



The North Coast Observer

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Summer has returned to Northwest California, and with it, longer days and warmer temperatures. In fact, temperatures can occasionally get downright hot, especially in the interior valleys. Remember to stay hydrated as temperatures soar. During the summer, it's not safe to leave pets or children in a parked car, even if the outside air temperature is in the 70s and the windows are cracked open. Thunderstorms are another summertime threat, especially over the interior mountains. Remain alert for deadly cloud-to-ground lightning, and move indoors if you hear thunder (nature's lightning warning system). **Stay safe and enjoy the weather!**

Upcoming Summer Events

Date	Event
Jun 1	Meteorological summer begins
Jun 21	Astronomical summer begins at 8:54am
Sep 1	Meteorological fall begins

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YouTube	youtube.com/NWSEureka

NWS Eureka Provides Weather Support for Emergency Response Helicopter Exercises

by Ryan Aylward

The U.S. Coast Guard organized and participated a regional helicopter and cliff rescue exercise conducted along the Humboldt County coast on April 17th and 18th. Numerous emergency response agencies took part in the exercises, including the California Highway Patrol (helicopter), CalFire (helicopter), National Park Service, California State Parks, California Game Wardens, local fire departments, FEMA, CalOES, and the National Weather Service in Eureka. This exercise gave NWS Eureka the chance to demonstrate our capabilities and discuss how we can help serve emergency responders during incidents.



Forecaster **Jonathan Garner** provided an aviation and marine weather briefing on April 17th to all the participants in advance of the exercises. Forecaster **Matthew Kidwell** provided direct decision support when dense fog impacted helicopter operations on the 18th. In the end, cliff rescue helicopter operations had to be cancelled due to the fog, but it was still a great opportunity to meet with our close partners and provide assistance for their very important exercise.



Flooding – April 5th-9th
by Matthew Kidwell

Area Water Temperature Product Now Available
by Scott Carroll



Smith River at Highway 197.
Photo courtesy of Del Norte Emergency Manager.

The month of April got off to a wet start in Del Norte county. Rain fell on the first 8 days of the month, leading to around twice as much rainfall compared to the normal amount for the whole month of April. The 7th and the 8th saw the heaviest amount of rainfall. The only two sites with long term records, the Gasquet Ranger Station and Crescent City Airport, both set daily records. In fact, the Gasquet Ranger Station saw the largest rainfall total in April ever recorded in a 24-hour period since records began in Gasquet in 1950. The rainfall amounts from this event varied widely due to the terrain influences. Areas just a mile farther away from the mountains recorded significantly more rainfall.

This rainfall caused rapid rises on the Smith River, but the river didn't reach flood stage (pictured above). The smaller streams and creeks also rose rapidly and out of their banks. This produced many areas of localized flooding and closed some roads.

Rainfall Data from April 5 th -10 th	
Station	Rainfall
Crescent City 2N	9.14
Crescent City 4NE	10.37
Crescent City 8NNE	13.01
Crescent City Airport	6.08
Elk Valley	5.60
Fort Dick	12.16
Gasquet Ranger Station	13.13
Smith River 1SSE	13.31

One of the biggest safety hazards in the local area is cold water. This is especially true during the spring and summer months as snow melt maintains cold river temperatures and swift river flows and warm air temperatures make river activities more appealing.

In May, National Weather Service in Eureka began creating an hourly area water temperature product for Northwest California (product ID SFOOSOEKA). This product lists numerous river and coastal waters locations and their current water temperatures, along with the change in temperature during the past 24 hours. In addition, a quality control flag is indicated if the 6 or 24 hour change exceeds the threshold listed below the table. Below the main product, a table of cold water exposure times is listed along with cold water safety information.

This product is available linked from our website front page via either the text product selector or by clicking the **Area Water Temps** icon near the bottom of the page.

Area Water Temperatures for Northwest California
National Weather Service Eureka CA
9:15 AM PDT Thu Jun 13 2019

This product contains provisional data from automated gauges. These data have not been reviewed or verified for accuracy.

