# Hawai'i Ho'ohekili

**Skywarn Weather Spotter Newsletter**
**National Weather Service, Honolulu, HI**

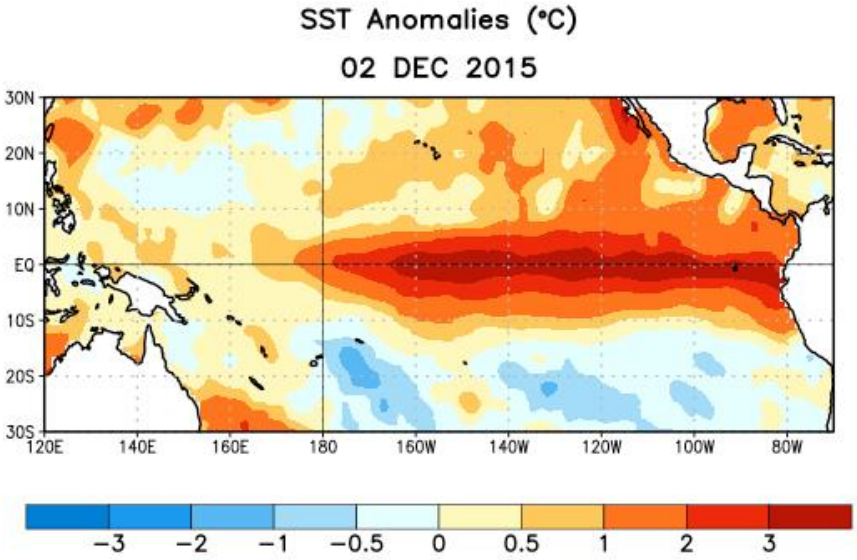
Wet Season Edition, 2016 | Issued — Jan 2016 | Spotter Newsletter Volume 12

**Inside this edition:** El Niño Advisory! A look back at the record breaking 2015 Hurricane Season. And more!!!

## El Niño Advisory!!

**El Niño is expected to remain strong through the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during late spring or early summer 2016.**

**NWS Honolulu expects significant below average rainfall this winter through April 2016. The dry conditions are tied to El Nino, which is considered the strongest since the 1997/1998 event, and may also end up being the strongest in more than 50 years.**




## Winter Outlook

NOAA's Climate Prediction Center (CPC) seasonal forecast for Hawaii:

- El Nino conditions typically increase the chances for dry conditions in Hawaii through the winter, leading to elevated chances for below median precipitation at all Hawaii forecast locations.

- SST anomalies surrounding the Hawaiian Islands are currently between a 1/2 and 1 degree above normal. This elevates the chances of above-normal monthly mean air temperatures for the Hawaiian Islands.

## Quote from a Scientist

"What El Nino does, especially one this strong, it causes a large scale change in the weather pattern; so areas that are normally wet will dry out and areas that are normally dry become wet."

"By time we get to April, let's say, we are looking at widespread moderate drought across the state," Kodama said. "If history repeats itself, we will start seeing drought conditions creeping back in and intensifying over time."

He added: "Even though we've had abundant rainfall recently and your storage tanks are filled, I wouldn't go crazy on the consumption right now, because things will change quickly. We will dry out, so if you want to ensure you have supplies through the winter months, maybe it is a good idea to start conserving now, especially for folks who would normally count on winter season rainfall."

