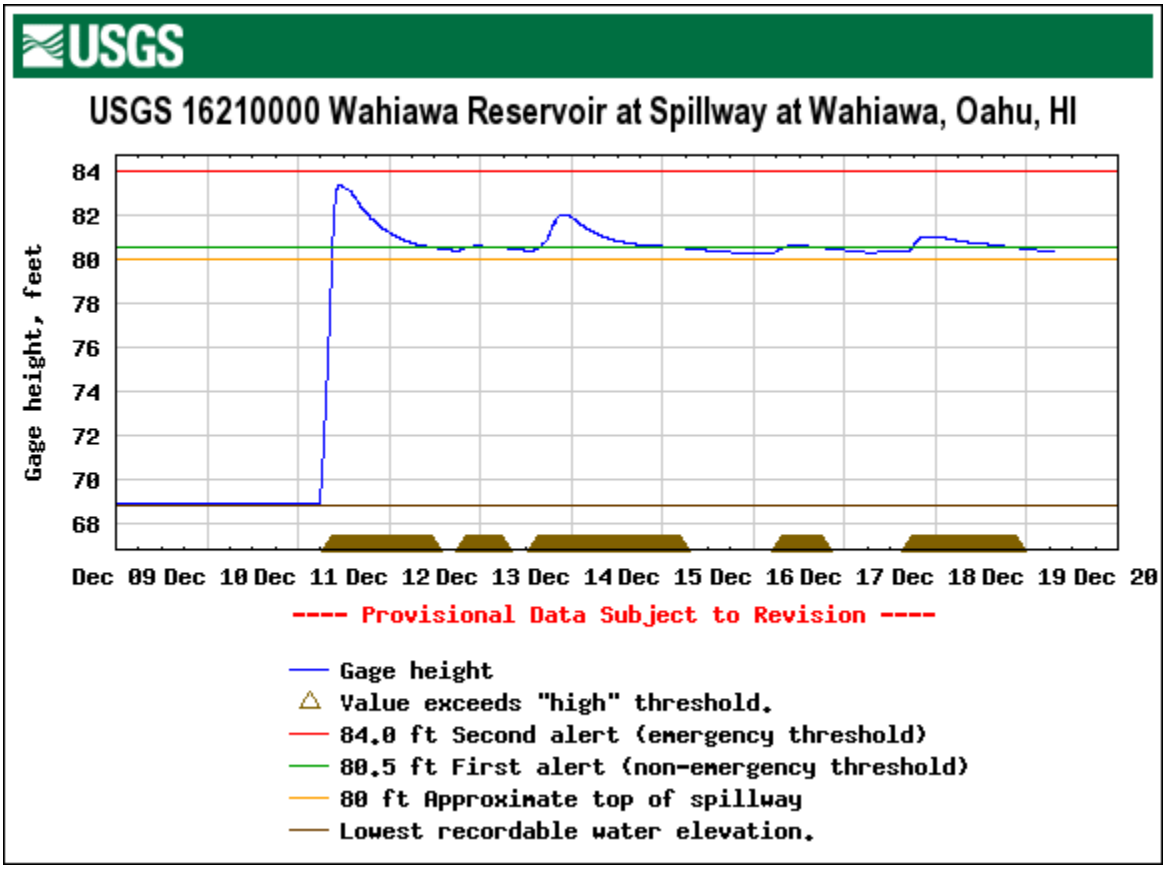
## Peak Flow Data for Selected Streams on Oahu and Kauai, December 2008

Heavy rainfall occurred on the islands of Oahu and Kauai during the period December 10-14, 2008. On Oahu, the central part of the Koolau Mountains received over 15 inches of rain, and much of the Waianae Mountains received over 10 inches of rain. On Kauai numerous stations recorded in excess of 10 inches of rain, with the gage at Mt. Waialeale recording almost 25 inches. Click here for a National Weather Service (NWS) summary of rainfall totals and a meteorological description of the event.

