite low. East of the Cascades, Upper Klamath Lake was lower than normal, and Gerber and Clear Lake reservoirs were extremely low. Lake Shasta Reservoir, the largest in California, was only 50% of normal for this time of year. For inland areas we've definitely improved the snowpack situation but reservoir storage has a long way to go in some areas before we can eliminate drought.

From the Cascades west, the official drought forecast through the end of March is for "drought removal likely". For the eastside, the forecast is for "drought to remain but improve." This is great news considering the drought status when December began!

NWS Medford Presents 75-Year Family Heritage Award - Day, CA

In 1940, Herman Lorenzen, a World War I veteran, was asked by the Weather Bureau to take weather observations in the small town of Day, California. Feeling it was his patriotic duty, he accepted. In doing so, Herman entered his family into a partnership that has lasted 75 years and has earned his family the 75-Year Family Heritage Award for their service.

Four members of the Lorenzen family have followed Herman as official observers while others have helped in an unofficial capacity. After Herman's death in 1978, his wife Phoebe became the official observer. In 1981, Phoebe received the John Campanius Holm Award. Upon Phoebe's passing in 1984, their son Pete picked up where his parents left off. Pete's daughter-in-law Susie took observations for several years before returning the duties to Pete. Pete passed away in 2013, at which time his wife Laurel took over the responsibility. Laurel continues to take observations and says she sees no end in sight.

The 75-Year Family Heritage Award was presented to Laurel Lorenzen (official observer) and Susie Lorenzen (previous official observer). Laurel's son Pete Jr. (Susie's husband) was also present along with media from as far as Redding, CA. There to present the award on behalf of the National Weather Service were Dr. Grant Cooper (Western Region Director) from Salt Lake City, Utah and John Lovegrove (Meteorologist-in-Charge), Ryan Sandler (Warning Coordination Meteorologist), Spencer Higginson (Service Hydrologist), and Brian Nieuwenhuis (General Forecaster) all from WFO Medford, Oregon.

Upon receiving the award Laurel said, "I'm a little taken aback. I think it's wonderful." Laurel was surprised that such a big deal was being made about their accomplishment. For her, taking the observations is just a part of their lives. Laurel is a wonderful woman and she and her family have provided a great service to our country.

Photo (L to R): Brian Nieuwenhuis (Forecaster/Medford), Spencer Higginson (SH/Medford), Dr. Grant Cooper (WR Director/Salt Lake City), Susie Lorenzen (Day, CA), Laurel Lorenzen (Day, CA), John Lovegrove (MIC/Medford), and Ryan Sandler (WCM/Medford)

Surfs Up?? Find Out Here!

Sven Nelaimischkies, *Lead Forecaster*

What is the surf going to be like when my family comes into town this weekend? While the National Weather Service has provided breaker heights in our products such as High Surf Warnings and Advisories, we previously have not made forecasts for surf conditions. More specifically, a forecast for where the waves begin to break to where they could wash up onshore. How far the waves wash up can vary greatly by wave height and period.

Obviously the coast is a very popular location in Oregon, and with spectacular views even in stormy conditions, it is a popular destination year round. However, even without waves reaching high surf warning/advisory conditions, tides and steep terrain combining with even moderate surf can create hazardous conditions on the coast.

With this in mind, the National Weather Service is now producing a "Surf Zone" forecast for the west coast. Besides the usual wind and weather forecasts, the Surf Zone forecast will also include surf height, potential for lightning, and tide forecasts. This new product will hopefully give coastal visitors a better understanding of dangers in the surf zone, such as when and where not to be when tides start to rise.

Where do you find the Surf Zone forecast? By going here: http://www.wrh.noaa.gov/mfr/marine/index.php. Then click "Surf Zone Forecast" under the "Marine Forecasts" header. Here's an example of what the product looks like:

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SOUTHWEST OREGON SURF ZONE FORECAST...EXPERIMENTAL
NATIONAL WEATHER SERVICE MEDFORD
840 AM PST WED JAN 6 2016

ORZ021-062000-
SOUTHWEST OREGON COASTAL AREAS FROM REEDSPORT TO PORT ORFORD-
840 AM PST WED JAN 6 2016


.TODAY...

WEATHER.......................MOSTLY CLOUDY WITH SHOWERS LIKELY AND RAIN LIKELY.
                              HIGHS AROUND 53.
WIND..........................SE AT 13 MPH.
SURF HEIGHT...................19 FT.
LIGHTNING POTENTIAL...........SLIGHT CHANCE.

TIDES.........................
          CHARLESTON..........LOW TIDE....3.4 FT AT 2:44 AM PST
                              HIGH TIDE...7.9 FT AT 8:59 AM PST
                              LOW TIDE....0.5 FT AT 03:59 PM PST
                              HIGH TIDE...6.0 FT AT 10:32 PM PST
          PORT ORFORD.........LOW TIDE....3.5 FT AT 2:20 AM PST
                              HIGH TIDE...7.6 FT AT 8:34 AM PST
                              LOW TIDE....0.4 FT AT 03:48 PM PST
                              HIGH TIDE...5.6 FT AT 10:24 PM PST


.THURSDAY...

WEATHER.......................MOSTLY CLOUDY WITH A CHANCE OF RAIN AND A SLIGHT CHANCE OF THUNDERSTORMS.
                              HIGHS AROUND 52.
WIND..........................SE AT 6 MPH BECOMING SE AT 4 MPH.
SURF HEIGHT...................22 FT.
LIGHTNING POTENTIAL...........SLIGHT CHANCE.