Location	Basin	Water Temp F	QC Obs 24Hr Change Flag
Klamath 3SE	Klamath River	64	+0.7
Orleans	Klamath River	66	+0.8
Helena 3N	Trinity River N	55	-0.2
Douglas City 1SW	Trinity River	48	+0.2
Helena 1SSE	Trinity River	51	-0.1
Lewiston 1NE	Trinity River	48	+0.1
Lewiston Hatchery	Trinity River	47	0.0
Lewiston 2NW	Rush Creek	51	+0.4
Branscomb 5N	Elder Creek	56	-0.1
Ettersburg 1E	Mattole River	59	-0.3
Hopland 4N	Russian River	58	-0.3
Ukiah 3NNE	Russian River E	54	+0.1
Crescent City	Crescent Harbor	50	
Eureka 11NW	Pacific Ocean	53	
North Spit	Humboldt Bay	53	
Eureka 17WSW	Pacific Ocean	20	
Cape Mendocino	Pacific Ocean	52	
Arena Cove	Arena Cove	54	

* QC Flag indicates the river temperature has changed 5F or more in 6 hours or 10F or more in 24 hours.

^^

Water temperatures can be cold, even if the air temperature is warm. Immersion in cold water can be life threatening very quickly due to cold water shock and loss of muscle control. If you choose to venture out, wear all cold water protective gear, including a life jacket, in the event of an accident.

Cold Water Exposure Times

Water Temp F	Loss of Muscle Control	Exhaustion/Unconsciousness
33-40	1-3 min	15-30 min
40-50	1-5 min	30-60 min
50-60	10-15 min	1-2 hr
60-70	30-40 min	2-7 hr
70-80	1-2 hr	2-12 hr

Sample area water temperature product

Spring Weather Summary

March

The weather in March was much closer to normal than what Northwest California saw in February. Temperatures were generally within a degree or two of normal. Rainfall was above normal in the south and below normal in the north. The middle of the month saw a week of mainly dry weather. Otherwise, rain was fairly well spread out over 14 days of the month. Thunder was reported on the 28th in Ukiah, but that was the only report of thunder for the month in the climate record.

April

There was a significant change in the weather pattern during the month of April. Early in the month, it was wet, especially in the northern portion of the area. Most of the rain for the month fell in the first 10 days. In the north, this brought rainfall totals for the month well above normal, despite dry conditions in most areas after the middle of the month. Daily rainfall records were set on the 7th and the 8th in Crescent City. Farther south, significantly less rainfall was observed, and the month ended up well below normal. Temperatures across the area were generally above normal. Ukiah reported four consecutive days with high temperatures over 90°F on the 23rd through the 26th. Along the coast, persistent strong northerly winds kept temperatures near normal.

May

The month started out with a continuation of the dry weather that began in April. Inland areas saw above normal high temperatures for this period as well. Mostly dry weather prevailed until the middle of the month, when a pattern shift brought a return to more winter-like weather. The entire area received unseasonably heavy rainfall, and inland locations experienced unseasonably cool temperatures for the second half of the month. Despite the lack of rainfall during the first half of the month, monthly rainfall totals ended up above normal in most areas. Coastal areas saw near normal temperatures with a persistent marine layer, while the inland areas varied depending on the influence of the marine layer.

Spring Record Events

Date	Location	Record	Value	Previous Record
Mar 16	Eureka	Rainfall	1.27"	1.21" in 1966
Apr 7	Crescent City	Rainfall	2.84"	1.44" in 2005
Apr 8	Crescent City	Rainfall	1.96"	1.26" in 2005
May 15	Ukiah	Rainfall	1.18"	.48" in 2000
May 16	Ukiah	Rainfall	.93"	.59" in 1996



