Recent Kilauea Status Reports, Updates, and Information Releases

Kilauea Daily Update issued Feb 28, 2008 09:38 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

**Activity Summary for last 24 hours:** Two lava flows continued to advance through Royal Gardens subdivision; one has reached the base of the uncovered subdivision. A second lava flow remained active between the rootless shields and Kalalua Cone. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

**Hazard Summary:** Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor`s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahauale`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chair/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).
**Last 24 hours at 7/21 eruption site:** On this morning's overflight, HVO geologists reported the lava flow advancing down Prince Avenue has reached the base of Royal Gardens kipuka and the Campout flow from early 2007. The flow advancing down Royal Avenue is approximately 0.5 miles from the base of the subdivision. Three houses are known destroyed.

The lava flow between the rootless shield complex and Kalalua Cone continued to be active but does not appear to be advancing in any particular direction.

**Last 24 hours at Pu`u `O`o:** No incandescence was observed overnight. The Pu`u `O`o tiltmeter again recorded gentle deflation from a source to the southeast. GPS receivers recorded continued contraction of the cone. Seismic tremor levels returned to low values.

**Last 24 hours at Kilauea summit:** The summit tiltmeter network recorded possible deflation, but it is not a clear signal. GPS receivers across the caldera have recorded no more than 1 cm of contraction since early February. Seismic tremor levels were still about 25% low and variable since the abrupt drop on 2/26. One small earthquake was located beneath Kilauea caldera.

Sulfur dioxide concentrations peaked 1,800 ppb yesterday at Jaggar museum. Department of Health SO2 concentration data for east side locations are not available this morning.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 850 tonnes/day on Feb. 21 (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. The resulting SO2 concentrations exceed 1,000 ppb (1 ppm) in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone during trade winds). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

Carbon dioxide concentrations yesterday lingered around 2.5% in our instrument vault in the floor of Kilauea caldera. Normal non-volcanic background concentrations are 0.036%. Carbon dioxide emission rates at Kilauea summit have been elevated since 2005.

**Definitions of terms used in the update:**

rootless shields: Shield vents are normally built directly over a lava-supplying fissure, as is the case for the TEB shield. Rootless shield vents are not built directly over a lava-supplying fissure and are, instead, fed horizontally from a fissure. Rootless shields have been built over lava tubes in the last few years.

perched ponds or channels: A lava pond or channel becomes perched above the surrounding terrain when repeated overflows build up their edges. The perching continues as long as the overflows continue. The channel developed by the July 21, 2007 eruption perched itself more than 100 feet above the pre-eruption ground surface.

gas emission rates: usually in metric tonnes (= 1,000 kilograms)/day if measured at HVO, a gas emission rate is the rate at which gas is released by a volcanic vent. Typical background SO2 emission rates for Kilauea are 150-200 tonnes/day from sources in Halema`uma`u crater and 1,500-3,000 tonnes/day from Pu`u `O`o vent. Once the gas is released into the air, the hazard it poses to living things is directly related to its concentration. Higher concentrations are found downwind of sources so changes in wind direction and speed can bring gases at hazardous concentrations into different areas.

LP earthquakes: Most volcanic earthquakes that occur in Hawai`i are short-period (SP) in nature, meaning that the shaking starts abruptly and contains relatively high frequency components; these
quakes are usually associated with subsurface rock failure (breakage). Long-period (LP) earthquakes have lower frequency energy and emergent beginnings, meaning that their signals start with small amplitude and become stronger. LP earthquakes are usually associated with subsurface fluid movement.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

Kilauea Daily Update issued Feb 27, 2008 07:26 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

Activity Summary for last 24 hours: Two lava flows continued to advance through Royal Gardens subdivision. A second lava flow remained active between the rootless shields and Kalalua Cone. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

Hazard Summary: Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitors Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahaule`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chain/pio/HtmlINR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).

Last 24 hours at 7/21 eruption site: HVO geologists reported two lava fingers continued
downslope through the Royal Gardens. The east finger advanced along Royal Avenue to the 880 ft
elevation by early afternoon yesterday. The front of the west finger, advancing near Prince Avenue,
had stalled at the 860 ft elevation but the flow had produced another front at the 1020 ft
elevation.

The lava flow between the rootless shield complex and Kalalua Cone continued to be active but
does not appear to be advancing in any single direction.

Last 24 hours at Pu`u `O`o: Brief incandescence was observed overnight. The Pu`u `O`o
tiltmeter recorded gentle deflation from a source to the east. GPS receivers recorded continued
contraction of the cone. Seismic tremor levels were still slightly elevated near the TEB vent and
fissure D but at low values.