In central Oahu, water flowed rapidly from the Koolau Mountains into Lake Wilson (Wahiawa Reservoir). The water level in the reservoir rose 14 feet within a few hours. Data from the USGS gage on the reservoir, in addition to other gages operated by USGS and NWS, were used by State and County agencies to coordinate emergency response.




Flooding was reported in several areas of central, windward, and north shore Oahu, and southwestern Kauai. Provisional gage-height data collected during the storm indicate that several streams on Oahu were flowing at rates near or above the peak of record for several USGS stream gages; actual peak gage-height and flow values will not be known until more detailed field surveys and hydrologic calculations are completed. The tables below provide provisional data for selected stream gages, along with related historic peak information. These tables will be updated as more data become available. Maps showing the location of the gages are also provided below.

The flow of water in a stream depends on several factors. Gage height cannot be used to directly compare flows between different gages or different storms.

**Table 1: Provisional peak gage-height and flow data for selected stream gages on Oahu, December 2008**

[Values in **bold** are new historic peak of record; Ht., height; ft, feet; yr, year; cfs, cubic feet per second; TBD, to be determined]

| Station Number | Station Name | Dec. 11, 2008 Peak | | | Historic Peak | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Gage Ht. (ft) | Flow (cfs) | Recurence Interval (yr) | Gage Ht. (ft) | Date | Flow (cfs) | Date | Years of Record |
| | Central Oahu, draining northward | | | | | | | | |
| 16200000 | NF Kaukonahua Str abv RB, nr Wahiawa | 14.10 | **6,290** | 50 - 100 | 13.20 | 10/28/1981 | 5,490 | 1/1/1933 | 83 |
| 16208000 | SF Kaukonahua Str at E pump, nr Wahiawa | 12.60 | **6,530** | 50 - 100 | 11.33 | 4/15/1963 | 5,460 | 4/15/1963 | 49 |
| 16345000 | Opaeula Str nr Wahiawa | 14.53 | 5,200 | 25 - 50 | 13.66 | 3/8/2006 | 5,540 | 7/17/1974 | 49 |
| | Central Oahu, draining southward | | | | | | | | |
| 16212800 | Kipapa Str nr Wahiawa | 10.03 | 2,930 | 5 | 12.67 | 3/21/1991 | 6,370 | 3/21/1991 | 48 |
| 16213000 | Waikele Str at Waipahu | 19.70 | **22,500** | 100 | 14.82 | 11/28/1954 | 13,600 | 11/28/1954 | 55 |
| | Leeward Oahu | | | | | | | | |
| 16211600 | Makaha Str nr Makaha | 6.00 | 1,020 | 10 - 25 | 9.54 | 11/14/1996 | 2,680 | 11/14/1996 | 48 |
| | Windward Oahu | | | | | | | | |
| 16304200 | Kaluanui Str nr Punaluu | 13.13 | 2,870 | 50 | 11.90 | 1/6/1982 | 2,390 | 1/6/1982 | 41 |
| 16303000 | Punaluu Str nr Punaluu | 7.41 | 2,370 | 2 - 5 | 8.87 | 2/12/1994 | 6,900 | 3/20/1991 | 54 |
| 16296500 | Kahana Str at alt 30 ft nr Kahana | 9.55 | 7,870 | 100 | 9.39 | 5/6/2002 | 7,580 | 5/6/2002 | 48 |
| 16294900 | Waikane Str at alt 75 ft at Waikane | 10.76 | 3,940 | 2 - 5 | 10.76 | 2/4/1965 | 8,800 | 2/4/1965 | 48 |
| 16284200 | Waihee Str nr Kahaluu | 5.79 | 506 | 2 | 7.93 | 3/21/1991 | 1,530 | 3/21/1991 | 32 |
| 16283200 | Kahaluu Str nr Ahuimanu | 3.40 | 203 | < 2 | 6.05 | 9/18/1994 | 932 | 3/19/2006 | 24 |
| 16275000 | Haiku Str nr Heeia | 3.36 | 407 | < 2 | 7.94 | 5/2/1965 | 5,740 | 5/2/1965 | 67 |
| | North Shore Oahu | | | | | | | | |
| 16310501 | Malaekahana Str at alt 30 ft nr Kahuku | 18.03 | 2,460 | 5 - 10 | 14.45 | 4/2/2006 | 4,640 | 4/15/1963 | 49 |
| 16330000 | Kamananui Str at Maunawai | 10.86 | 6,320 | 10 | 15.84 | 11/20/1990 | 16,800 | 11/20/1990 | 49 |
| | Honolulu | | | | | | | | |
| 16226200 | N. Halawa Str nr Honolulu | 10.45 | 783 | < 2 | 12.35 | 3/19/2006 | 2,050 | 3/19/2006 | 24 |
| 16229000 | Kalihi Str nr Honolulu | 7.07 | 610 | < 2 | 13.90 | 1/16/1921 | 12,400 | 11/18/1930 | 91 |
| 16240500 | Waiakeakua Str at Honolulu | 3.88 | 788 | 2 | 10.40 | 1/16/1921 | 3,890 | 2/4/1965 | 89 |

