



# Hawai'i Ho'ohēkili

Skywarn Weather Spotter Newsletter  
National Weather Service, Honolulu, HI



Wet Season Edition, 2014

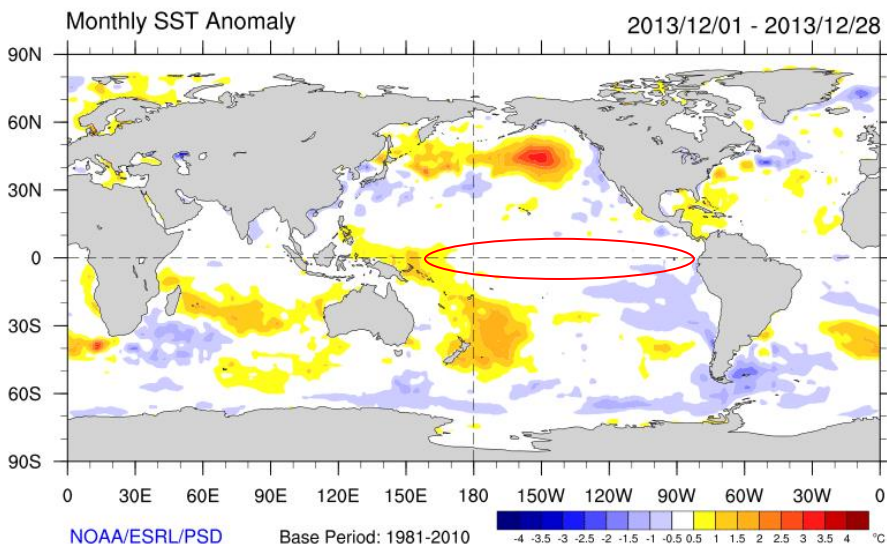
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**Inside this edition: El Nino and tropical Sea Surface Temps, drought continues on the Big Island & Maui, analysis of the Dec 15 2013 storm, and more!!!**

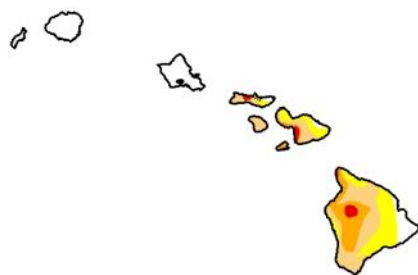
## ENSO Neutral Conditions Expected

During Nov/Dec, ENSO neutral conditions persisted, as reflected by the near average sea surface temperatures (SST) across the equatorial Pacific (see fig). Climate models predict above normal temperatures for Hawaii through June 2014, and above normal rainfall through April 2014. Based on the precipitation outlook, stream flow averages should increase over the next couple of months or at least remain near normal.



## Heavy Rains Bring Limited Relief to Maui & Big Is. – Kevin Kodama, Service Hydrologist

### U.S. Drought Monitor Hawaii



**December 31, 2013**  
(Released Thursday, Jan. 2, 2014)  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	26.97	73.03	49.82	19.86	3.12	0.00
Last Week (12/24/13)	20.79	79.21	49.82	19.99	3.12	0.00
3 Months Ago (9/29/13)	9.77	90.23	63.34	20.09	3.95	0.00
Start of Calendar Year (1/1/13)	17.25	82.75	63.34	25.55	10.36	0.00
Start of Water Year (9/1/12)	9.77	90.23	63.34	20.09	3.95	0.00
One Year Ago (12/31/12)	17.25	82.75	63.34	25.55	10.36	0.00

**Intensity:**  
 D0 Abnormally Dry      D3 Extreme Drought  
 D1 Moderate Drought    D4 Exceptional Drought  
 D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author:**  
Matthew Rosenzans  
CPC/NCEP/NWS/NOAA



<http://droughtmonitor.unl.edu/>

Cold fronts during the first half of December mainly affected the west of the state and left the east half relatively dry. A late December storm finally brought significant rain to the Big Island and portions of Maui County. However, most of the rainfall occurred over the lower windward slopes and provided only limited or no relief to the worst drought areas. As a result, extreme drought, or D3 on the map, remained over portions of Maui County and the Big Island with limited changes in coverage. For Maui County, D3 areas include the lower SW slopes of Haleakala from Kamaole to Kaonoulu, and portions of W Molokai serviced by the Kualapuu Reservoir. The Big Island D3 area in the Pohakuloa region of the Hamakua District expanded eastward while the area SW of Hawi improved to D2, or severe drought conditions.

Other notable areas of severe drought include the lower leeward slopes of West Maui from Lahaina to Maalaea, and portions of the leeward Big Island from Mahukona to

the north facing slope of Hualalai in the N Kona District. An area of D2 returned to NW Lanai due to recent dryness.

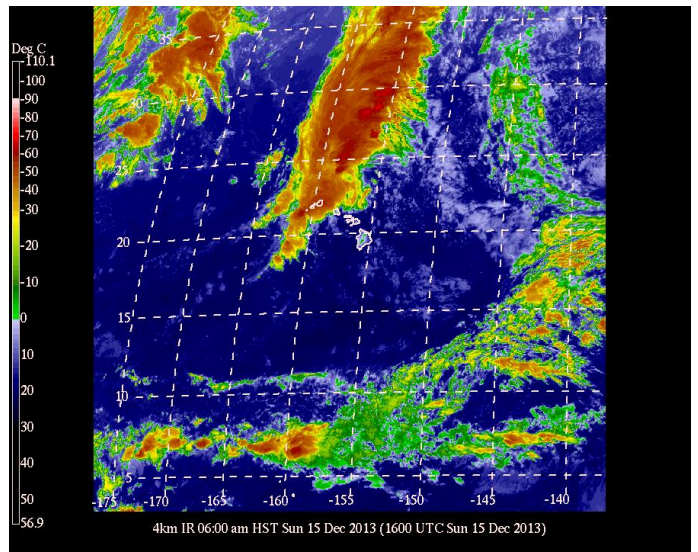
The December rainfall helped eliminate moderate drought, D1, over the windward Hamakua District and the south facing slopes in the Kau District from Punaluu to South Point.