Last 24 hours at Kilauea summit: The summit tiltmeter network recorded no significant
changes. GPS receivers across the caldera have not recorded significant long-term change (no
contraction or extension) since early February. Seismic tremor levels were still about 25% low
since the abrupt drop yesterday morning. Four small earthquakes were located beneath Kilauea
caldera and the upper east rift zone and two were located on south flank faults.

Sulfur dioxide concentrations peaked a few times between 800 and 1,200 ppb yesterday at Jaggar
museum and Kilauea Visitors Center. Concentrations were also elevated in Mountain View with a
peak of 500 ppb just after midnight (data from yesterday were not available from the State
department of Health this morning).

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times
background values since early January. The emission rate was about 850 tonnes/day on Feb. 21
(the last time we had sufficiently strong trade winds to make an emission rate measurement),
compared to a background rate of between 150-200 tonnes/day. The resulting SO2 concentrations
exceed 1,000 ppb (1 ppm) in areas downwind of Halema`uma`u crater (almost half of Crater Rim
Drive between Halema`uma`u parking lot and the southwest rift zone during trade winds). SO2
concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking
lot and the south caldera pullout.

Carbon dioxide concentrations yesterday lingered around 2.5% in our instrument vault in the floor
of Kilauea caldera. Normal non-volcanic background concentrations are 0.036%. Carbon dioxide
emission rates at Kilauea summit have been elevated since 2005.

Definitions of terms used in the update:

rootless shields: Shield vents are normally built directly over a lava-supplying fissure, as is the
case for the TEB shield. Rootless shield vents are not built directly over a lava-supplying fissure
and are, instead, fed horizontally from a fissure. Rootless shields have been built over lava tubes in
the last few years.

perched ponds or channels: A lava pond or channel becomes perched above the surrounding
terrain when repeated overflows build up their edges. The perching continues as long as the
overflows continue. The channel developed by the July 21, 2007 eruption perched itself more than
100 feet above the pre-eruption ground surface.

gas emission rates: usually in metric tonnes (= 1,000 kilograms)/day if measured at HVO, a gas
emission rate is the rate at which gas is released by a volcanic vent. Typical background SO2
emission rates for Kilauea are 150-200 tonnes/day from sources in Halema`uma`u crater and
1,500-3,000 tonnes/day from Pu`u `O`o vent. Once the gas is released into the air, the hazard it
poses to living things is directly related to its concentration. Higher concentrations are found
downwind of sources so changes in wind direction and speed can bring gases at hazardous
concentrations into different areas.
LP earthquakes: Most volcanic earthquakes that occur in Hawai`i are short-period (SP) in nature, meaning that the shaking starts abruptly and contains relatively high frequency components; these quakes are usually associated with subsurface rock failure (breakage). Long-period (LP) earthquakes have lower frequency energy and emergent beginnings, meaning that their signals start with small amplitude and become stronger. LP earthquakes are usually associated with subsurface fluid movement.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

Kilauea Daily Update issued Feb 26, 2008 09:17 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

**Activity Summary for last 24 hours:** Two lava flows were advancing seaward through Royal Gardens subdivision. A second lava flow remained active between the rootless shields and Kalalua Cone. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

**Hazard Summary:** Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor\'s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahaule`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chair/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).
**Last 24 hours at 7/21 eruption site:** Yesterday's Chopper 1 overflight plus subsequent reports located two lava flows advancing through Royal Gardens - one along Royal Avenue and the other in the vicinity of Prince Avenue (west of Royal). As of this morning, the Royal finger may be approaching Plumeria St. at about the 900' elevation.

The lava flow between the rootless shield complex and Kalalua Cone was sporadically active early this morning although views are largely blocked by fume.

**Last 24 hours at Pu`u `O`o:** No incandescence was observed overnight but a few glimpses of the sunken crater floor could be seen during the day. The Pu`u `O`o tiltmeter recorded no significant changes in the past week. GPS receivers recorded an average contraction of 2 mm/month across the cone.

**Last 24 hours at Kilauea summit:** The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels dropped about 25% at 5:20 this morning; the drop was preceded by a handful of LP earthquakes. Four small, deep earthquakes were located beneath the southwest rift zone, another four small quakes were located beneath Kilauea caldera and the area immediately north, and two were located on south flank faults.

Sulfur dioxide concentrations peaked at 3,500 ppb yesterday morning at Jaggar museum and has already reached 500 ppb at Jaggar Museum and KVC this morning.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 850 tonnes/day on Feb. 21 (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. The resulting SO2 concentrations exceed 1,000 ppb (1 ppm) in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone during trade winds). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

Carbon dioxide concentrations yesterday lingered around between 2% and 3% in our instrument vault in the floor of Kilauea caldera. Normal non-volcanic background concentrations are 0.036%. Carbon dioxide emission rates at Kilauea summit have been elevated since 2005.

