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Welcome back to the latest installment of The North Coast Observer! Even though the weather has been unusually quiet this winter, it's been a busy time at your National Weather Service office in Eureka. We've been preparing ourselves for taking over forecasting and warning responsibilities for Lake County (see "[Welcome to the Family, Lake County!](#)"). We've also been preparing our computer system for both Digital Aviation Services and Hazard Services. Digital Aviation Services will ultimately allow us to provide grid-based forecast to the aviation community. Hazard Services will allow Eureka's forecasters to create watches, warnings, and advisories from a single program instead of the multiple pieces of software we now use. Keep checking the seasonal editions of this newsletter for more information on these and other exciting developments!



Follow Us on Social Media!

- | | |
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Welcome to the Family, Lake County!

by Scott Carroll

On March 3rd, Lake County became part of the NWS Eureka forecast service area after previously being part of the NWS Sacramento office's area. Lake County is now split into two public forecast zones, North Lake County (zone 114) and South Lake County (zone 115). See the map below for the new NWS Eureka forecast area map.

Numerous activities have been going on at NWS Eureka during the past several months in preparation for this transition. Meteorologist **Josh Whisnant** has been tasked with providing area familiarization training to the staff. Numerous changes to our computer system were made to facilitate the change. Coordination with local officials (emergency management, Department of Agriculture, etc.) is ongoing. The GraphiCast map and the sunrise and sunset image that we include on social media have both been updated to include Clearlake. Other changes have been made to the GraphiCast map (see "[GraphiCast Map Revamped](#)").

If you are a Lake County resident, the change will be mostly transparent. However, please make sure you begin to follow NWS Eureka on social media (including our website). The list of social media addresses is in the previous column at the bottom of the page.

We look forward to working closely with everyone in Lake County!



Significant Weather Events of 2019

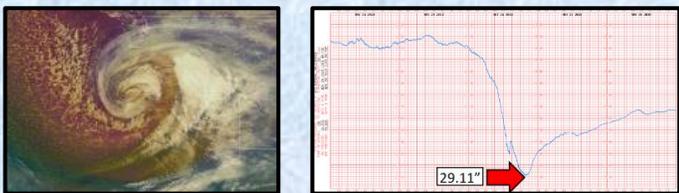
by Matthew Kidwell

Major events of 2019 listed in chronological order...

- On **January 17th**, 25 to 30 foot waves coincided with a very high tide. This caused significant damage to several houses in Shelter Cove.
- Snow at the coast on **February 10th**. See article "Cool & Wet February Across the Area" in the [Spring 2019 North Coast Observer](#).



- Significant flooding occurred on **February 26th and 27th**. See article "Cool & Wet February Across the Area" in the [Spring 2019 North Coast Observer](#).
- Eureka recorded the fifth coldest February ever since 1887 and the coldest since February 1917. For more details, see article "Cool & Wet February Across the Area" in the [Spring 2019 North Coast Observer](#).
- Hot temperatures on the coast. Temperatures reached the 80s in Fort Bragg, Eureka, and Crescent City on **June 11th**. For more details, see "Climate Corner" in the [Fall 2019 North Coast Observer](#).
- Extended warmth and sunny skies in Eureka due to warm ocean temperatures. See article "Where Have All the Clouds Gone?" in the [Fall 2019 North Coast Observer](#).
- Street flooding in Arcata on **September 18th**. Local rainfall amounts of over 2 inches in less than 2 hours. For more details, see article "Locally Heavy Rain in Arcata" in the [Winter 2019 North Coast Observer](#).
- On **October 27th**, critical fire weather conditions occurred over much of the area away from the coast, especially in Mendocino County. While no large fires broke out in Mendocino County, the Kincadee fire just to the south in Sonoma County saw rapid growth.
- On **November 26th**, the pre-Thanksgiving "Bomb Cyclone" brought widespread wind damage and power outages to much of the area. For more details, see the article "Coastal Bomb Cyclone" in the [Winter 2019 North Coast Observer](#).



- Also on **November 26th**, the bomb cyclone produced extreme waves over the ocean. A wave of 43 feet was measured at the Cape Mendocino buoy. This was the highest wave reported in the 15 years this buoy has been in place.

