

ZSE Weather Watch

Sunshine and Summer Time

By David Bieger, Meteorologist-in-Charge

Welcome to Summer! As I write this I am reminded that Summer can mean different things to different people. Most of us think of barbeques, cooling off in a lake or swimming pool, long days and short nights, and maybe even NO SCHOOL! That last one can be good...or bad...depending on your point of view. But I don't think many of us spend much time thinking about the science behind the Summer season, so I thought I'd share some thoughts on that.

When I think about Summer I think about the Solstice; the longest "day" of the year, when the Northern Hemisphere is pointed directly at the sun. It's what we call Astronomical Summer, and it happened this year on June 20th at 3:34 PM. Residents of the Pacific Northwest saw as much as 16-hours of daylight! What's interesting is that the Earth makes its farthest approach from the sun during Northern Hemisphere Summer (we call this the aphelion)

I also think about hotter temperatures, and that's when it's helpful to think of Meteorological Summer. Meteorological Summer begins on June 1st every year and runs through August 31st. Meteorologists define this period by using climatological temperature cycles, with maximum temperatures of the year observed weeks, sometimes months, after the Solstice.

At the Seattle-Tacoma International Airport, the mid-Summer maximum temperature will happen in July, with an average high temperature of 78° Fahrenheit. The average minimum temperature in July is a mild 57° F. Just don't be surprised when we get a few days over 90° F! Rainy days should be few, and the gloom of fog and stratus will stay away more often than not.

Now get out there and enjoy the sunshine and Summer time!

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Advisory Service

- A "Strawberry Moon" occurred on the Summer Solstice this year. That won't happen again until 2062!
- The Center Runway at Sea-Tac is scheduled to reopen to traffic on June 28th, just in time for Independence Day traffic.
- The Aviation Weather Center's annual Summer Experiment is August 15-22. CWSU participants will aid the evolution of CAWS and convective SIGMETs.

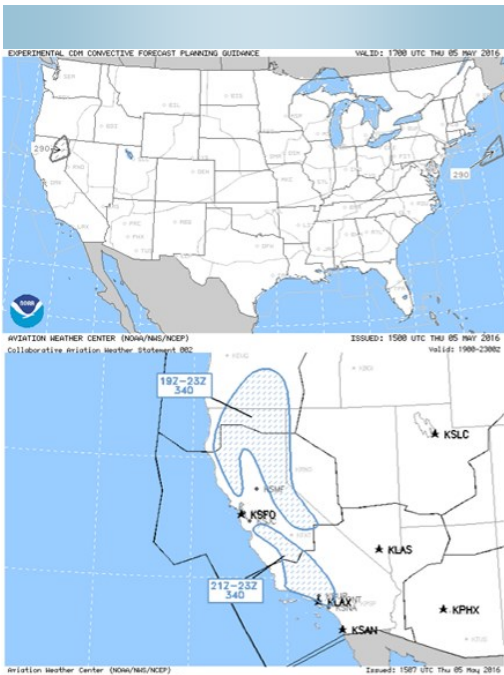


Collaborative Aviation Weather Statement

By Jim Vasilj, Aviation Meteorologist

Spring and Summer are active times for thunderstorms in the National Airspace System (NAS). Although the amount of thunderstorm activity in the Seattle ARTCC airspace may not be as much as other parts of the NAS, thunderstorms can still pose challenges for safely and efficiently routing aircraft through the area.

Last year the Convective Collaborative Forecast Product (CCFP), which was the result of collaboration between National Weather Service (NWS) and airline meteorologists, was replaced with an automated CCFP compiled from various weather forecast models. A new, event-driven product—the Collaborative Aviation Weather Statement (CAWS)—was developed in response to feedback from various government and industry partners.



“The CAWS is a product of collaborative decision making between National Weather Service meteorologists, industry operators, and FAA traffic managers.”

CAWS Weather Triggers

- Average tops at, or above, FL250 w/in 100 NM of a Core 29 airport
- Average Tops at, or above, FL340 for rest of CONUS
- If tops are off by at least one CCFP category
 - FL250—FL290
 - FL300—FL340
 - FL350—FL390
 - >= FL400
- Timing of current forecast is off by 30-mins at Core 29 airport
- If adjustment is needed for coverage and/or location relative to the CCFP
- ZAU, ZDC, ZID, ZNY and ZOB have additional thresholds

The CAWS is a product of collaborative decision making between National Weather Service Meteorologists, industry operators, and FAA traffic managers. It focuses on specific, high-impact thunderstorm events that affect the Core 29 airports and high traffic sensitive regions, and/or when the forecast of convection differs from the automated CCFP or current CAWS. It is intended to help with more effective initiation, adjustment, or termination of planned or active Traffic Management Initiatives (TMI) to balance the traffic demand in constrained areas.