**Definitions of terms used in the update:**

- **rootless shields:** Shield vents are normally built directly over a lava-supplying fissure, as is the case for the TEB shield. Rootless shield vents are not built directly over a lava-supplying fissure and are, instead, fed horizontally from a fissure. Rootless shields have been built over lava tubes in the last few years.

- **perched ponds or channels:** A lava pond or channel becomes perched above the surrounding terrain when repeated overflows build up their edges. The perching continues as long as the overflows continue. The channel developed by the July 21, 2007 eruption perched itself more than 100 feet above the pre-eruption ground surface.

- **gas emission rates:** usually in metric tonnes (= 1,000 kilograms)/day if measured at HVO, a gas emission rate is the rate at which gas is released by a volcanic vent. Typical background SO2 emission rates for Kilauea are 150-200 tonnes/day from sources in Halema`uma`u crater and 1,500-3,000 tonnes/day from Pu`u `O`o vent. Once the gas is released into the air, the hazard it poses to living things is directly related to its concentration. Higher concentrations are found downwind of sources so changes in wind direction and speed can bring gases at hazardous concentrations into different areas.

LP earthquakes: Most volcanic earthquakes that occur in Hawai`i are short-period (SP) in nature, meaning that the events start abruptly and contain relatively high frequencies; these quakes are usually associated with subsurface rock failure (breakage). Long-period (LP) earthquakes have lower frequency energy and emergent beginnings, meaning that their signals start with small amplitude and become stronger. LP earthquakes are usually associated with subsurface fluid movement.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

Kilauea Daily Update issued Feb 25, 2008 08:28 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE
This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

Activity Summary for last 24 hours: A lava flow apparently entered Royal Gardens subdivision yesterday. A second lava flow remains active between the rootless shields and Kalalua Cone. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

Hazard Summary: Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor\\'s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahaule`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chain/pio/HtmlINR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Hawai`i County Civil Defense has been notified and is taking
appropriate measures (www.lavainfo.us).

**Last 24 hours at 7/21 eruption site:** Lava flows continue to be active to the north of the Royal Gardens subdivision. Early morning reports indicate that the flows have entered the subdivision. A Hawai`i County Fire Department Overflight is planned for this morning.

The lava flow between the rootless shield complex and Kalalua Cone was active early this morning. In addition, lava flow activity could also be seen along the eastern edge of the southeast-directed flows.

**Last 24 hours at Pu`u `O`o:** No incandescence was observed overnight. The Pu`u `O`o tiltmeter recorded no significant changes in the past 6 days. GPS receivers continued to record contraction across the cone.

**Last 24 hours at Kilauea summit:** The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels are still elevated but at low values. Five small earthquakes were located beneath Halema`uma`u crater, the southwest rift zone, and on south flank faults.

Sulfur dioxide concentrations peaked at 3,500 ppb yesterday morning at the Kilauea Visitors Center and has already reached 1,500 ppb at Jaggar Museum this morning.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 850 tonnes/day on Feb. 21 (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. The resulting SO2 concentrations exceed 1,000 ppb (1 ppm) in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone during trade winds). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

Carbon dioxide concentrations yesterday lingered around 3.5% in our instrument vault in the floor of Kilauea caldera. Normal non-volcanic background concentrations are 0.036%. Carbon dioxide emission rates at Kilauea summit have been elevated since 2005.

See earlier updates for definitions of terms used in this update.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

**Kilauea Daily Update issued Feb 24, 2008 08:03 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE**

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):
**Activity Summary for last 24 hours:** A lava flow advanced near or has entered Royal Gardens subdivision. A second lava flow remains active between the rootless shields and Kalalua Cone. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

**Hazard Summary:** Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor\'s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahauale`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chain/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).

**Last 24 hours at 7/21 eruption site:** Webcam views showed that lava is again near the northern boundary or has entered Royal Gardens subdivision. The eastward lava flow that reached Kalalua Cone kipuka late last week is still active but it is not clear whether it is advancing or remaining active between the rootless shields and Kalalua Cone.

**Last 24 hours at Pu`u `O`o:** No incandescence was observed overnight. The Pu`u `O`o tiltmeter recorded no significant changes in the past 5 days. GPS receivers continued to record contraction across the cone.

**Last 24 hours at Kilauea summit:** The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels fluctuated since the abrupt drop Thursday; the levels are still elevated but at low values. Two small earthquakes were located on south flank faults.