GraphiCast Map Revamped

by Scott Carroll

Adding Lake County to our forecast area provided a great opportunity to revamp the Northwest California GraphiCast (*sample below*). It was necessary to include a city within Lake County to the map (Clearlake was chosen due to its population). The background map was also updated, along with adding an inset for the Eureka metropolitan area (Eureka, Arcata, McKinleyville, and Fortuna). The expansion of the map south allowed for a bit more spacing between locations, allowing for Redding to be included. As always, a description of what is displayed is contained in the graphic title section (now conveniently moved to the top of the image).

In addition to forecast data from NWS Eureka, data on this map also comes from all of our neighboring offices (NWS Medford, NWS Sacramento, and NWS Monterey). The GraphiCast is usually posted each day on our Facebook page (facebook.com/NWSEureka).



Winter Weather Summary

by Matthew Kidwell

DECEMBER

The pattern change that started in late November continued through the month of December. Numerous weather systems moved through bringing periods of rain. Along the coast north of Cape Mendocino, the heaviest rain fell on the 21st and 22nd. Eureka received 2.59" of rain in a 24 hour time period with this system. However, this rain didn't make it very far inland or south, and northern coastal areas were the only ones that ended the month near normal. Elsewhere, despite the fairly high rainfall amounts, most areas were still slightly below normal since December is normally the wettest month of the year. The dry days featured persistent inland valley clouds, keeping temperatures chilly through much of the day. However, this was offset by some warm days, and temperatures across the area ended the month above normal.

JANUARY

A series of weather systems brought rain and mountain snow to the area during the month. Several feet of snow were reported in the mountains of Humboldt and Del Norte counties around January 16th. The coastal areas received above normal rainfall, but the majority of this rain didn't make it very far inland, with Weaverville and Ukiah reporting below normal precipitation. Fewer clouds and below normal precipitation also led to above normal temperatures in these for the month.

FEBRUARY

Dry weather prevailed for the month with less than 20 percent of normal rainfall fell across northwest California. A ridge of high pressure kept the weather systems well to the north of the area with only light precipitation occasionally making it into northwest California. This also impacted the temperatures, with high temperatures averaging about 10 degrees above normal in the inland areas. The lack of moisture allowed nighttime temperatures to drop, and, as a result, overnight low temperatures were well below normal. At the coast, high temperatures remained below normal.

Winter Climate & Spring Outlook

by Scott Carroll

Winter 2019-20 Monthly Climate Comparison

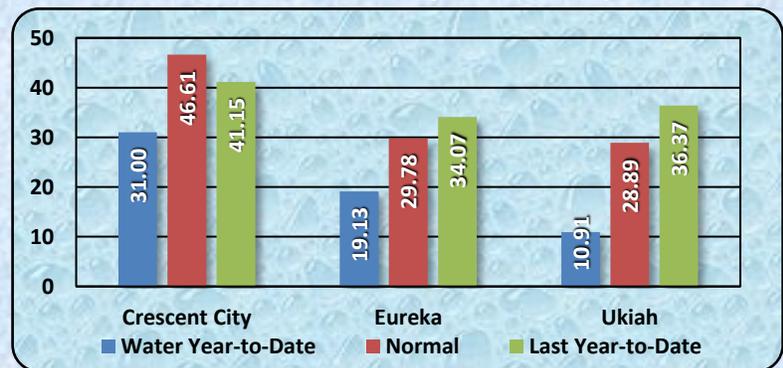
	Crescent City			Eureka			Ukiah		
	Ave Hi	Ave Lo	Total Precip	Ave Hi	Ave Lo	Total Precip	Ave Hi	Ave Lo	Total Precip
Dec	54.9	42.3	11.77	56.5	42.9	7.63	56.0	41.7	5.96
Jan	52.2	43.0	13.27	54.9	42.8	7.50	56.8	39.4	3.30
Feb	51.9	38.7	1.57	53.1	39.4	0.60	68.8	36.0	Trace

temperatures in °F, rainfall in inches

Winter Record Events

Date	Location	Record	Value	Previous Record
Dec 21	Crescent City	Rainfall	2.49"	2.20" in 2015