- *Kevin Kodama, Senior Hydrologist, National Weather Service—Honolulu Hawaii*

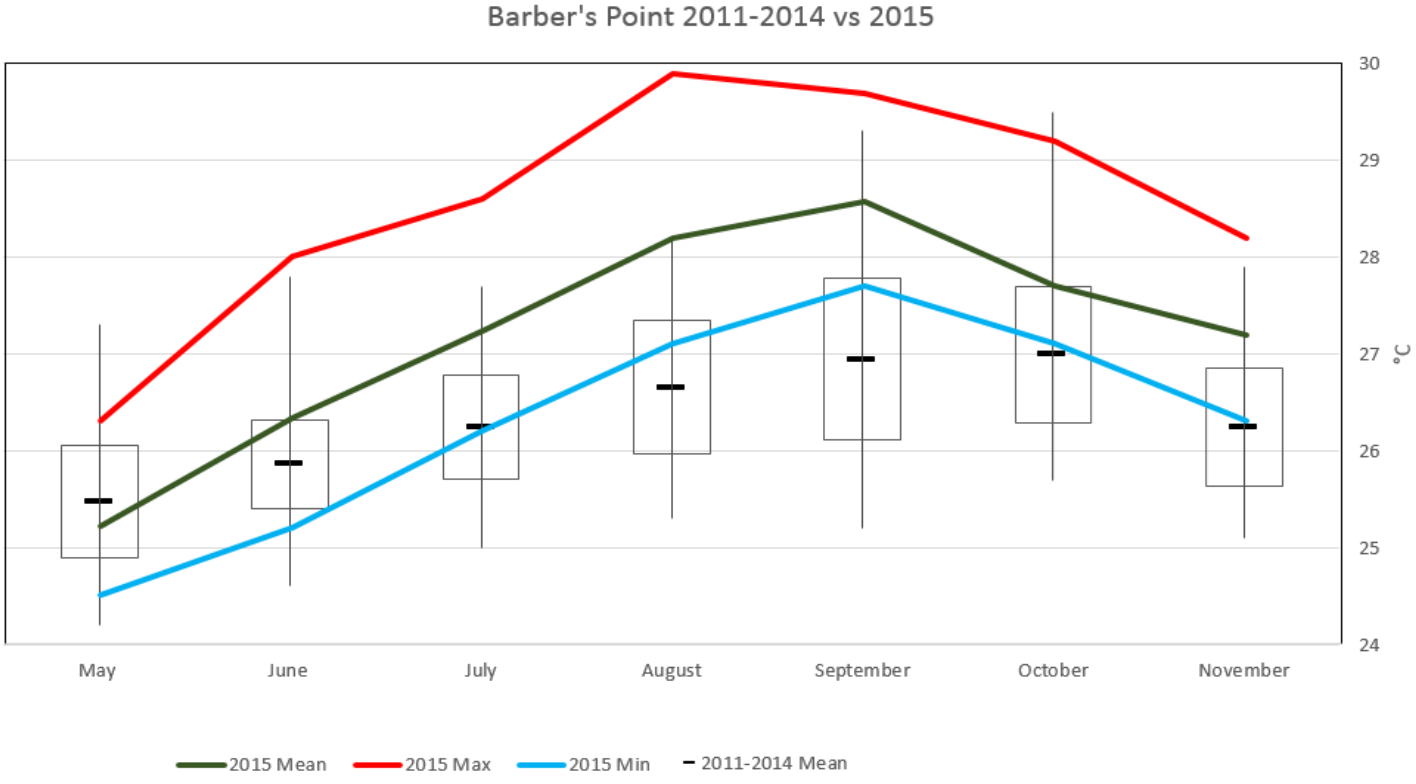
# 2015 Central North Pacific Hurricane Season: A Record Breaker

Based on preliminary data, 14 of the 15 Central North Pacific Tropical Cyclones that occurred in 2015 were named, 8 of which were hurricanes, and 5 of which attained major hurricane status (defined as category 3 or greater on the Saffir-Simpson hurricane wind scale). This breaks old records of 10 named storms (set in 1982 and 1997), 5 hurricanes (set in 1982 and 1994) and 3 major hurricanes (set in 1994).