Participating in this collaboration are NWS meteorologists from the Aviation Weather Center (AWC), FAA Air Traffic Control System Command Center (ATCSCC), known as National Aviation Meteorologists, and the Center Weather Service Units (CWSU). Although any of the collaborators can initiate a CAWS, AWC aviation meteorologists have the final decision-making authority. The proposed CAWS identifies weather that may result in a change to the daily operations plan and is determined to have strategic importance.

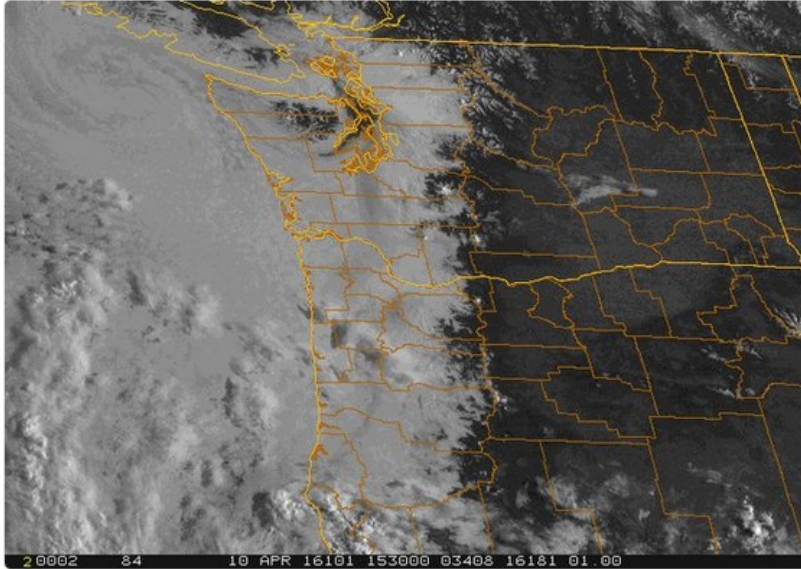
The CAWS consists of a graphic describing the thunderstorm location, coverage, timing, and movement, as well as the level of forecast confidence. A valid time, list of ARTCCs and terminals affected, summary, and discussion are included in a companion text document. The CAWS is generated 24 hours a day between the beginning of March and end of October, on an event-driven basis, generally two to eight hours prior to the expected start of impactful convection.

The CAWS is available via the AWC website at:
<http://www.aviationweather.gov/caws>



NWS CWSU Seattle 
@NWSCWSUZSE

Deep marine layer = extensive stratus west of Cascades. Ceilings mainly 2-3,000 ft range; tops mainly 3500-5000 ft.



RETWEETS 14 LIKES 11



Reaching Out Through Social Media

By Alex Dodd, Aviation Meteorologist

The aviation meteorologists at the Seattle Center Weather Service Unit have been focused on providing the most up-to-day observed and forecast weather information to FAA air traffic management and control staff at the ZSE Air Route Traffic Control Center for decades, and we are always looking for new and innovative ways to improve how we get that information to our core partners.

Recently, CWSU meteorologists have been utilizing social media as a means to improve our decision support services. We're encouraging staff at the ZSE ARTCC to "like" us on Facebook and "follow" us on Twitter as a means of becoming more "Weather Ready" for their shifts. All of our content is geared toward weather events that will impact air traffic across the Pacific Northwest, with a focus on the more critical operations around busier terminals like Seattle, Portland, and Spokane. We share information and images from partners that are valuable to Pacific Northwest aviation interests.

Twitter is an excellent means to disseminate weather information quickly and concisely, such as an urgent PIREP or a radar image of a line of strong thunderstorms with high cloud tops. Meanwhile, Facebook has been a better tool for us to provide a more detailed narrative or tell a story through several images, whether it be describing the expected weather across the Pacific Northwest airspace for the day ahead or a relevant educational topic.

Local Procedures

Through a compilation of webcams we have collected, we are able to share live views of skies from numerous locations around the Pacific Northwest. We also share important tools such as weather briefing pages designed specifically for controllers at the Seattle and Portland Terminal Radar Approach Control (TRACON) facilities.

Social Media is allowing us to reach an increasingly larger audience of aviation enthusiasts quickly. We believe this has the added benefit of making the broader aviation community more aware of weather that may impact their flights, thus increasing aviation safety.

Often we receive reports and pictures of weather pilots have been experiencing in the air. We encourage interaction & questions from our followers, which now number over 2,700 on Twitter and 5,500 on Facebook. Please find us on Facebook at NWSCWSUZSE, or follow us on twitter @nwscwsuzse!