Water Year-to-Date Precipitation Comparison



rainfall in inches, data through Mar 10th

Spring Outlook (December-February)

[click images for links](#)

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

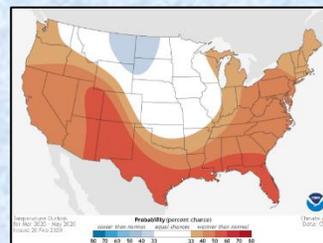


Figure 1 – Temperature Outlook

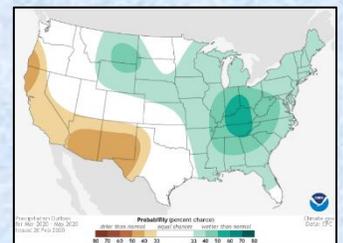


Figure 2 – Precipitation Outlook

Be Sure to Enter the NWS Eureka Photo Contest



Visit our Facebook page at facebook.com/NWSEureka for details!

NW California NOAA Weather Radio Information

General Information

NOAA All Hazards Weather Radio is a service of the National Weather Service. As the "Voice of the National Weather Service", it provides continuous broadcasts of the latest weather information from local National Weather Service offices. Weather messages are generally repeated every 5 to 10 minutes and are routinely updated every 1 to 3 hours. Messages are updated more frequently in rapidly changing weather conditions or if a nearby hazardous environmental condition exists.

The regular broadcasts are specifically tailored to the weather information needs of the people within the local service area of the transmitter. For example, in addition to general weather information, stations in coastal areas provide information of interest to mariners. Other specialized information such as hydrological forecasts and climatological data may be broadcast.

During severe weather, National Weather Service forecasters issue special warning messages concerning imminent threats to life and property. Special signals are added to warnings that trigger alerting features of specially equipped receivers. In the simplest case, this signal activates audible or visual alarms which indicate that an emergency condition exists within the broadcast area of the station being monitored. This alarm alerts the listener to turn up the volume and stay tuned for more information. More sophisticated receivers are automatically turned on and set to an audible volume when an alert is received.

Specific Area Message Encoder (SAME)

The National Weather Service is now using an alert system called [Specific Area Message Encoder \(SAME\)](#). This alert system employs digital coding to activate only specially programmed receivers for specific emergency conditions in a specific area, typically a county. Television, cable, and radio stations can use SAME to allow their listeners to hear warnings as they are being issued. SAME is also the primary activator for the new Emergency Alert. [Using NWR SAME](#) contains information on how to program your NWR SAME receiver including SAME codes for every county, parish, and independent city. Programmable NOAA All Hazards Weather Radios are on the market which utilize SAME technology. Here is a listing of all the [SAME County Codes](#) (FIPS Codes) used for the new SAME programmable NOAA All Hazards Weather Radios.

NOAA Weather Radio has been designated as the sole Government-operated radio system to provide direct warnings into private homes for both natural disasters and nuclear attack. This concept has been expanded to include warnings for all hazardous conditions that pose a threat to life and safety, both at a local and national level.

Where to Purchase a NOAA Weather Radio

Special radios that receive only NOAA Weather Radio, both with and without the special alerting features (SAME), are available from several manufacturers. In addition, other manufacturers are including NOAA Weather Radio as special features on an increasing variety of receivers. NOAA Weather Radio capability is currently available on some automobile, aircraft, marine, citizen band, and standard AM/FM radios, as well as communications receivers, transceivers, scanners, and cable TV. [Click here](#) for more consumer information, including a list of some weather radio manufacturers.