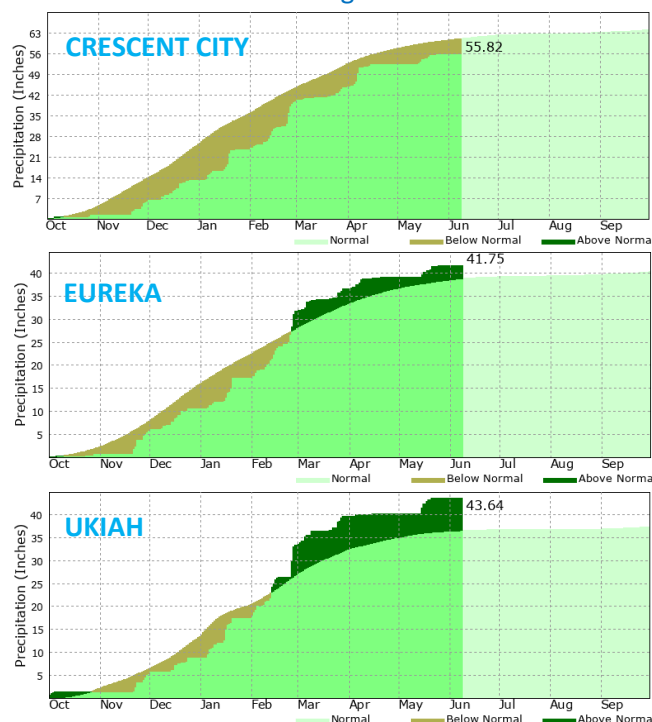
Spring 2019 Monthly Climate Comparison

	Crescent City			Eureka			Ukiah		
	Ave Hi	Ave Lo	Total Rain	Ave Hi	Ave Lo	Total Rain	Ave Hi	Ave Lo	Total Rain
Mar	54.1	40.4	4.63	55.8	41.6	4.79	61.8	41.2	6.28
Apr	56.5	47.2	7.87	58.5	48.0	2.51	73.3	47.5	0.59
May	57.7	48.1	3.29	58.7	48.4	2.61	75.0	48.5	3.35

temperatures in °F, rainfall in inches

Water Year-to-Date Precipitation Comparison

[click images for links](#)



data through June 10th

Summer Outlook (June-August)

[click images for links](#)

The Climate Prediction Center's summer outlook for northwest California is calling for better than even chances of above normal temperatures (*figure 1 below*). Even chances of above and below normal precipitation are forecast (*figure 2 below*).

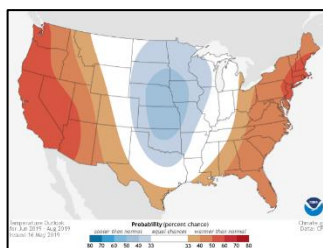


Figure 1 – Temperature Outlook

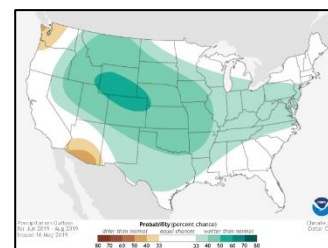


Figure 2 – Precipitation Outlook

Another Busy Spring for NWS Eureka Community Outreach

by William Iwasko

Our office participated in numerous outreach and educational events this spring. Several school and community groups visited our office to learn more about meteorology and to see the tools that we use to develop our forecasts. A group of college students also learned how to properly fill and stack sandbags.

Warning Coordination Meteorologist **Ryan Aylward** and Hydrologist **Kathleen Lewis** attended the Blue Lake school fair, where they talked to kids about water safety. Ryan also attended the 51st annual **Pony Express Days** in McKinleyville where he talked to local residents about water safety.



Warning Coordination Meteorologist Ryan Aylward at the 51st annual Pony Express Days in McKinleyville.

Science and Operations Officer **Mel Nordquist**, along with meteorologists **Tyler Jewel** and **William Iwasko**, attended the 31st annual **Redwood Environmental Education Fair (REEF)** where they presented hands-on weather experiments for kids in 4th and 5th grades. This year, they discussed the scientific method, the water cycle, rain gauges, vortex rings, and tornadoes.

Hydrologist **Kathleen Lewis** and meteorologist **Josh Whisnant** attended **Crescent City Water Safety Day** where they described the hazards of the ocean and how students can remain safe while visiting the beach to area 5th graders.

Meteorologists **William Iwasko** and **Ed Swaffod** set up a booth at the **McKinleyville Safety Day** where they talked with local residents about earthquake and weather safety. Many residents wanted to talk about the 3" of snow that had fallen in McKinleyville earlier in the year.

Warning Coordination Meteorologist **Ryan Aylward** and meteorologist **William Iwasko** attended the **Crescent City School's STEAM** (science, technology, engineering, arts, and mathematics) **Expo**. They talked about tornadoes, earthquakes, tsunamis, the water cycle, types of rain gauges, and how a watershed's flow changes based on land cover. ↗

Another Busy Spring for NWS Eureka Community Outreach (continued)

by William Iwasko



Meteorologist William Iwasko demonstrates the water table at the Crescent City School's STEAM Expo.

If you have an event that you would like a NWS meteorologist to attend or to setup an office tour, send an email to Debbie.Richie@noaa.gov or call us at (707)443-6484 Monday through Friday 8 am to 5 pm.

NWS Eureka Partners with Humboldt County EOS for Tsunami Preparedness Week

by Ryan Aylward



When the Humboldt County Office of Emergency Services (OES) asked for our participation in a tsunami preparedness week activity, we immediately jumped at the opportunity! Humboldt State University Emeritus Professor **Lori Dengler** and NWS Eureka Warning Coordination Meteorologist **Ryan Aylward** were paired up to answer commonly asked questions related to tsunamis and earthquakes as local tsunami experts.