# Analysis of a Vigorous Cold Front, 2013 DEC 15—Michael Cantin

A vigorous upper-level trough swung by to the north of

Hawaii while pushing a surface cold front across the state. Enhanced instability and wind shear along the frontal boundary instigated a line of deep convection that impacted Kaua'i and Honolulu counties.

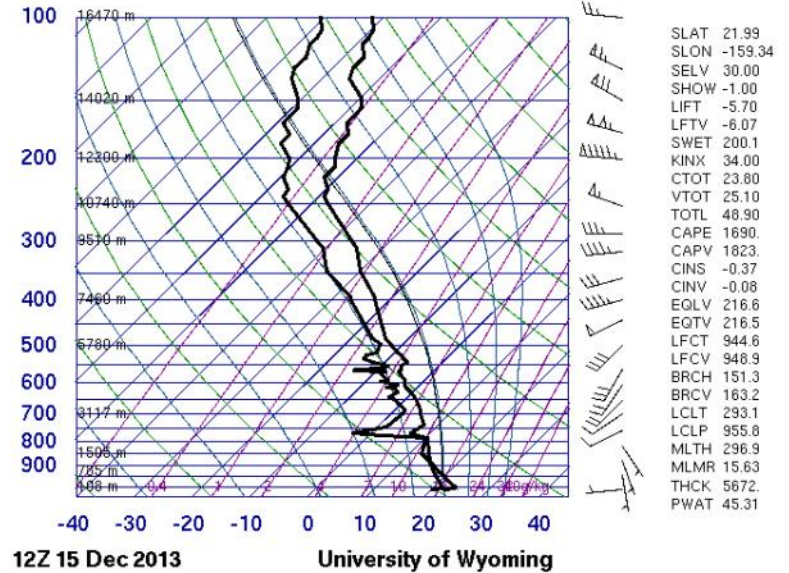
Satellite imagery at 2am 12/15 indicated a broad area of convection ahead of the approaching trough. Cold cloud tops were evident along the line, with coldest tops to the north of the state.



**Sounding Data:** A deeply saturated atmospheric profile was in place over Kaua'i ahead of the front. Precipitable water values were around 1.75 inches. CAPE values based on forecast surface temperatures were around 2300 J/kg. Winds were light from the southeast from near the surface up to around 4000 feet, and exhibited strong shear and veering with height.

0-6 km bulk shear values hovered between 30 and 40 knots during the peak of the event. The models had forecasted values consistently lower than this, generally 20-25 kt of shear in the time leading up to the event. This signaled to forecasters that the event may be stronger than forecasted by the models.

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## Products/Services Highlights:

As the convection approached and began to impact Niihau, Kaua'i and Oahu a series of products were issued to highlight the threats. The convection redeveloped quickly as it approached the state after weakening for a time. This led to the issuance of a short lead time Flash Flood Watch. An excellent SPS was issued to highlight the approaching convection before velocity data indicated a SVR would be necessary. The text of the SPS described the imminent threats and provided guidance on necessary safety actions. The SPS preceded impacts to Kaua'i by more than 30 minutes. Here's the text...

“At 455 AM HST...Radar showed a line of strong thunderstorms moving east at 20 mph over waters west of Kaua'i. These thunderstorms will move over Kaua'i shortly...bringing wind gusts in excess of 40 mph...as well as small hail... torrential rain...and intense lightning. Do not stay in the open as these storms come ashore...move indoors.”

Several Kauai Skywarn Spotters contributed to the decision making process with timely reports of 60 mph wind gusts, heavy rain, flooding and damage reports. Thank you for your efforts!!

A SVR was issued about 30 minutes after the SPS as the wind threat increased from the highlighted storm. The warning included direct mention of the area where power lines were later downed.





## National Weather Service Honolulu Videos Now Available

Recently we here at the NWS office in Honolulu started up an official YouTube page. It can be found here: <http://www.youtube.com/channel/UCg8Qp9gXKYeUOKR1ZEdXFKQ> or by doing a search for NWSHonolulu. Our channel is full of informative videos ranging from seasonal rainfall outlooks, to ocean safety, and reviews of recent hurricane seasons.

The highlight of our page is our locally produced flash flood safety video entitled “Flooding, Flash Flooding & Hawaii’s Wet Season”. This video discusses the usual weather patterns in place during our wet season and how to avoid flash flood and thunderstorm hazards. We’ve received over 1200 views since releasing the video and encourage you to watch and share the video and its important message.

As we move forward with our YouTube channel we’d love to hear what topics you’d be interested to see become a video. Send us your thoughts!



Editor: Ian Morrison, Incident Meteorologist  
National Weather Service, Honolulu, HI  
[ian.morrison@noaa.gov](mailto:ian.morrison@noaa.gov)