Updated on: 1/27/2009

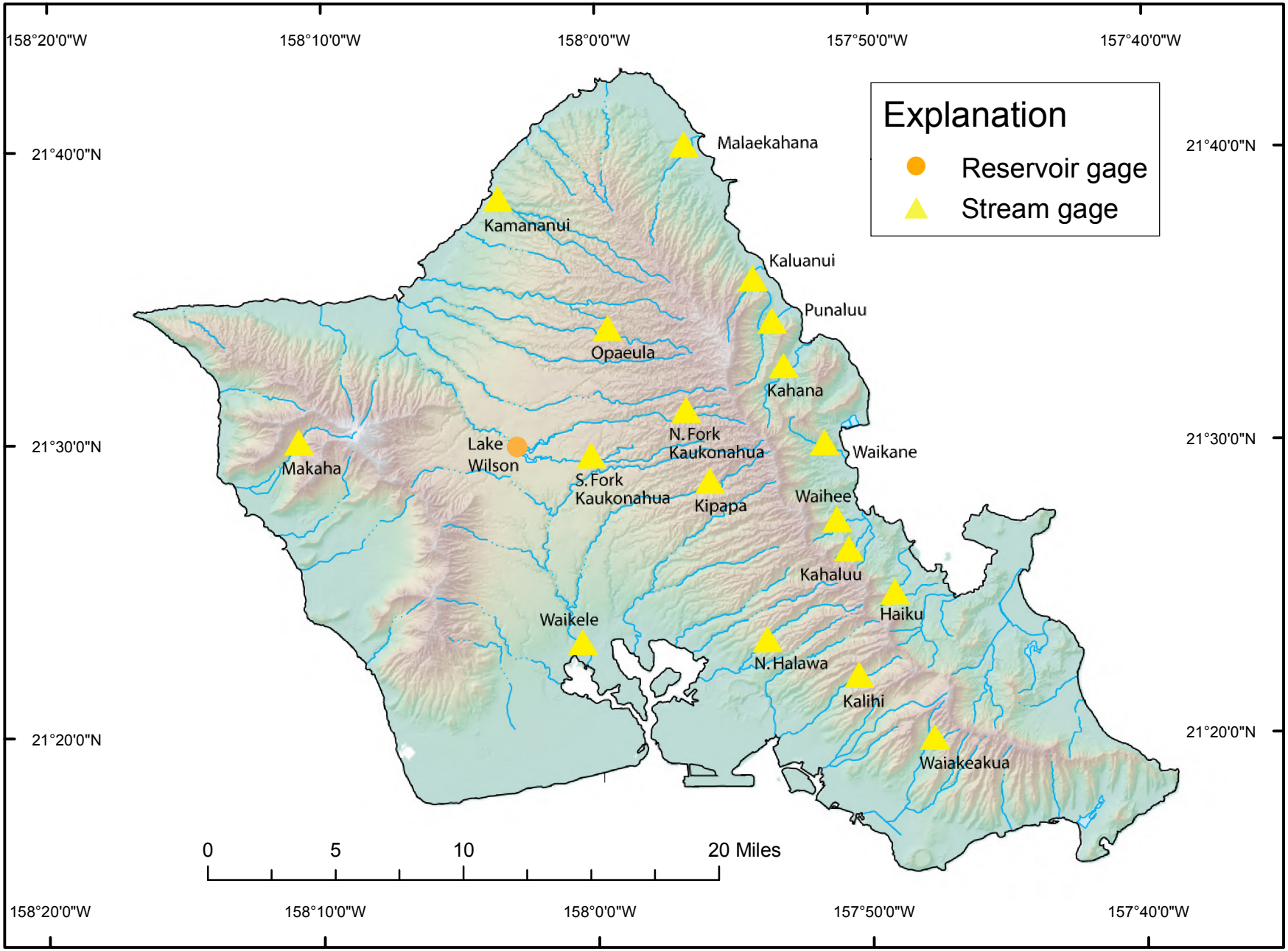