TIDES.........................
          CHARLESTON..........LOW TIDE....3.4 FT AT 3:33 AM PST
                              HIGH TIDE...8.2 FT AT 9:41 AM PST
                              LOW TIDE....-0.0 FT AT 04:39 PM PST
                              HIGH TIDE...6.4 FT AT 11:16 PM PST
          PORT ORFORD.........LOW TIDE....3.5 FT AT 3:10 AM PST
                              HIGH TIDE...7.8 FT AT 9:15 AM PST
                              LOW TIDE....-0.1 FT AT 04:27 PM PST
                              HIGH TIDE...5.9 FT AT 11:05 PM PST
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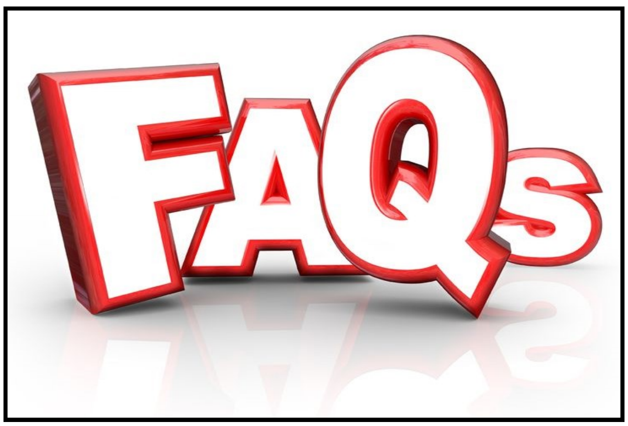


Frequently Asked Questions:

Showers vs. Rain

John Lovegrove, *Meteorologist-In-Charge*

There are a few weather terms that we meteorologists regularly use but may not be fully understood by most everyone else. A couple of these terms prompts another frequent question to us: ***What is the difference between rain and showers?*** You have probably heard something similar to this in our forecasts, "rain in the morning becoming showers in the afternoon." To answer the question, we have to look at where the precipitation is coming from. And that will be clouds. There are many kinds of clouds but they all form by lifting air. The lifting air expands and cools which raises the humidity. Eventually, cloud droplets form and the cloud takes shape. The cloud droplets gather together to form raindrops. What separates rain and showers is what causes that initial lifting.

Rain forms when a widespread layer of air lifts to form stratus clouds. Rain is characterized as being steady, longer duration and of limited intensity. When an area receives rain, the amounts seen on the ground will generally be fairly uniform. The duration of rain can be a few hours to a whole day or more.

Showers fall from convective clouds called cumulus. Here the air is lifted in small parcels that form the puffy cumulus clouds. Showery precipitation is of much shorter duration, on the order of a few minutes, and of much greater intensity. During a showery period, it can rain very hard for a few minutes then have the sun come out. Showers are also very hit and miss. One part of town can receive a half inch or more of rain while other parts stay dry.

To sum up, when you see "rain" in the forecast you can expect a cloudy, gray day with widespread precipitation that will generally be light. When you see "showers" in the forecast you can expect some sunshine with short duration intense precipitation.

In the next issue of the *Crater Chronicle*, I'll discuss what probability of precipitation means.

Q. What's the weather going to be like on my road trip?

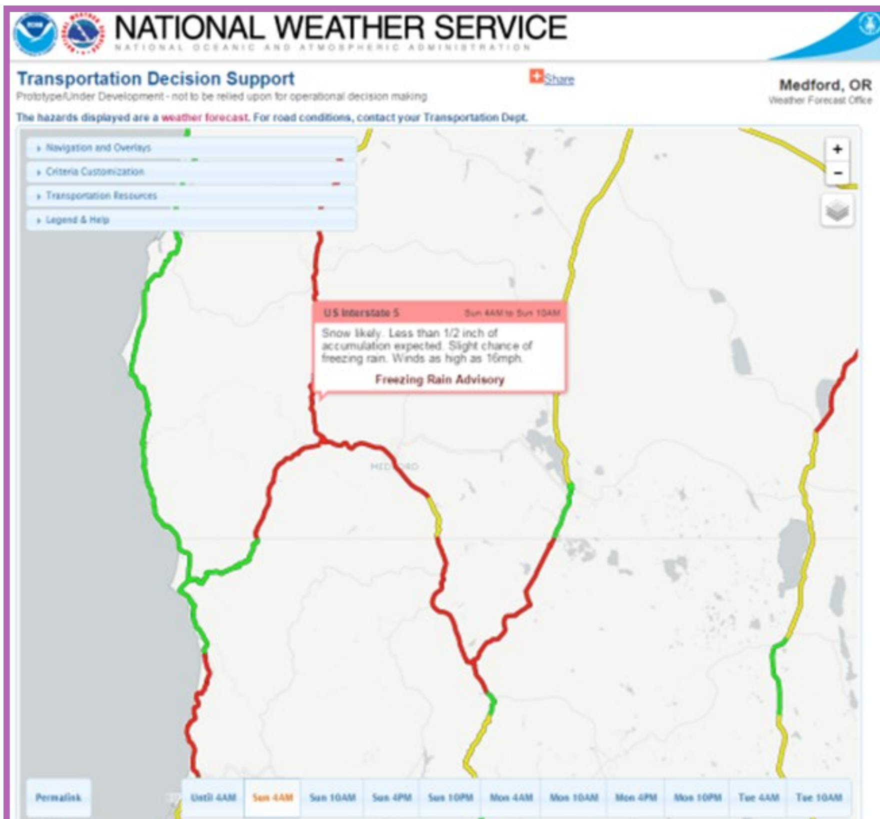
A. Check out the "Transportation Decision Support" product!