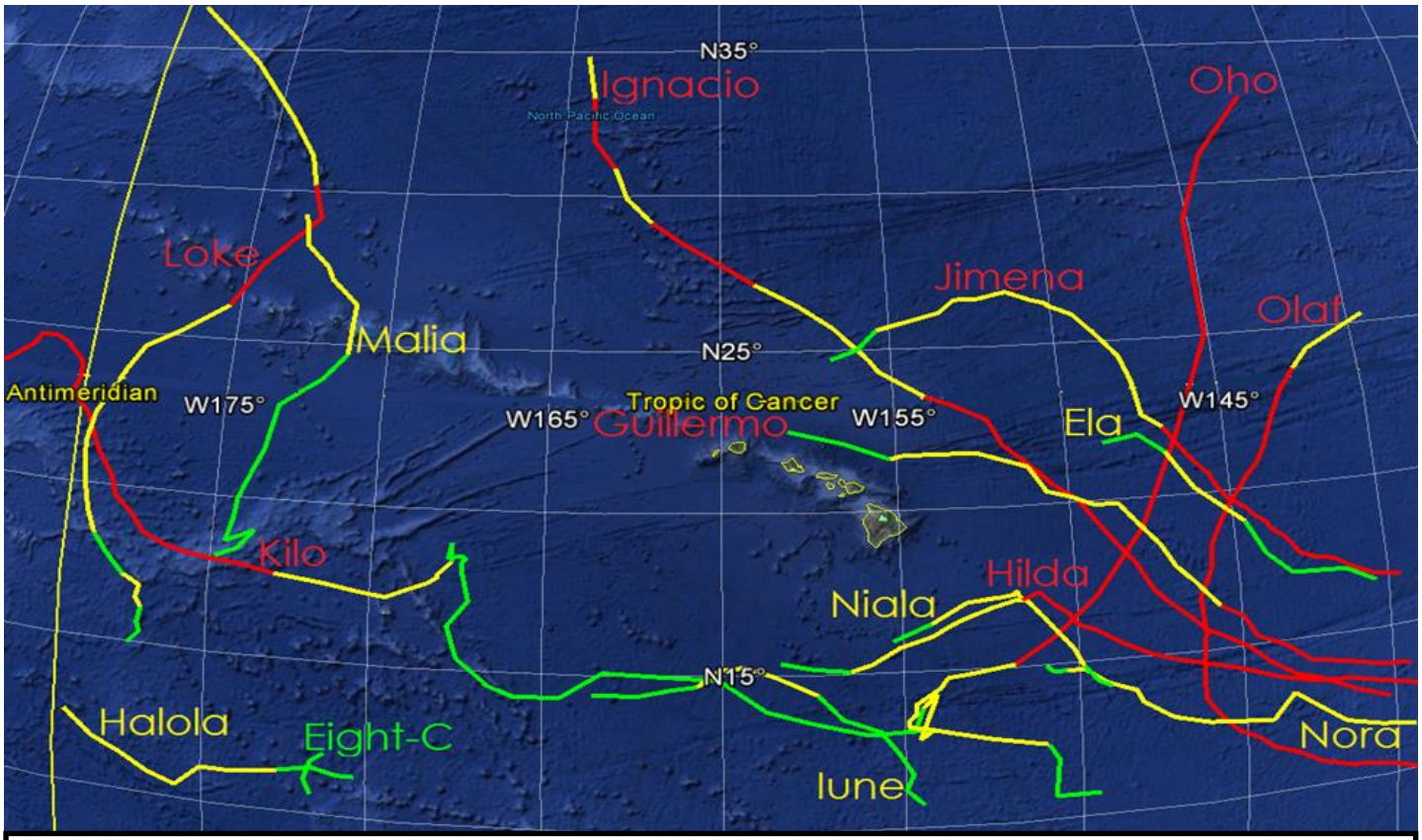
The 2015 CNP TC season featured 15 TCs that either developed within, or moved into, the basin. This is an unprecedented number of TCs for a single season, and is nearly double the upper-end of 5 to 8 TCs that were projected in the seasonal outlook provided in spring of 2015. The increased TC activity in the CNP is largely attributable to El Nino, with record-setting sea surface temperatures (SSTs) in the basin, and a reduction in deep-layer wind shear also playing a role. As seen in the Figure below, September SSTs near Hawaii were the warmest all-time for any month over the past 60+ years, having smashed the previous record by ~0.9C.