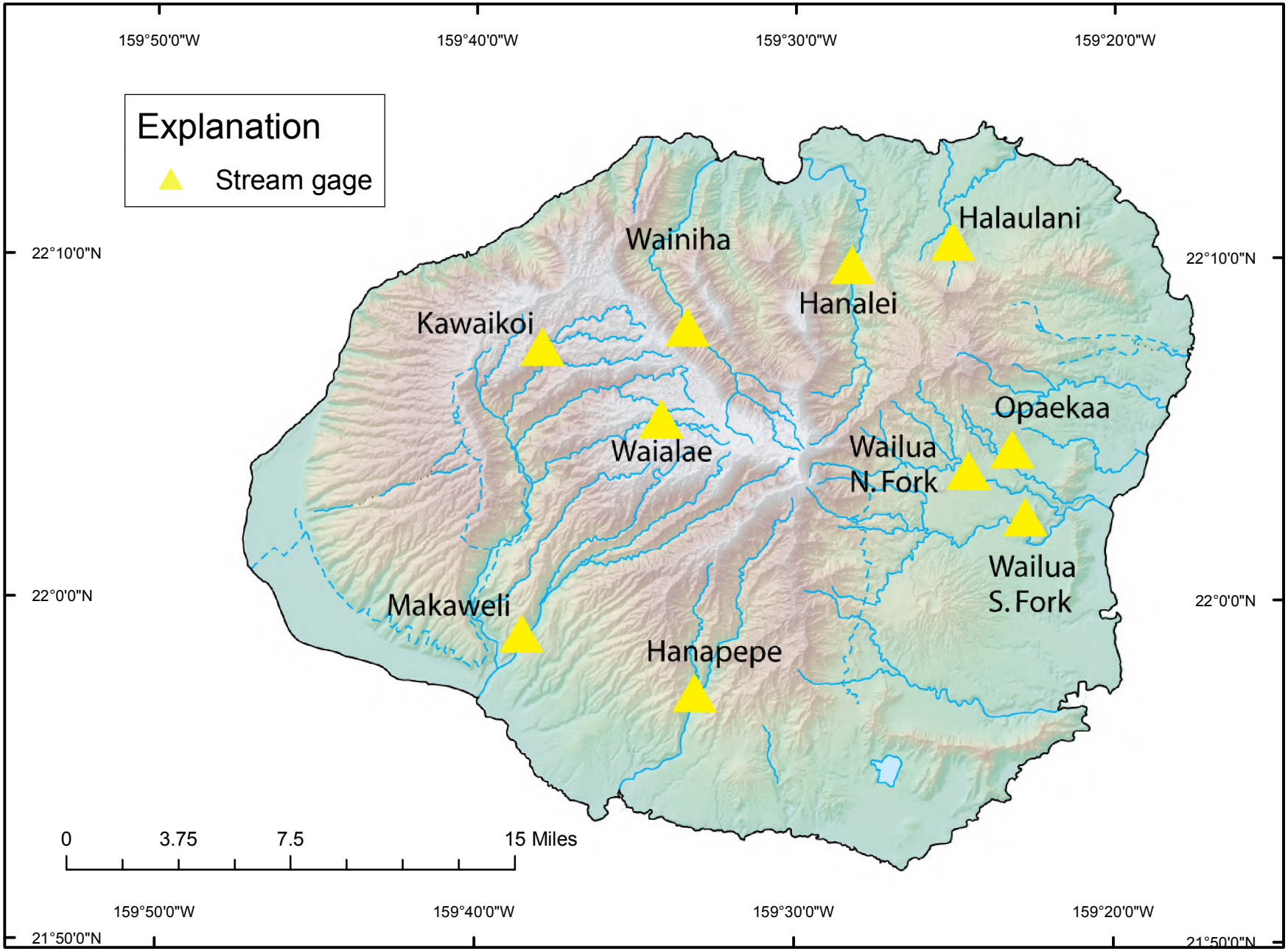