Shad Keene, *General Forecaster*

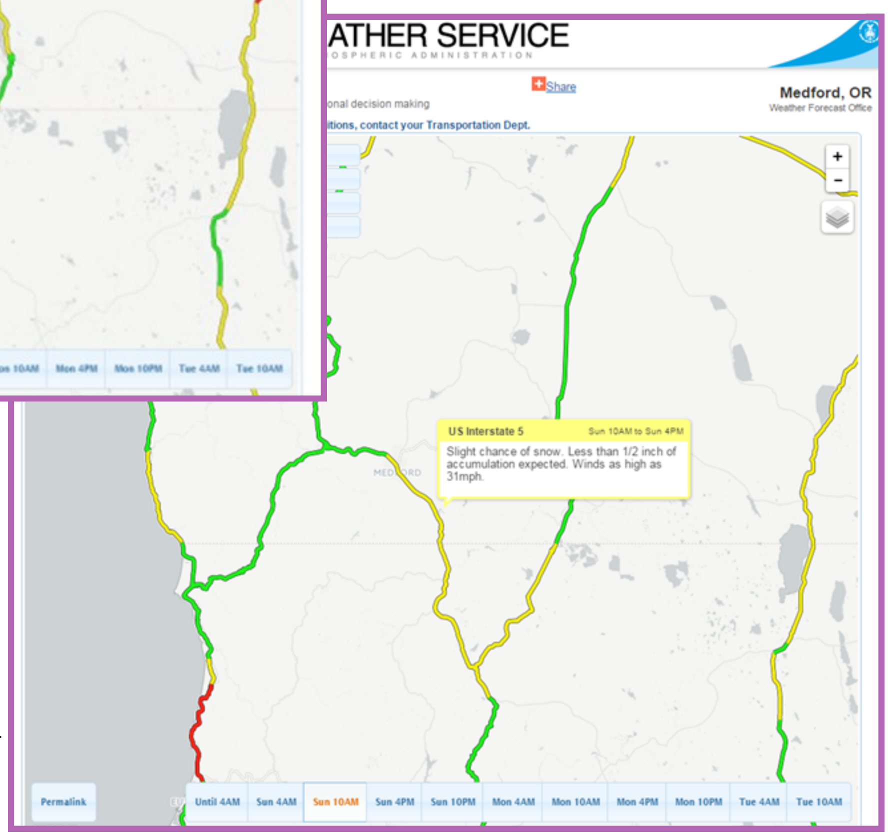
I can't tell you how many times weather forecasts have factored into my road trips, whether it's driving across the country from one job to another, traveling hundreds of miles to see family over Thanksgiving, or driving to the mountains for a day of snowshoeing. If you're like me, weather forecasts are critical components of travel plans.

There are hundreds of weather products out there that provide weather information that can be used in route planning, but if you want a quick, intuitive, and straightforward way to make a "go/no go" decision, the National Weather Service has developed a webpage to meet your needs. The Transportation Decision Support webpage provides you with clear "windows" of favorable weather for traveling, and can also highlight dangerous periods of weather along roadways.

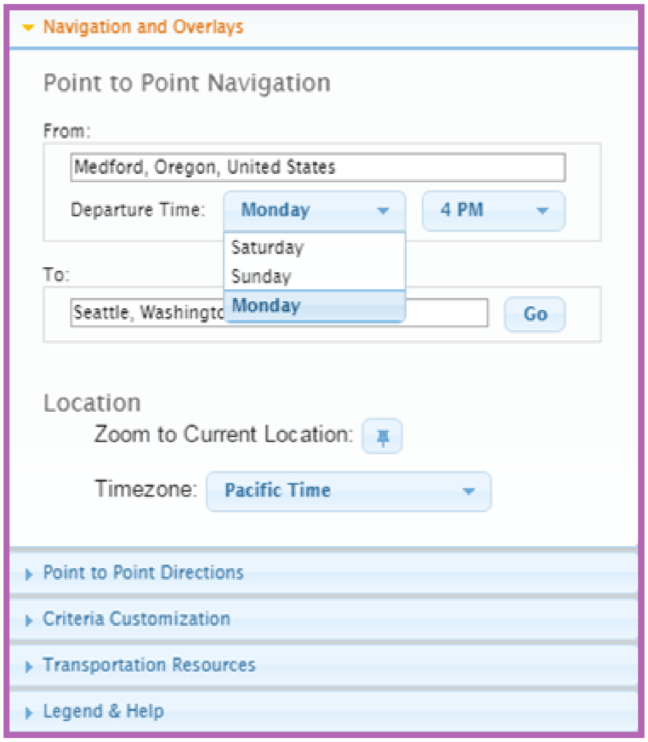
This travel page can be accessed from the left hand menu found on the weather.gov/medford webpage under "Forecasts" and then clicking on "Travel". The web address is: http://www.wrh.noaa.gov/wrh/travel/?wfo=mfr. There are many options to explore on this page, but I'll only discuss two of them here. To highlight these, I'll use a recent situation in which a wintry mix of precipitation was forecast west of the Cascades.

