



National Weather Service

Storm Data and Unusual Weather Phenomena



March 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Property Damage	Crops	Character of Storm
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HAWAII

HIZ002>005

Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore

01	0000HST	0	0	Drought
31	2359HST			

This was the third driest March on record in Honolulu since record keeping began in 1874. This was also the third driest January through March period for Honolulu since 1874.

Below average precipitation occurred statewide in March, with all first order and all automated rain gauges receiving less than average rainfall. Sixty-seven of the 73 rain gauges reported less than 50 percent of average for the month, while 35 received less than 25 percent of average. This continued the six month trend of drier than usual conditions for the entire state.

In the first half of March, weather patterns were dominated by a strong upper level jet stream across the Pacific Ocean north of the islands and multiple periods with upper level ridges over and to the west of the state. These combinations of phenomena responsible for the rainfall shortage are indicative of how El Nino affects weather in the state of Hawaii.

During the second half of the month, the ridge at all levels of the atmosphere shifted north. This resulted in the surface high northeast of the islands strengthening and moving to a more average early spring position. The shift in weather patterns brought stronger trade winds, which then produced more trade wind showers for the windward sides of the islands. This added rainfall has helped relieve some of the very dry conditions in windward areas. However, much more rain is needed to get beyond the longer term drought situation.

Oahu:

Below average precipitation again occurred in March as frontal systems that usually pass through or near the islands did not materialize. The greatest negative anomaly was in the leeward parts of the island, especially the central and southwest sections. The southwest side of Oahu, in the Waianae area (which is leeward of the Waianae Mountain range), saw the driest conditions. Only 2 to 20 percent of average precipitation (0.04 to 0.61 inches) occurred. Even what are usually the wettest sections of the island, the northeast facing windward areas and higher elevations of the Koolau Mountain range, received only 25 to 45 percent of average rainfall.

Maui County:

Molokai and Lanai were below average at reporting stations, with Lanai City receiving 1.64 inches (44 percent of average rainfall). Island of Maui reporting stations showed below average precipitation at all locations as well. Negative anomalies were especially noted in areas with a dependence on synoptic scale precipitation in March, such as Lahainaluna, Kihei, and Ulupalakua. This continues the several month period of very dry conditions in those locales. Zero to 18 percent of average rainfall occurred in those areas, with no rain at Kihei and 0.42 of an inch at Lahainaluna. The rainfall total for Kihei over the past 8 months has been 1.83 inches, which is only 14 percent of the average of 13.5 inches.

Hawaii County:

A dry pattern continued on the Big Island, with all areas seeing well below average rainfall. However, this is one island where the return of trade winds and showers was significant in helping to relieve some of the driest conditions in the state

The island wide negative precipitation anomaly is likely due to the decreased frequency of frontal systems and, also, possibly due to weaker or drier than average trade winds in the first half of the month. The Kona side of the island, dependent on convective precipitation and, this time of the year, on synoptic scale precipitation patterns, was well below average at all reporting locations. Honaunau, south of Captain Cook, and Kealahou were stations with the greatest negative rainfall anomaly with only 8 and 18 percent of average precipitation, 0.42 of an inch and 0.99 of an inch, respectively.

Kauai:

All reporting stations had below average rainfall for the month. The most negative anomalous precipitation amounts in March occurred in the south and southwest portions of the isle, with only 22 to 38 percent of average rainfall there. The east side of the island from Kapahi to Lihue received the greatest amounts of precipitation, but the totals were only 45 to 73 percent of average

The following are rainfall statistics (in inches) for selected locations on Oahu, Maui, the Island of Hawaii, and Molokai for March 1998. For comparison, the average for the month and percent of average, respectively, are listed for each site in the next two columns. The following two columns represent the rainfall totals and average rainfall totals for the three month period January-March. The last three columns show rainfall totals from March 1994, March 1987, and March 1983, which were other El Nino-influenced time periods.

Mar. 98	Avg.	%Avg.	3 Month	Avg./3 months	Mar94	Mar87	Mar83
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HAWAII