Sulfur dioxide concentrations peaked between 1,000 and 1,500 ppb yesterday morning at the Jaggar Museum.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 850 tonnes/day on Feb. 21 (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. The resulting SO2 concentrations exceed 1,000 ppb (1 ppm) in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone during trade winds). SO2
concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

See earlier updates for definitions of terms used in this update.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

Kilauea Daily Update issued Feb 23, 2008 08:47 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

Activity Summary for last 24 hours: The lava flow that entered Royal Gardens stalled but remained active 540 m (1770 ft) north of the subdivision. A second lava flow advanced eastward from the rootless shield complex along the western and southern edges of the Kalalua Cone kipuka. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

Hazard Summary: Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor\'s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahauale`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chair/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).

Last 24 hours at 7/21 eruption site: Yesterday’s overflight found the flow that had entered Royal Gardens earlier in the week had stalled but was still somewhat active 540 m (1770 ft) north of the subdivision. Narrow pahoehoe fingers had expanded the boundary of this southeast TEB flow about 650 m (2130 ft) eastward.

A second TEB lava flow advanced eastward enveloping the western edge of the Kalalua Cone kipuka and continuing around its southern edge. The flow advanced mostly over older Kupaianaha lava flows and re-occupied a short section of old lava tube before coming back to the surface.

Last 24 hours at Pu`u `O`o: No incandescence was observed overnight for the first time in several days. The Pu`u `O`o tiltmeter recorded no significant changes. GPS receivers continued to record contraction across the cone.

Last 24 hours at Kilauea summit: The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels fluctuated since the abrupt drop Thursday; the levels are still elevated but at low values. One small earthquake occurred on south flank faults.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 570 tonnes/day last Thursday (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. SO2 concentrations exceed 1 ppm in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

See earlier updates for definitions of terms used in this update.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

Kilauea Daily Update issued Feb 22, 2008 09:09 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE
This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

Activity Summary for last 24 hours: The lava flow that entered Royal Gardens has stalled but remains active 500 m (1600ft) north of the subdivision. A second lava flow is advancing eastward from the rootless shield complex along the western and southern edges of the Kalalua Cone kipuka. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

Hazard Summary: Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.
The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halemaʻumaʻu, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halemaʻumaʻu overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor’s Center). The National Park Service has closed Crater Rim Drive through the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Sulfur dioxide emissions from Puʻu ʻOʻo are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahaualeʻa Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chair/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and release lava flows that advance that distance within a few days. Hawaiʻi County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).

Last 24 hours at 7/21 eruption site: Preliminary reports from this morning's overflight are that the flow that entered Royal Gardens has stalled but is still active 500 m (1600 ft) north of the subdivision. In addition, a significant lava flow is advancing eastward from the rootless shield complex along the western and southern boundaries of the Kalalua Cone kipuka and has extended nearly to Puʻu Kiaʻi.

Last 24 hours at Puʻu ʻOʻo: Diffuse incandescence was again observed through fume in the crater overnight. The Puʻu ʻOʻo tiltmeter recorded slight inflation from a source to the southeast. GPS receivers continued to record contraction across the cone.

Last 24 hours at Kilauea summit: The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels were at low-to-moderate values, which is several times background level. At 1:40 pm yesterday, tremor values dropped abruptly but resumed previous elevated values at 00:45 this morning. Three small earthquakes occurred north of the summit caldera, two immediately east of Halemaʻumaʻu crater, and four on south flank faults.

Sulfur dioxide concentrations peaked at 2500 ppb (2.5 ppm) yesterday morning at Jaggar Museum and 1500 ppb (1.5 ppm) yesterday afternoon at Kilauea Visitors Center. Carbon dioxide concentrations were exceptionally high in our caldera floor vault through yesterday reaching maximum concentrations of 25,000 ppm (2.5%).

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 570 tonnes/day last Thursday (the last time we had sufficiently strong trade winds to make an emission rate measurement), compared to a background rate of between 150-200 tonnes/day. SO2 concentrations exceed 1 ppm in areas downwind of Halemaʻumaʻu crater (almost half of Crater Rim Drive between Halemaʻumaʻu parking lot and the southwest rift zone). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halemaʻumaʻu parking lot and the south caldera pullout.