The 14 videos covered such topics as how the tsunami hazard zones were created, when the next "big one" will hit, and who issues tsunami warnings. The videos were a hit on Facebook, with many comments, shares, and likes. These videos have now been uploaded to YouTube for anyone to view and use (click [here](#)). We look forward to partnering again with Humboldt County OES on another fun project!

Astronomy Corner

by Scott Carroll



Jupiter is at its closest point to earth of the year on June 10th, making for excellent nighttime viewing. Jupiter is brighter than any nighttime object except for Earth's moon and Venus. While it may occasionally be possible to see one or two moons of Jupiter with binoculars, best viewing is

obtained with a telescope. In addition, several bands across the surface of the planet can be seen. On July 9th, Saturn is at its closest point to earth of the year. While the planet itself is visible with the naked eye or binoculars, a telescope is needed to see its rings.

The Perseid meteor shower returns in mid-August, with the peak around August 12th. Unfortunately, we will be around the time of the full moon, which will make observing this event more difficult. Around the middle of each month, both Jupiter and Saturn will appear very close to a full moon. See the table below for moon conjunctions with these planets.

Make sure to check the forecast before heading out at weather.gov/eureka!

Summer Moon Phases					
June		July		August	
●	3 rd	●	2 nd	☾	7 th
☾	9 th	☾	9 th	●	15 th
●	17 th	●	16 th	☾	23 rd
☾	26 th	☾	24 th	●	30 th
		●	31 st		

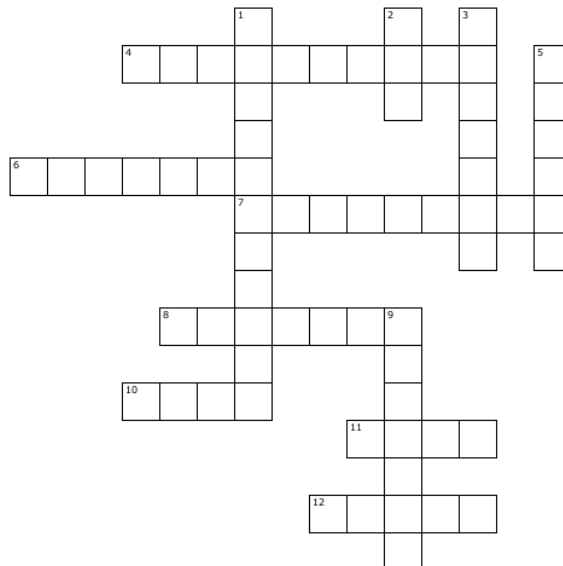
Summer Night Sky Calendar	
Date	Event
Jun 1	Moon-Venus conjunction
Jun 5	Moon-Mars conjunction
Jun 10	Jupiter opposition
Jun 16	Moon-Jupiter conjunction
Jun 18	Mercury-Mars conjunction Moon-Saturn conjunction
Jul 4	Moon-Mercury conjunction
Jul 5	Mercury-Mars conjunction
Jul 9	Saturn opposition
Jul 13	Moon-Jupiter conjunction
Jul 16	Moon-Saturn conjunction
Jul 21	Mercury inferior conjunction
Aug 9	Moon-Jupiter conjunction
Aug 12	Moon-Saturn conjunction Perseid meteor shower maximum

moon phase and event information courtesy of NASA

Kid's Corner

by William Iwasko

Weather Crossword



Across

- 4. In general, a tornado occurring over water.
- 6. The composite or generally prevailing weather conditions of a region, throughout the year, averaged over a series of years.
- 7. An instrument for measuring the quantity of rain that has fallen.
- 8. The sound caused by rapidly expanding gases in a lightning discharge.
- 10. An extratropical low or an area of sustained surface winds of 34 (39 mph) to 47 knots (54 mph).
- 11. Precipitation in the form of ice crystals, mainly of intricately branched, hexagonal form.
- 12. Any high flow, overflow, or inundation by water which causes or threatens damage.

Down

- 1. a measure of the internal energy that a substance contains.
- 2. water droplets suspended in the air at the Earth's surface
- 3. A low, generally gray cloud layer with a fairly uniform base.
- 5. A whirling mass of air in the form of a column or spiral. It need not be oriented vertically but, for example, could be rotating around a horizontal axis.
- 9. A luminous arc featuring all colors of the visible light spectrum.

Click [here](#) for the puzzle solution



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