Oahu									
Honolulu	0.03	2.2	1	1.01	8.0	3.77	0.31	0.5	3
Waianae	0.04	2.5	2	0.87	8.6	4.23	0.15	1.66	
Hawaii Kai	0.87	3.9	22	2.48	11.7	4.80	0.40	N/A	
Manoa									
Lyon A	5.92	14.4	41	14.69	37.8	27.43	4.17	2.12	
Waialua	0.24	3.8	6	2.90	13.3	4.14	1.62	2.03	
Ahuimanu (windward)	2.30	10.6	22	10.43	31.9	N/A	4.80	N/A	
Maui									
Kahului	0.18	2.7	7	1.03	9.7	4.23	0.57	1.12	
Hana	1.16	9.5	12	2.36	25.8	27.54	3.50	2.32	
Kihei	0.00	2.1	0	0.73	8.4	2.07	0.03	0.18	
Lahainaluna	0.42	2.4	18	0.64	9.5	1.28	0.00	0.0	0
Wailuku	0.71	3.6	20	2.27	12.6	9.99	2.27	1.40	
Island of Hawaii									
Hilo	3.67	13.9	26	6.21	34.1	18.48	4.79	0.05	
Pahala	0.32	6.3	5	0.54	20.1	8.20	0.96	0.5	2
Honaunau									
(Captain Cook)	0.42	5.1	8	1.46	12.0	2.66	2.00	0.01	
Kamuela	2.57	7.9	33	7.58	20.5	3.31	1.35	0.0	9
Laupahoehoe	6.02	19.5	31	9.46	46.2	N/A	4.77	0.01	
Molokai									
Kaunakakai	0.38	1.8	21	2.51	7.7	0.00	0.00	0.40	

Commercial flower growers on the Island of Hawaii continued to suffer under drought conditions. Many farmers were conserving what they had already planted and were not putting new plants in the ground. Federal officials had estimated production losses of about 20 percent from December through mid-February. Growers fear the losses will climb, costing them millions of dollars

The drought reached a critical level in parts of Maui. The flow in the Wailoa ditch dropped to 21 million gallons. During average, wetter winter months, the level may range from 100 to 150 million gallons per day. Maui County Mayor Linda Lingle asked Governor Ben Cayetano to declare a drought emergency in Upcountry Maui. If an emergency was declared, the Maui Department of Water Supply would then seek to suspend environmental constraints that were keeping three East Maui wells out of use. Upcountry Maui residents were under a mandatory 10 percent water consumption restriction. Officials then asked the residents to voluntarily cut back usage by 25 percent, except for farmers.

On the other hand, emergency water restrictions were lifted for a large part of the Puna District on the Island of Hawaii after a disabled well was repaired and brought back on line. A water conservation notice asking residents to reduce water use by 10 percent remained in place, but the mandatory restrictions were removed.

HIZ001>006

Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast

09 1200HST 0 0 High Surf
10 1800HST

Storm low far northwest of the Hawaiian Islands generated surf of 8 to 12 feet on north and northwest facing shores on all the islands.

Honolulu County

Pearl City

11 1200HST 0 0 Wild/Forest Fire
16 1800HST

No structures were damaged as a brush fire that burned more than 1200 acres came close to Waiawa Correctional Center and Pearl City Industrial Park, forced a brief closure of H-2 freeway lanes, and blanketed residents of Waipio Gentry subdivision with a pall of smoke and ash. Much of the area scorched was steep slope, out of the reach of firefighters on foot. The estimated cost of Army helicopter flight hours to help douse the fire from above was \$75,000.

HIZ001>006

Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast

11 2000HST 0 0 High Surf
12 1300HST

Intense storm low far north/northwest of the state produced surf of 8 to 10 feet on west facing shores of all the islands.



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HAWAII

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
11 **2000HST** **0** **0** **High Surf**
13 **0600HST**
 Intense storm low far north/northwest of the state caused surf of 10 to 15 feet on north and northwest facing shores on all the islands

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
13 **1200HST** **0** **0** **High Surf**
15 **0600HST**
 Intense storm low far north/northwest of the state produced surf of 10 to 15 feet on west facing shores on all the islands

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
13 **1200HST** **0** **0** **High Surf**
16 **0200HST**
 Intense storm low far north/northwest of the Hawaiian Islands generated surf of 12 to 18 feet on all north and northwest facing shores of all the islands.

Hawaii County
Pahoa **14** **1500HST** **0** **0** **Wild/Forest Fire**
17 **0900HST**
 A brush fire that seared more than 150 acres threatened the Leilani Estates subdivision south of Pahoa

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
17 **1200HST** **0** **0** **High Surf**
18 **0400HST**
 Storm low far northwest of the state caused surf of 6 to 12 feet on north and northwest facing shores of all the islands.

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
19 **1000HST** **0** **0** **High Surf**
20 **0100HST**
 Storm low far northwest of the islands produced surf of 8 to 10 feet on north and northwest facing shores of all the isles.

HIZ004 **Kauai Mountains**
21 **0600HST** **0** **0** **High Wind (61)**
23 **0900HST**
 West to northwest winds of 50 to 70 mph occurred near the summits of Mauna Kea and Mauna Loa.

HIZ001>006 **Niihau - Kauai Windward - Kauai Leeward - Kauai Mountains - Oahu South Shore - Waianae Coast**
22 **1100HST** **0** **0** **High Surf**
24 **1800HST**
 Stationary storm low far northeast of the state caused surf of 12 to 18 feet on north and northeast facing shores of all the islands.