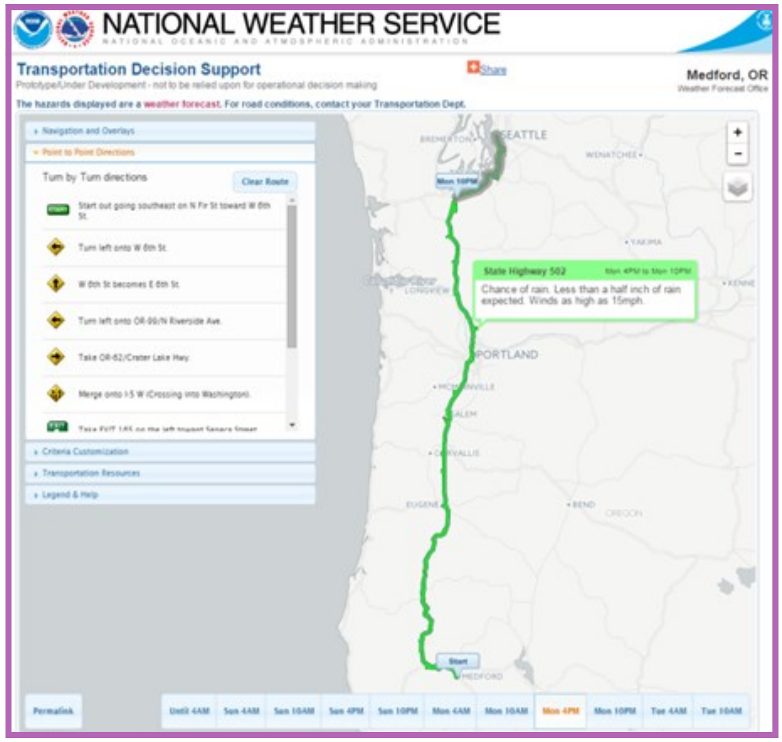


First, a map with interstates and major highways is displayed, color-coded according to how favorable or unfavorable the weather is for driving. The criteria used for this color-coding is found on the top left pull-down menu titled "Criteria Customization". If you look to the bottom of the page you'll see time buttons. I've chosen Sunday at 6am, and as you can see, many routes are colored red. If you click on a segment of roadway, the weather expected along that road is shown in a pop-up window. For Sunday at 6am, traveling along most of Interstate 5 from Ashland to Grants Pass and points north could be hazardous, and this is because of the Freezing Rain Advisory that had been issued. If you are flexible in your travel times, you could check later times to see if the colors turn to yellow or green and then investigate the weather by clicking on the road segments. For instance, just 4 hours later, at 10am, the colors have changed from red to green and yellow because the Freezing Rain Advisory has ended, and there is just a slight chance of snow with some gusty winds near Ashland, which the yellow popup box displays if you click on that segment of Interstate 5. *cont. on next pg.*

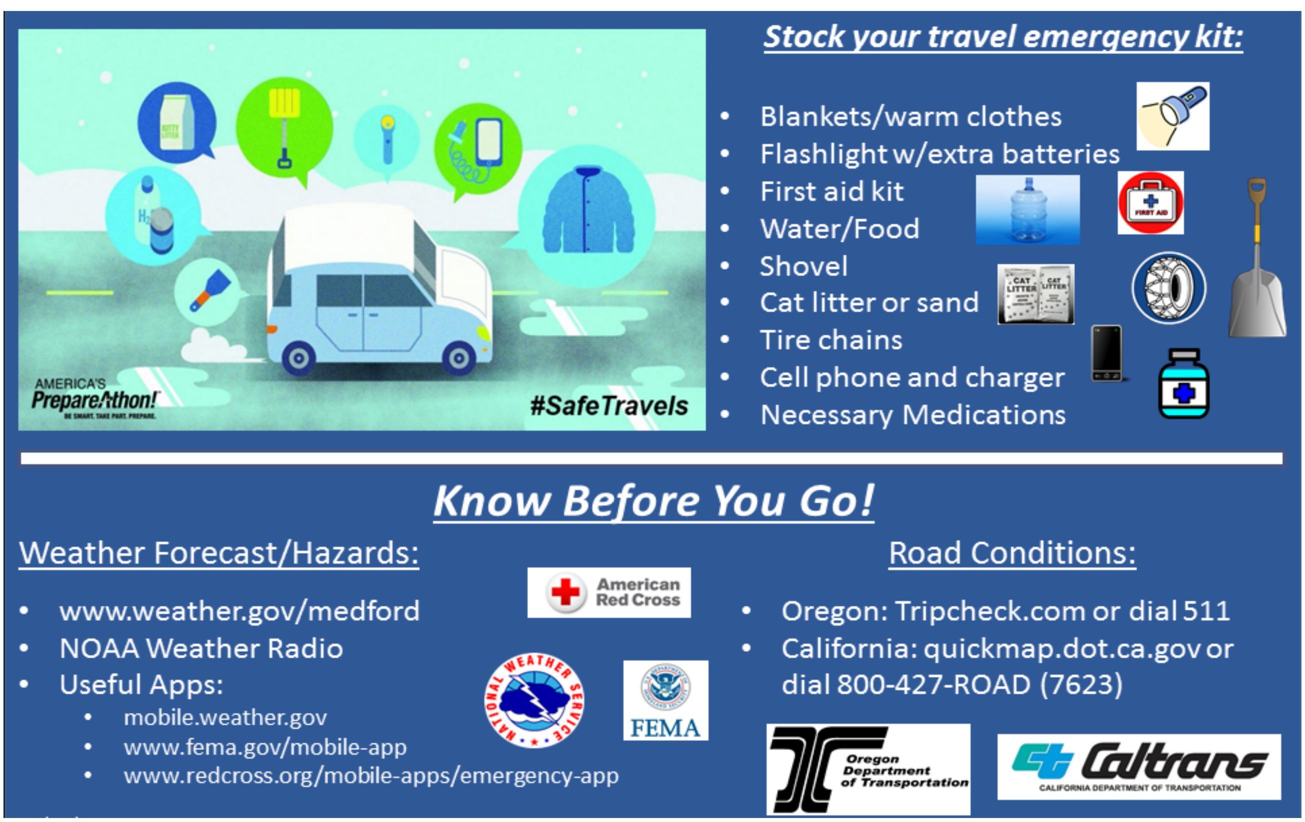


The other feature I wanted to highlight is the route forecast. Just navigate to the top left menu and click on "Naviation and Overlays". Type in your starting and ending location, the time you plan on traveling, and then choose "Go". You'll be greeted with a route that's color-coded according to the weather expected along the way.





So, please give this product a try and relay any feedback you have to w-pih.webmaster@noaa.gov. You can also try the mobile-friendly version for your smartphone, found at http://www.wrh.noaa.gov/wrh/travel/mobile/, but this version should automatically be displayed if you enter the webpage on your mobile device. Lastly, don't forget to visit our partner agency websites, Caltrans and ODOT, for current road conditions. If you must travel in wintry conditions, check out the graphic below for tips and helpful websites to be prepared!