| NAME | DATES | MAX WIND (MPH) |
|---|---|---|
| TS ELA | 8-10 JUL | 45 |
| TS IUNE | 10-13 JUL | 40 |
| TS HALOLA | 10-12 JUL | 55 |
| H GUILLERMO | 2-7 AUG | 105 |
| MH HILDA | 8-13 AUG | 140 |
| MH KILO | 20 AUG-1 SEP | 140 |
| H LOKE | 21-26 AUG | 75 |
| MH IGNACIO | 27 AUG-4 SEP | 145 |
| MH JIMENA | 1-9 SEP | 120 |
| TS MALIA | 19-22 SEP | 40 |
| TS NIALA | 25-28 SEP | 65 |
| H OHO | 3-8 OCT | 95 |
| TD EIGHT-C | 3-4 OCT | 30 |
| TS NORA | 11-15 OCT | 60 |
| MH OLAF | 20-26 OCT | 130 |

*Table 1. Preliminary summary table for the 2015 Central Pacific Hurricane Season, with dates based on Coordinated Universal Time, UTC. TD = Tropical Depression TS = Tropical Storm, H = Hurricane, MH = Major Hurricane*

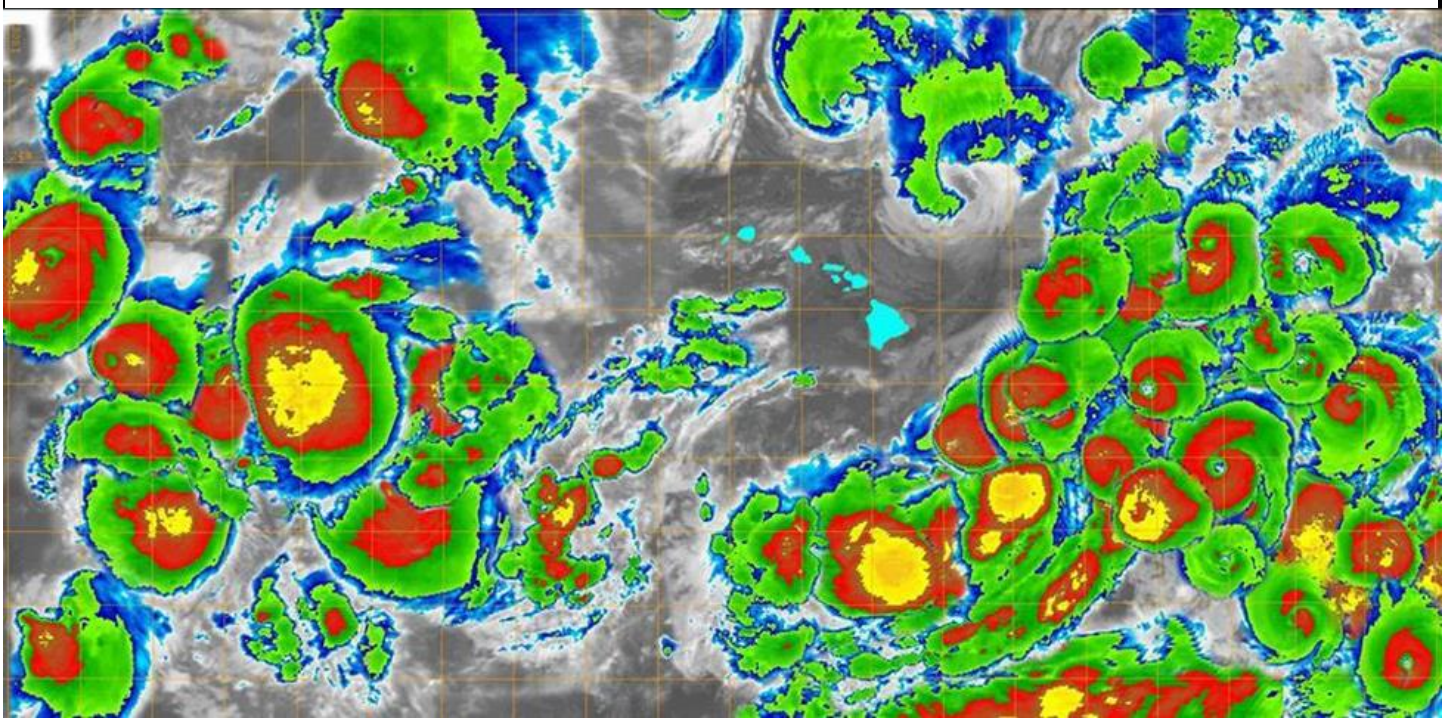



*Above: Barber's Point Buoy data showing well above normal SST's for the summer of 2015.*




*Above: Graphic showing preliminary tracks of the 15 TCs that occurred in the CNP during 2015. (Red-hurricane intensity; yellow-tropical storm intensity; green-tropical depression intensity)*

This mosaic below consists of infrared images from NOAA's GOES and JMA's MTSAT geostationary satellites. These images were pulled from the Naval Research Lab's online archive. For each of the 15 tropical cyclones this season, a daily image was extracted from the period when the cyclone was active in the Central North Pacific basin. Although there are some mismatched grids, especially in the northwest corner, the positions are generally good. Bottom line, the State of Hawaii was very luck this year!!



# 2015 Central Pacific Hurricane Records

*Thanks to Dr. Phil Klotzbach from Colorado State University, for documenting many of these records and highlights the environmental conditions that led to the record-setting season.*

● 16 TCs formed within or entered the CNP; which breaks the record of 11 TCs, set in 1992 and 1994. (Including TD Nine-C that formed out of season on December 30, 2015)