158°20'0"W
158°10'0"W
158°0'0"W
157°50'0"W
157°40'0"W
21°40'0"N
21°30'0"N
21°20'0"N
Explanation
Reservoir gage
Stream gage
Malaekahana
Kamananui
Kaluanui
Punaluu
Opaeula
Kahana
N. Fork Kaukonahua
Waikane
Lake Wilson
Makaha
S. Fork Kaukonahua
Kipapa
Waihee
Kahaluu
Haiku
Waikele
N. Halawa
Kalihi
Waiakeakua
0
5
10
20 Miles

**Table 2: Provisional peak flow data for selected stream gages on Kauai, December 2008**

[ft, feet; yr, year; cfs, cubic feet per second]

| Station Number | Station Name | December Peak | | | Historic Peak | | |
|---|---|---|---|---|---|---|---|
| | | Flow (cfs) | Date | Recurence Interval (yr) | Flow (cfs) | Date | Years of Record |
| | Leeward-draining Streams | | | | | | |
| 16010000 | Kawaikoi Stream nr Waimea | 4,470 | 12/13/08 09:15 | 2 - 5 | 11,300 | 01/13/67 | 91 |
| 16019000 | Waialae Str at alt 3,820 ft. nr Waimea | 2,140 | 12/13/08 09:15 | 2 - 5 | 4,530 | 01/16/21 | 64 |
| 16036000 | Makaweli River nr Waimea | 15,600 | 12/13/08 09:15 | 5 - 10 | 26,000 | 01/31/75 | 63 |
| 16049000 | Hanapepe Riv blw Manuahi Str nr Eleele | 8,600 | 12/13/08 09:40 | 2 - 5 | 39,000 | 04/15/63 | 83 |
| | Windward-draining Streams | | | | | | |
| 16060000 | SF Wailua river nr Lihue | 12,000 | 12/13/08 04:15 | 2 | 68,800 | 04/15/63 | 94 |
| 16068000 | EB of NF Wailua River nr Lihue | 4,320 | 12/13/08 03:50 | 2 | 18,400 | 11/12/55 | 92 |
| 16071500 | Left Branch Opaekaa Str nr Kapaa | 254 | 12/13/08 04:30 | 2 - 5 | 1,060 | 12/14/91 | 47 |
| 16097500 | Halaulani Str at alt 400 ft nr Kilauea | 826 | 12/13/08 03:30 | 2 | 4,140 | 02/13/94 | 50 |
| | Northward-draining Streams | | | | | | |
| 16103000 | Hanalei River nr Hanalei | 10,900 | 12/13/08 08:45 | 2 | 44,600 | 11/03/95 | 46 |
| 16108000 | Wainiha River nr Hanalei | 2,620 | 12/13/08 14:15 | 1 - 2 | 20,200 | 04/19/74 | 54 |

Updated on: 12/31/2008


Explanation
Stream gage
159°50'0"W
159°40'0"W
159°30'0"W
159°20'0"W
22°10'0"N
22°0'0"N
21°50'0"N
Wainiha
Halaulani
Hanalei
Kawaikoi
Opaekaa
Waialae
Wailua
N. Fork
Wailua
S. Fork
Makaweli
Hanapepe
0
3.75
7.5
15 Miles