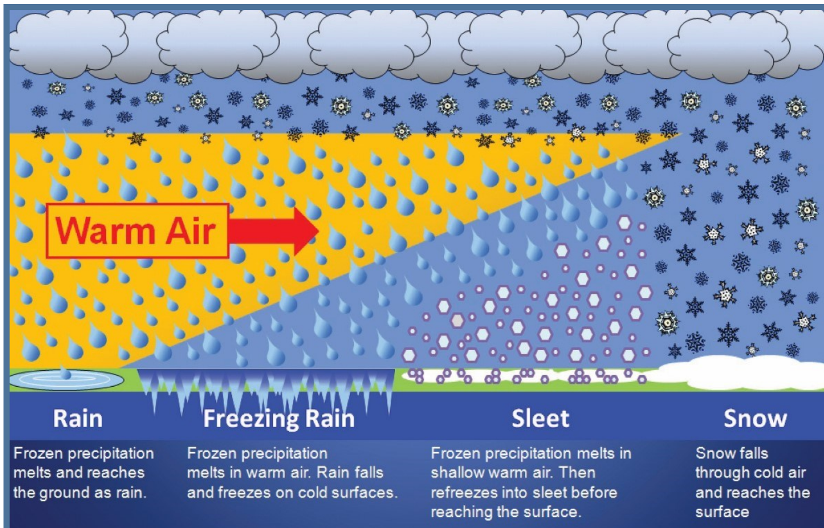
Freezing Rain in Southwest Oregon and Northern California?

Brett Lutz, *General Forecaster*

While many of us often think of freezing rain as something that occurs in the eastern United States, this 2015-16 wet season has proven that it also happens in Oregon and Northern California. Freezing rain is much less common in our area, and is usually of less severe when compared to other parts of the country. However, as residents of Roseburg learned this past December, it only takes a little bit of freezing rain to result in treacherous walking and driving conditions.

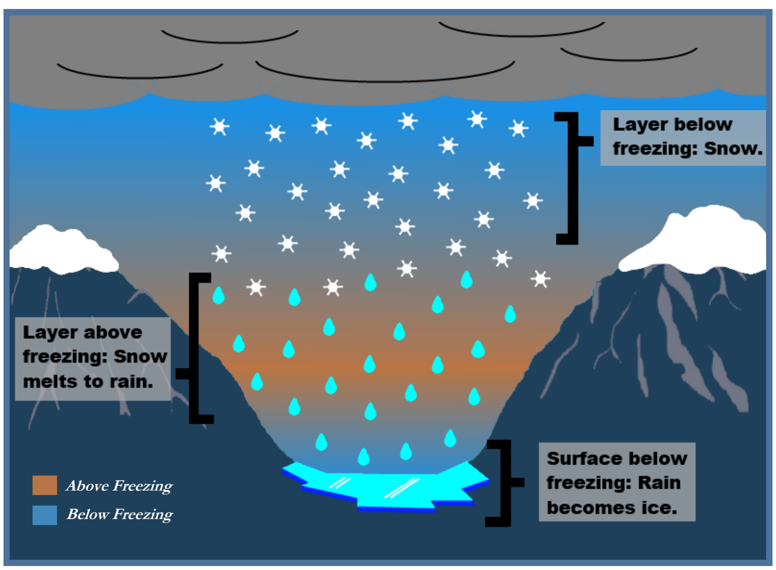
What is it? By definition, freezing rain is precipitation that falls as liquid water and then freezes once it contacts the Earth's surface. Since it falls as liquid on below freezing surfaces, water is able to penetrate into cracks and rough areas on road surfaces and walkways before freezing, effectively creating a glaze of ice that provides very little friction. Freezing rain is often difficult to see and often looks like a wet surface. For that reason, many people refer to the resulting freezing rain glaze as "black ice."

How does it form? Freezing rain requires 3 conditions. Looking at a vertical cross section from top to bottom, these 3 required conditions are: 1) A precipitating layer; 2) An above freezing layer both below the precipitating layer and above the surface; and 3) At or below freezing temperatures at the surface. A general rule of thumb is that the depth of the warm layer should be 1500 feet or more in order to melt snowflakes falling from aloft. However, other considerations include the dryness of the warm layer and how warm the warm layer is. The warmer and moister the warm layer, the more likely snowflakes falling into this layer will melt before reaching the surface. Also, if the surface cold layer is thicker than about 1500 feet, the falling liquid water can refreeze before reaching the surface, resulting in sleet (ice pellets) rather than freezing rain.



Different stages of precipitation. Note the difference in thickness of the cold air below the warm layer for freezing rain (thinner) vs. sleet (thicker). Photo courtesy: http://www.srh.noaa.gov/bmx/?n=outreach_wwaw2014

In our area, there is one other unique situation that can cause freezing rain in. This is when the surface temperature is above freezing, and temperatures in the precipitating layer are less than -10° C. In this situation, clouds are usually shallow and super-cooled water can exist in clouds without becoming snowflakes. Freezing drizzle is the usual result in this scenario. This type of freezing precipitation is occasionally observed in our mountains during warmer storm events.