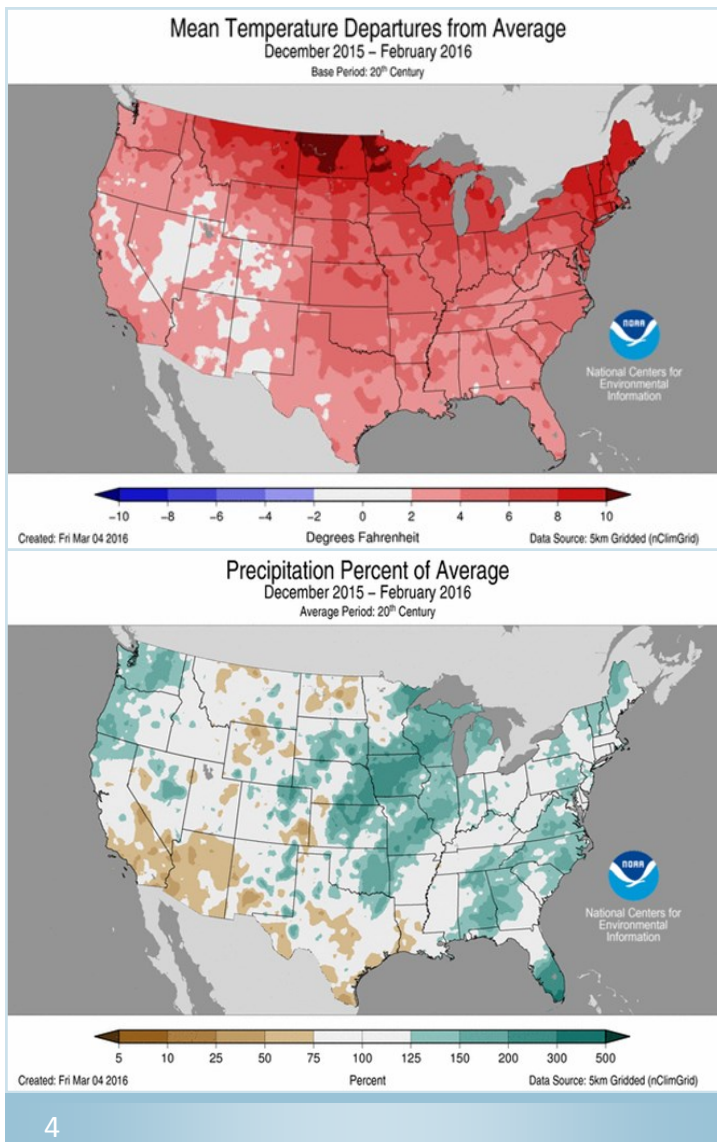
A Record El Niño

By Steve Adams, Aviation Meteorologist

El Niño is a warming of sea surface temperatures across the central and Eastern Pacific, and 2015 saw one of the strongest on record. While this event was forecast well, its effect on the Pacific Northwest was somewhat unexpected.

NOAA's 90-day winter season forecast, issued in October 2015 for the 3-month period from December 2015 to February 2016, indicated a high probability for above normal temperatures and a moderate probability for below normal precipitation. Also included in this forecast was a likelihood of worsening drought conditions over the Pacific Northwest. This forecast followed what generally occurs in the Pacific Northwest during a winter when an El Niño is present, but that's not exactly how things played out.

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The temperature forecast for warmer than normal conditions generally verified as expected, and we can see that trend in the top graphic on the right. Somewhat surprising, however, was the precipitation forecast, which was under forecast. While typically below normal during an El Niño, our precipitation and snowpack this year was anything but. In fact, Seattle broke a record for most precipitation from October 1st to March 1st.

Temperature departures from average were above to well above normal between December and February, as forecast. However, precipitation for the Winter season ended at, or above, normal for a large portion of the Pacific Northwest, as shown in the bottom graphic on the right. This is not what is typically seen during a Winter when an El Niño is present, and can be attributed, in part, to several land falling atmospheric river events.

Meteorologists and climatologists are still studying this event, and theories continue to arise as to why the Pacific Northwest was so wet. But the good news is that the prevailing drought conditions of early Autumn have improved dramatically, and reservoirs are near normal going into the summer.

So, what's in store for this year? Brace yourselves. La Niña is coming!

New Look, Same Great Content

Did you notice the new look and feel of the ZSE Weather Watch? It's our hope the modern design and easy to follow layout makes for a more enjoyable experience. What do you think? Did we nail it, or should we start over from scratch? We'd love to hear your feedback!

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