● The CNP had more days with multiple hurricanes (TCs) in 2015 than in all other years combined since 1970.

● Earliest storm during hurricane season: Ela; 9 July. Previous record, Wali; 17 July 2014.

● 2nd earliest storm during hurricane season: Halola; 11 July. Previous record, Maka; 11 Aug 2009.

● 3rd earliest storm during hurricane season: Iune; 11 July. Previous record, Moke; 4 Sep 1984. (Note that all three July 2015 storms formed before the CNP had ever seen one storm form in the basin during official hurricane season, with the previous record set by Wali; 17 July 2014. These statistics exclude TCs that have formed outside of the official season.)

● 3 CNP storms formed in 3 days; previous record was 18 days, set in 1982.

● 2015 marks the first time the CNP has ever seen 3 storms form in a calendar month.

● Kilo and Ignacio (while in the CNP) were part of a historic central and eastern Pacific outbreak - 3 major hurricanes (Jimena in east Pacific) at once for the first time on record, at one point they were all Category 4 intensity. Prior to this, two concurrent Category 3 hurricanes, let alone Category 4, had never been recorded in the CNP. (PK- or any global TC basin) (or; 2015 marks the first time that two major hurricanes (Kilo and Ignacio) existed in the CNP at the same time.)

● Kilo was the third TC to cross the International Date Line in 2015, breaking the old record of two TCs, set in 1997. (Per PK)

● Kilo traveled over 4,300 statute miles from its genesis point as a depression, from south of Hawaii to near the western Kuril Islands in Alaska.

● Oho was the 8th TS to form in the CNP in 2015, doubling previous all-time record of 4 (1982)

● Olaf was the 1st tropical cyclone on record to move from the East Pacific into CNP and then back to East Pacific.

● Olaf was the strongest CNP hurricane on record so late in the year-130 kt.

● Olaf crossed into the CNP from the East Pacific later in a calendar year than any other East Pacific TC on record.

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