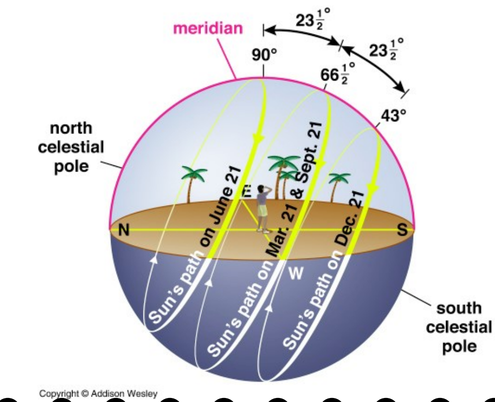


Depiction of cold air trapped in the valley below a layer of warmer air where the precipitation refreezes as it makes contact with the below freezing ground. ***Photo: Brian Nieuwenhuis, NWS***

What kind of storm does it take? Storms that produce freezing rain almost always come after we've already had a cold air mass in place. If there is significant snow cover, especially in the valleys, cold air tends to linger at and near the surface longer. The complex terrain of northwestern California and southern Oregon, with its maze of valleys and ridges, allows cold air to become trapped in certain valleys more so than others. The more freely the air can flow through valleys, the lesser the chance that the cold layer at the surface will linger. Additionally, the stronger the weather system, the more likely it is that the cold air near the surface will mix out. For these reasons freezing rain is most likely to occur with weak weather systems arriving over snow covered valley areas and/or those that are experiencing a below freezing period of weather. Storms such as these often arrive from a southerly direction. East flow near the surface can often perpetuate a freezing precipitation event.

Astronomy Happenings

Misty Duncan, *Meteorologist Intern*



Winter Solstice: December 21st, 8:49 PST

The astronomical start of winter fell on Monday December 21st at 8:49 PST. The winter solstice marked the time when the Northern Hemisphere had completely tilted away from the sun. The sun's rays were at it's least intensity in the northern Hemisphere because the position of the sun was at its farthest point south of the equator; directly over the Tropic of Capricorn in the Southern Hemisphere. After the winter solstice, the Northern Hemisphere will continue tilting toward the sun until it reaches the summer solstice; marking the astronomical start of summer. The winter solstice also marked the shortest day of the year. On this day, there were only 9 hours of daylight in southwest Oregon! Compare this to the summer solstice on June 20th when there are 15 hours of daylight!

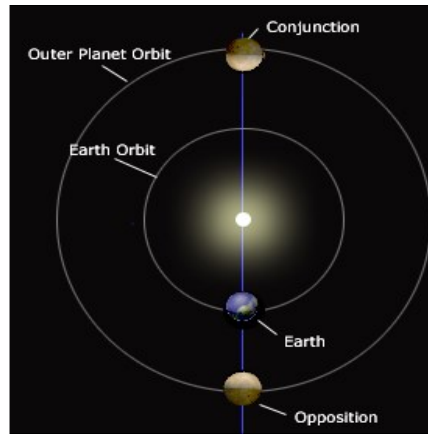


Image credit: http://www.jpl.nasa.gov/

Jupiter at Opposition: March 8th

Any planet at opposition is one where it is closest to Earth during its orbit. The planets appear larger and brighter at this time and can be thought of as analogous to a full moon. On March 8th Jupiter will be at opposition and will be visible all night. This will be the best time to photograph Jupiter with it's moons. If the sky is clear, a medium sized telescope should be able to show some details in the clouds. A good pair of binoculars should at least show you the four largest moons.

Keeping Weather Events in Context

Mike Stavish, *Science and Operations Officer*

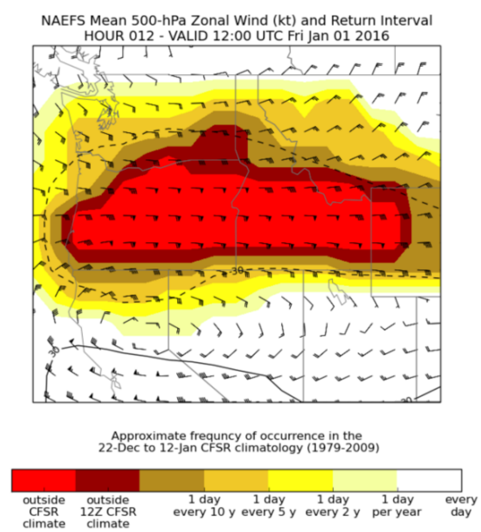
Forecasters at the National Weather Service have a myriad of tools to assist them in doing their job. Over the past several years, new tools have emerged that help forecasters place weather events in context with events of the past. Knowing how those past weather events impacted the region enables forecasters to gain context in how advertised events (future events forecasted by computer models) may impact the region.

One tool we make good use of in operations is the *Ensemble Situational Awareness Table*, sometimes referred to as the *Standardized Anomaly Table*. This tool, developed by meteorologists at the Western Region Science and Technology Infusion Division (STID) in Salt Lake City, shows forecasters how critical forecast elements compare to a historical database. This enables the forecaster to gain valuable context of the upcoming event and, in turn, helps shape how the event is communicated to our users.

For example, when a forecast model advertises an incoming storm to bring strong south east winds to the region, one might ask the question, "How unusual is this event?" Or "How typical is this event, *for this time of year*?" These questions can be answered by looking at the table. The table compares forecasts of the North American Ensemble Forecast System (NAEFS, an *ensemble* forecast model) to a 30-year climatology database, and shows the forecaster where the advertised event stands in relation to past events.

One parameter we like to view is the *return interval*, which in the example above, would answer the question, "How often do those wind speeds show up in the 30-year database for this time of year?" Knowing the answer to that question provides clues as to how the winds might impact the region.

The image to the right is from the table that showed forecasters that the east winds that blew over the region on New Year's morning 2016 were quite unusual. At roughly 20,000 feet above sea level, the easterly component of the winds was stronger than had been observed (red values in the image) across most of Oregon in the 30 years between 1979 and 2009. The tool helps forecasters "see" when events are indeed unusual. Some additional weather elements that can be placed into context are temperature, pressure and atmospheric moisture.

