



# National Weather Service

## Storm Data and Unusual Weather Phenomena



September 1999

| Location | Date | Time<br>Local/<br>Standard | Path<br>Length<br>(Miles) | Path<br>Width<br>(Yards) | Number of<br>Persons<br>Killed | Number of<br>Persons<br>Injured | Estimated<br>Damage<br>Property | Estimated<br>Damage<br>Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

### HAWAII

HIZ003-007>008

**Kauai Leeward - Oahu North Shore - Oahu Koolau**

|           |                |          |          |                |
|-----------|----------------|----------|----------|----------------|
| <b>01</b> | <b>0000HST</b> | <b>0</b> | <b>0</b> | <b>Drought</b> |
| <b>30</b> | <b>2359HST</b> |          |          |                |

September marked another month of continuous trade winds across the Hawaiian Islands. Rain bands embedded within the trade flow provided light to moderate rainfall almost daily over windward areas of the state. A few areas along the leeward sides of the islands of Maui and Hawaii received sufficient rainfall to push September's totals to close to normal. However, year-to-date deficits in these areas remained substantial.

#### Maui County

A few areas of Upcountry Maui did see some drought relief during September, though not nearly enough to make up for almost two years of below average rainfall. The gage at Ulupalakua, located in one of the areas hardest hit by the drought, saw 2.19 inches in September (81 percent of average), of which 1.41 inches fell in a six-hour period during the afternoon of 2 September. These showers did not reach the Kula gage, which remained dry the entire month (0.19 of an inch, 10 percent of average). Central valley sites were also very dry, with totals less than 20 percent of average at Wailuku, Waikapu Country Club, and Kahului Airport. Due to its exposure to trade wind showers, the gage at Hana was the highest rainfall total (3.04 inches, 54 percent of average) for Maui County.

#### Island of Hawaii

Trade wind showers brought September rainfall totals of four to eight inches for the gages in the Hamakua, Hilo, and Puna sections of the island. These totals were between 50 to 90 percent of average. Afternoon showers along the slopes of the North Kona District helped produce near average totals at Waiaha (6.43 inches, 104 percent of average) and Kainaliu Upper (7.54 inches, 94 percent of average). For the gage at Kainaliu Upper, 7.54 inches was the highest total received since September 1997 (8.04 inches). Dry conditions persisted over portions of the South Kohala and Kau Districts. The gage at Kamakoa saw only 0.09 of an inch (22 percent of average). For the year-to-date numbers, Kamakoa's total was only 1.71 inches, or 14 percent of average. Both Kau sites, Kapapala and Pahala, remained very dry with totals on 22 and 34 percent of average.

The following list contains rainfall statistics for selected locations from around the state. The first column is the observed rainfall for September. The second column is the 30-year average for that location, while the third column lists the percent of average rainfall for September. The fourth and fifth columns are the year-to-date total and the year-to-date percent of average, respectively

|                         | Sep 99 | Avg. | %Avg. | YTD    | YTD<br>%Avg. |
|-------------------------|--------|------|-------|--------|--------------|
| <b>Maui</b>             |        |      |       |        |              |
| Kahului Airport         | 0.03   | 0.4  | 8     | 6.92   | 50           |
| Hana                    | 3.04   | 5.4  | 56    | N/A    | N/ A         |
| Haiku                   | 1.05   | 3.0  | 35    | N/A    | N/A          |
| Kihei                   | 0.23   | 0.2  | 115   | 2.54   | 24           |
| Lahainaluna             | 0.13   | 0.6  | 22    | 4.29   | 32           |
| Wailuku                 | 0.10   | 0.6  | 17    | 7.92   | 41           |
| <b>Island of Hawaii</b> |        |      |       |        |              |
| Hilo Airport            | 5.65   | 8.5  | 66    | 87.82  | 94           |
| Pahala                  | 1.14   | 3.4  | 34    | 13.58  | 34           |
| Honaunau                | 6.22   | 7.2  | 86    | 21.62  | 4 1          |
| Kamuela (Upper)         | 1.74   | 2.3  | 76    | 44.88  | 10 4         |
| Glenwood                | 7.97   | 8.9  | 90    | 148.81 | 124          |
| Laupahoehoe             | 4.36   | 6.9  | 63    | 76.33  | 68           |

Rainfall had eased the drought in some parts of Maui and the Big Island. However, some macadamia nut producers continued to feel its effects. Sotero Agoot, manager of the Kona Pacific Farmers Cooperative in Napoopoo, said the drought had contributed to a macadamia nut output decline of about 10 percent for 1999. Also, drought conditions were responsible for increasing fire danger on the Island of Hawaii. By the end of September, officials had decided to close part of the Mauna Kea Forest Reserve and the Kahoe Game Management Area because lack of rainfall had dried vegetation to hazardous levels. Portions of the forest reserve below 10,000 feet elevation that lie between Kemole Gulch on the northwest slope and Waikahalulu Gulch in the south, all of the Kaohe Game Management Area, and nearby roads were to be closed.