Area NOAA Weather Transmitters		
Transmitter <small>coverage map</small>	Frequency (MHz)	Coverage Area
Crescent City/ Brookings	162.55	Del Norte, southern Curry (OR), adjacent coastal waters
Eureka	162.40	Humboldt (w/ adjacent coastal waters), Del Norte coastal waters
Pt. Arena	162.55	Mendocino, Sonoma, adjacent coastal waters
Ukiah	162.525	Mendocino (w/ adjacent coastal waters), western Lake
Willow Creek/ Hoopa	162.45	Humboldt (land areas), western Trinity
Other Nationwide Transmitters		

Area SAME Codes	
County	SAME Code
Curry (OR)	041015
Del Norte	006015
Humboldt	006023
Lake	006033
Mendocino	006045
Sonoma	006097
Trinity	006105
Full Nationwide List	

TONE ALERT TEST

NWS Eureka conducts tests of the NOAA Weather Radio warning alarm tone on Wednesdays between 11 AM & noon (weather permitting)



Spring brings weather conditions that are generally more favorable for night sky watching. Temperatures are slowly creeping upwards, skies are more clear, and precipitation chances gradually taper off. This makes springtime an ideal time to get out and observe what the universe has to offer!

There are a couple of meteor showers that peak during the spring. The first is the Lyrid meteor shower, which peaks in mid-April. As luck would have it, this coincides with a new moon, meaning skies will be dark through the night. The second meteor event is the Eta Aquarid shower, which reaches its maximum in early May. Unfortunately, the moon will be nearly full, making the spotting of meteors more difficult. The best time to watch meteor showers is between midnight and dawn.

Mars, Jupiter, and Saturn will be in close proximity in the sky from mid-March through mid-April low in the late night southeastern sky. A waning crescent moon will join them on March 18th and 19th. The last quarter moon will rejoin the group around the middle of April. Mars will appear to move farther away from the cluster of planets later in April, but Jupiter and Saturn will remain close through the spring. A waxing crescent moon will appear near Venus low in the western sky shortly after sunset around April 26th. The last quarter moon rejoins Jupiter and Saturn in the southeastern sky after midnight around May 12th, followed by a thinner moon near Mars on May 14th.

Spring Moon Phases					
March		April		May	
☾	2 nd	☾	1 st	●	8 th
●	9 th	●	7 th	☾	15 th
☾	16 th	☾	14 th	●	23 rd
●	24 th	●	22 nd	☾	29 th
		☾	30 th		

Spring Night Sky Calendar	
Date	Event
Mar 18	Moon-Mars-Jupiter-Saturn conjunction
Mar 20	Mars-Jupiter conjunction
Mar 21	Moon-Mercury conjunction
Mar 31	Mars-Saturn conjunction
Apr 14	Moon-Jupiter conjunction
Apr 15	Moon-Saturn-Mars conjunction
Apr 21	Lyrid meteor shower maximum
Apr 26	Moon-Venus conjunction
May 4	Eta Aquarid meteor shower maximum
May 12	Moon-Jupiter-Saturn conjunction
May 14	Moon-Mars conjunction
May 17	Jupiter-Saturn conjunction
May 22	Mercury-Venus conjunction
May 23	Moon-Venus conjunction
May 24	Moon-Mercury conjunction

Moon phases and event information courtesy of NASA

Think that child and pet car safety is only a summertime issue? Think again! The inside of your car can heat rapidly even in the spring, posing a risk of heat-related illness or death to humans and pets alike.

Estimated Vehicle Interior Air Temperature v. Elapsed Time

ELAPSED TIME	OUTSIDE Air Temperature					
	70	75	80	85	90	95
0 minutes	70	75	80	85	90	95
10 minutes	89	94	99	104	109	114
20 minutes	99	104	109	114	119	124
30 minutes	104	109	114	119	124	129
40 minutes	108	113	118	123	128	133
50 minutes	111	116	121	126	131	136
60 minutes	113	118	123	128	133	138

Courtesy Jan Null, CCM; Department of Meteorology & Climate Science, San Jose State University



Upcoming Spring Events

Date	Event
Mar 1	Meteorological spring begins Growing season begins (zones 101, 103, 109-115)
Mar 8	Daylight Saving Time begins at 2 AM
Mar 19	Spring equinox at 8:50 PM
Mar 23-27	Tsunami Preparedness Week
Apr 1	Growing season begins (zones 102, 104-106)
Apr 15	Growing season begins (zones 107 & 108)
Apr 22	Earth Day
May 2	Wildfire Community Preparedness Day
May 15	Wear Your Life Jacket to Work Day
May 16-22	Safe Boating Week
May 18-25	Beach Safety Week
Jun 1	Meteorological summer begins



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