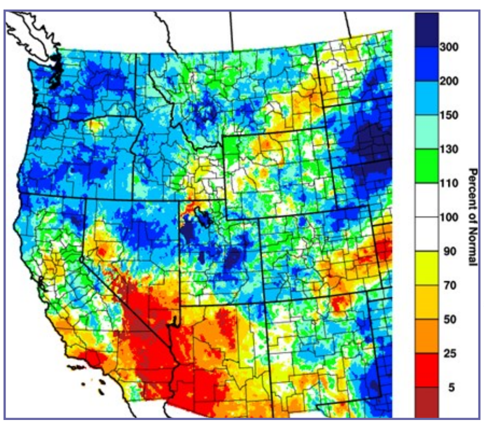


NAEFS Model Forecast U-Wind (East-West direction) Return Interval valid 4am PST Friday Jan. 1st showing the unusually strong east winds.

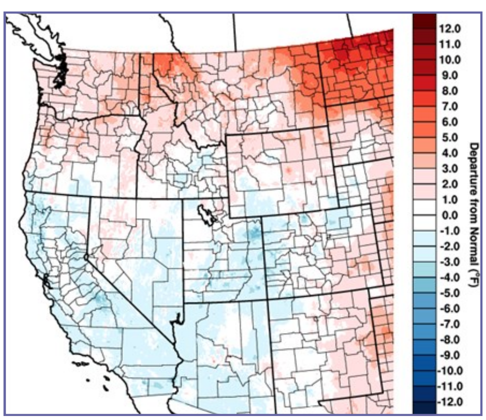
Wet Season & El Niño Update

Brett Lutz, *General Forecaster*

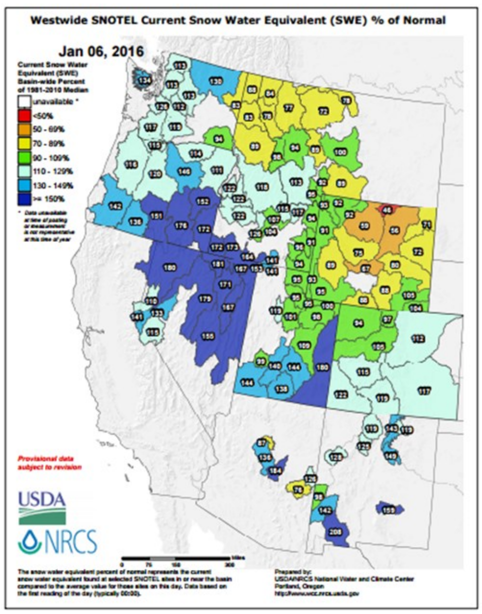
A mature and very strong El Niño, which is likely to rank as one of the 3 strongest recorded since 1950, is present in the Equatorial Pacific and continues to influence the atmospheric circulation across the Pacific Ocean and North America. An unusually active Madden Julian Oscillation (MJO) for such a strong El Niño, aided in bringing much above normal precipitation to southern Oregon and much of the Pacific Northwest during the month of December. In fact, Medford experienced its wettest December since 1996, and 6th wettest December on record, with 7.73 inches of precipitation recorded. Crater Lake National Park recorded the most snowfall ever for the month of December since records began with 196.3 inches. Records at Crater Lake go back to 1919, with a data void from 1942 to 1945. Please see the graphic below to see how December precipitation compared to normal. Since temperatures were also near normal (see graphic), we were able to accumulate significant snowpack.



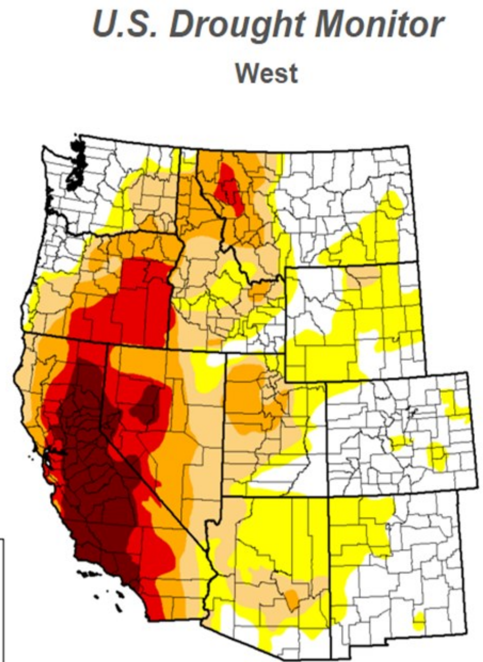
% of normal for precipitation (top) & departure from normal values of mean temperature (bottom) for Dec.



Drought Update: December 2015 was so unusually wet for our area that it pushed observed precipitation totals for the last 3 months to at or above normal values. The exception to this is in the Mount Shasta area, where some additional deficits occurred and seasonal precipitation is around 70%. So much of the precipitation fell as snow that our snowpack is also above normal across the area (shown below). Although this has started to bring area reservoirs back closer to normal fill curves, with multiple years of drought, many areas still have a long way to go (see Drought Monitor Graphic).



Outlook: As was thoroughly covered in the last edition of the Crater Chronicle, what the remainder of the wet season brings is not certain. However, with the very strong El Niño continuing, the rest of the wet season looks promising for water supply concerns. *Strong* El Niños increase the probabilities of at to above normal precipitation across northern California and Curry County. While there have only been 2 as strong or stronger than the *very strong* current El Niño event, it is notable that those two events (1982-83 and 1997-98) resulted in an at or above average wet seasons across our entire forecast area. Current climate models indicate January and February are more likely



than not to be at or above normal for precipitation across northwestern California. The farther northeast of NW California one goes, the lower the odds that precipitation will be at to above normal for January and February, with northern portions of our area at least equally as likely to experience below average precipitation than above average precipitation. Altogether, we also expect that precipitation for the wet season is more likely than not to be above normal for our northern California areas, with lesser chances of above normal precipitation the further north one goes. Thus, we remain hopeful that, based the best available scientific data, our drought conditions are likely to lessen as we go through the rest of the winter and into the spring. However, based on CPC and climate model forecasts, there are still concerns above normal temperatures eroding the snowpack early.