See earlier updates for definitions of terms used in this update.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

---

**Kilauea Daily Update issued Feb 21, 2008 09:32 HST Volcano Alert Level WATCH - Aviation Color Code ORANGE**

**HAWAIIAN VOLCANO OBSERVATORY DAILY UPDATE**

**Thursday, February 21, 2008 09:32 HST (Thursday, February 21, 2008 19:32 UTC)**

**KILAUEA VOLCANO** (CAVW#1302-01-)

19.43°N 155.29°W, Summit Elevation 4009 ft (1222 m)

Volcano Alert Level: **WATCH**

Aviation Color Code: **ORANGE**

This report, in addition to maps, photos, and webcam images (available using the menu bar above), prepared by the Hawaiian Volcano Observatory (HVO):

Activity Summary for last 24 hours: A narrow, slow-moving pahoehoe lava flow entered the upper reaches of Royal Gardens subdivision yesterday. Seismic tremor levels and sulfur dioxide emission rates were elevated to several times background levels at Kilauea summit.

Hazard Summary: Three hazardous conditions exist currently on Kilauea volcano - potentially harmful sulfur dioxide concentrations at the summit, dangerous conditions around the Pu`u `O`o/July 21/November 21 vent area, and lava flow threat to the Royal Gardens subdivision.

The current increase in sulfur dioxide emission rates at the summit means that SO2 concentrations are likely to be at hazardous levels for visitor areas downwind of Halema`uma`u, especially during weak wind conditions or winds from the south. Most people are sensitive to sulfur dioxide at these levels. Children and individuals with asthma, chronic obstructive pulmonary disease (COPD), or other breathing problems should avoid areas in the south caldera: southwest rift zone, south caldera pullout, and the Halema`uma`u overlook parking lot. Stay informed about SO2 concentrations in continuously monitored areas (Jaggar Museum and Kilauea Visitor\'s Center). The National Park Service has closed all pullouts and parking areas in the south caldera (http://www.nps.gov/havo/closed_areas.htm).

Vent areas and lava channels are hazardous and conditions can change rapidly. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet into the air. Sulfur dioxide emissions from Pu`u `O`o are very high and result in hazardous concentrations downwind. Access to the 7/21 eruption site in the Kahauale`a Natural Area Reserve is closed (see http://www.state.hi.us/dlnr/chair/pio/HtmlNR/07-N076.htm). Wao Kele o Puna is also closed.

There continues to be a threat from lava flows to residents of Royal Gardens subdivision. As long as lava flows are active south of fissure D, the subdivision is within likely downslope flow paths. The rootless shields, which are now less than two miles from the subdivision, can collapse and

release lava flows that advance that distance within a few days. Hawai`i County Civil Defense has been notified and is taking appropriate measures (www.lavainfo.us).

Last 24 hours at 7/21 eruption site: An overflight yesterday afternoon observed a narrow, relatively slow-moving pahoehoe flow active in the upper reaches of Royal Gardens subdivision. The flow was 250 meters (yards) south of the northern boundary of the subdivision at 1:30pm yesterday, above Royal Avenue. Another small flow extended eastward from the rootless shields toward Kalalua. An overflight is planned for tomorrow morning.

Last 24 hours at Pu`u `O`o: Once again, diffuse incandescence was observed through fume in the crater overnight. The Pu`u `O`o tiltmeter recorded no significant change. GPS receivers continued to record contraction across the cone.

Last 24 hours at Kilauea summit: The summit tiltmeter network recorded no significant changes. GPS receivers across the caldera have not recorded significant long-term change (no contraction or extension) since early February. Seismic tremor levels were at low-to-moderate values, which is several times background level. Two small earthquakes occurred on the south flank, and two small events were located north of Kilauea summit.

Sulfur dioxide concentrations peaked at 3000 ppb (3 ppm) yesterday afternoon and 2000 ppb (2 ppm) last night at Jaggar Museum.

Sulfur dioxide (SO2) emission rates from the summit area have been elevated at 2-4 times background values since early January. The emission rate was about 570 tonnes/day last Thursday, compared to a background rate of between 150-200 tonnes/day. SO2 concentrations exceed 1 ppm in areas downwind of Halema`uma`u crater (almost half of Crater Rim Drive between Halema`uma`u parking lot and the southwest rift zone). SO2 concentrations exceed 10 ppm for a short portion of the road between the Halema`uma`u parking lot and the south caldera pullout.

See earlier updates for definitions of terms used in this update.


A map with details of earthquakes located within the past two weeks can be found at http://tux.wr.usgs.gov/

A definition of alert levels can be found at http://volcanoes.usgs.gov/2006/warnschemes.html

---

**Update Archive**

Older updates can be found using the HVO Archive Form.

**New Update Format**

This dynamically updated status page replaces the Kilauea Update section of the Kilauea update page. For more information about the new template and the CAP format, please see the Volcano Hazards News Archive. For more information about the alert levels, please see the U.S. Geological Survey's Alert Notification System for Volcanic Activity Fact Sheet (pdf).