Supercomputers...What Makes Them so Super?

Michelle Cohen, *Meteorologist Intern*

A large part of the forecast process involves using numerical weather prediction (NWP) models. These models simulate the physical properties of the atmosphere by taking initial conditions (usually observations) and applying forecast equations, known as the primitive equations. These primitive equations are based on the laws of conservation of mass, momentum, and energy, and describe the forces that contribute to the movement of air.

Conservation of momentum:

$$\frac{du}{dt} - \left(f + u\frac{\tan\phi}{a}\right)v = -\frac{1}{a\cos\phi}\frac{1}{\rho}\frac{\partial p}{\partial \lambda} + F_\lambda$$

$$\frac{dv}{dt} + \left(f + u\frac{\tan\phi}{a}\right)u = -\frac{1}{\rho a}\frac{\partial p}{\partial \phi} + F_\phi$$

Hydrostatic approximation:

$$g = -\frac{1}{\rho}\frac{\partial p}{\partial z}$$

Conservation of mass:

$$\frac{\partial \rho}{\partial t} = -\frac{1}{a\cos\phi}\left(\frac{\partial}{\partial \lambda}(\rho u) + \frac{\partial}{\partial \phi}(\rho v\cos\phi)\right) - \frac{\partial}{\partial z}(\rho w)$$

Conservation of energy:

$$C_p\frac{dT}{dt} - \frac{1}{\rho}\frac{dp}{dt} = Q$$

State equation (atmosphere):

$$p = \rho RT$$

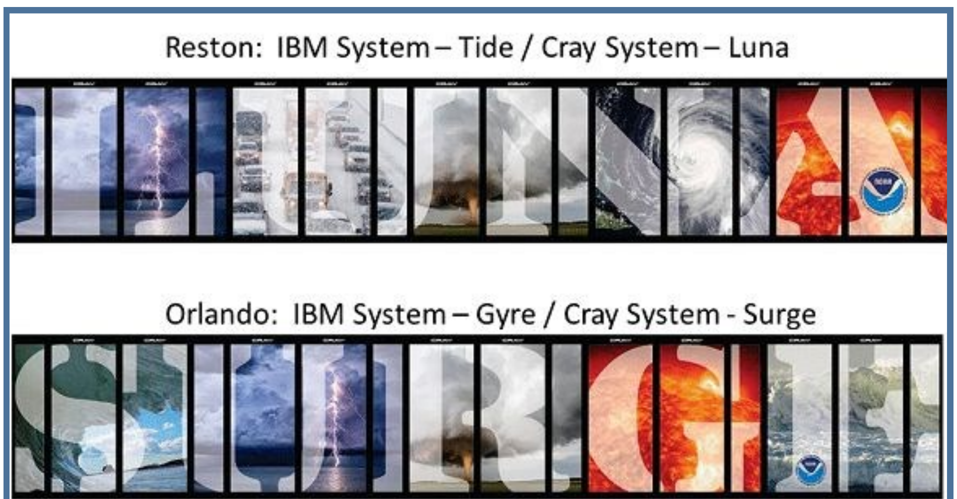
Primitive equations used in atmospheric models.

Source: http://www.mcs.anl.gov/~itf/dbpp/text/node20.html

Due to the complexity of the primitive equations, massive amounts of computing ability are required to produce NWP model output. Therefore, these NWP models are run on supercomputers. The current supercomputers used for the Global Forecast System (GFS), one of the main models that forecasters use to predict the weather, are housed in Reston, VA, and Orlando, FL. Yes, there are two supercomputers for just one model. One of these supercomputers is active, and the other is in backup. Generally, the computer named "Tide" is the operational computer, which resides in Reston. "Gyre", Tide's backup, lives in Orlando and is also used for developmental purposes. When maintenance needs to be done on Tide, the GFS will run on Gyre. So, what's so "super" about these supercomputers? Well, Tide and Gyre can each do 213 trillion calculations per second! In other words, for the more tech-savvy out there, each has 213 teraflops. As if that wasn't enough, as of November 2015, Tide and Gyre have been upgraded to increase their system performance to a total 2.8 thousand trillion calculations per second! That's 15 zeroes, or 2,800,000,000,000,000 which equals 2.8 petaflops.

Though this may seem excessive, models still have their limits and this is why forecasts aren't perfect. Again, due to complexity of the primitive equations, they cannot be precisely solved in forecast models; some parameters/solutions must be approximated. This leads to one of the many sources of error in weather models. It is impossible for models to account for every molecule of air or every inch of land on Earth, so these approximations are necessary. Models rely heavily on observations to base their calculations (known as initial conditions) and though ground observations are relatively abundant, the observational network cannot cover every inch of land/sea on Earth. Therefore, observations must be extrapolated, which all leads to more errors. Also, weather prediction doesn't just depend on what's happening at ground level. We need observations of the atmosphere above the ground. This is why hundreds of balloons are launched multiple times a day. Even these balloons form an imperfect network. Besides our balloon launched here at Medford, the closest balloon sites are in Salem, OR; Reno, NV; and Oakland, CA. Eventually these errors compound and the further in time you go into the model output, larger the errors become in the forecast.

As computers become more and more powerful, models can run at a finer resolution (the closer the data points become) and have greater detail. Unfortunately, even as models become finer scale, our observing capabilities are limited. As anyone who has lived in mountainous terrain knows, an observation may not be representative of the surrounding area. For example, here at the airport, we only received half an inch of snow on December 13th, while just up the road, we received reports of several inches. As we can't account for every molecule in the atmosphere, and probably never will, models will be imperfect and will require human interpretation to determine the weather. Fortunately, here at the weather forecast office, we are up to the challenge!



The Cray Systems will include graphics on the front panels of the systems as shown in these two images.

National Weather Service - Medford, Oregon

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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 John Lovegrove.