



Volcano Awareness Month Programs



January 2020 – At-a-Glance

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 <i>Holiday</i>	2	3	4
6 Hike – 10 a <i>Kīlauea Iki</i>	7 ADIP – 7 p <i>HVO update</i>	8 Kona – 3:30 p and 6:00 p <i>Earthquakes in Hawaii</i>	9 Hike – 8 a <i>Kīlauea summit</i> UHH – 7 p <i>(repeat of Jan. 7)</i>	10	11 Hike – 10 a <i>Kahuku Unit – 1868 Mauna Loa flow</i>
13 Hike – 10 a <i>Kīlauea Iki</i>	14 ADIP – 7 p <i>Kīlauea summit update</i>	15	16 UHH – 7 p <i>What 2018 lava flows tell us</i>	17 Hike – 8 a <i>Kīlauea summit</i>	18 Hike – 10 a <i>Mauna Ulu 1969 fissure</i>
20 Holiday Hike – 10 a <i>Kīlauea Iki</i>	21 ADIP – 7 p <i>Kīlauea lower ERZ update</i>	22 Hike – 8 a <i>Kīlauea summit</i>	23	24	25 Hike – 8 a <i>Kīlauea summit</i>
27 Hike – 10 a <i>Kīlauea Iki</i>	28 ADIP – 7 p <i>2018 Earthquakes</i>	29 Kona – 6 p <i>Mauna Loa update</i>	30 HOVE – 6 p <i>Mauna Loa status and preparedness</i>	31	

Details for presentations and hikes noted on this calendar are provided on the following pages.

Talks are free and open to the public. No reservations needed.

Questions? Email askHVO@usgs.gov.

ADIP (After Dark in the Park) Programs • 7:00 p.m.
Kīlauea Visitor Center Auditorium • Hawai'i Volcanoes National Park
Directions: <http://www.nps.gov/havo/planyourvisit/directions.htm>
(Park entrance fees may apply.)

Tuesday, January 7

Transitions: What's next for HVO and the volcanoes it monitors?



2018 and 2019 were years of profound change at Kīlauea Volcano and the USGS Hawaiian Volcano Observatory. Devastation caused by the largest lower East Rift Zone eruption and summit collapse in at least 200 years resulted in many transitions for island residents, including HVO.

Tina Neal, Scientist-in-Charge of the Hawaiian Volcano Observatory, describes the current status of Kīlauea and Mauna Loa and what might be coming next. She also recaps HVO's situation since having to vacate

its building at Kīlauea's summit in 2018, and shares info on the exciting next steps for the volcano observatory in 2020 and beyond. (This presentation will be repeated at UH-Hilo on January 9.) *USGS photo: Ground cracks in front of sign at HVO's former location atop Kīlauea formed during the 2018 summit collapse.*

Tuesday, January 14

What's happening at Kīlauea Volcano's summit?

Kīlauea Volcano's summit has been in an eruptive pause since the 2018 events ended over a year ago. Nevertheless, it remains a dynamic place. Ongoing inflation and seismicity indicate that the summit magma chamber is gradually recharging. A water lake, unprecedented in the written historical record, appeared at the bottom of Halema'uma'u in late July 2019 and has steadily risen. What are the potential hazards at Kīlauea's summit? Could explosive activity return? What is known about the water lake? How is it monitored? Join USGS Hawaiian Volcano Observatory geologists **Matt Patrick** and **Tricia Nadeau** as they answer these questions and more.

USGS photo: Crater lake within Halema'uma'u at the summit of Kīlauea on 10/19/2019.



Tuesday, January 21

Kīlauea lower East Rift Zone 2019: quiet but insightful

In the year since Kīlauea Volcano's notable 2018 eruption ended, the lower East Rift Zone has been relatively quiet. But USGS Hawaiian Volcano Observatory scientists continue to gain insight into the eruption through ongoing research and monitoring. For answers to some of the many questions asked by island residents—Why did the fissures erupt along a linear pattern? How long will it take for the lava to solidify? Why is vegetation still dying in the area?—join USGS Hawaiian Volcano Observatory geologist **Carolyn Parcheta** as she explores these and other queries and shares recent observations and findings by HVO scientists.

USGS photo: Aerial view of fissure 8 lava flow on Kīlauea's lower East Rift Zone after the 2018 eruption ended.



Tuesday, January 28

Seismicity of the 2018 Kīlauea Volcano eruption

The 2018 Kīlauea eruption produced unprecedented levels of seismicity in the volcano's instrumented history. The USGS Hawaiian Volcano Observatory documented about 80,000 earthquakes during the 3-month eruption, starting with the dramatic collapse of the Pu'u 'Ō'ō cone on April 30 and ending with the final Kīlauea summit caldera collapse event on August 5. The sequence included a magnitude-6.9 south flank earthquake, the largest for Hawaii in 45 years. HVO seismologist **Brian Shiro** recounts the 2018 earthquake story, including how HVO adapted its techniques to monitor the events, and describes current levels of seismicity and HVO's ongoing efforts to improve seismic monitoring.

USGS photo: HVO seismologist Brian Shiro checks a seismic station deployed to monitor Kīlauea Volcano's 2018 lower East Rift Zone eruption.



University of Hawai'i at Hilo • 7:00 p.m.
Room 100, University Classroom Building (Bldg 301) • Main Campus
Directions: <http://www.hilo.hawaii.edu/uhh/maps.php>

Thursday, January 9

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since having to vacate its building at Kīlauea's summit in 2018, and shares info on the exciting next steps for the volcano observatory in 2020 and beyond. (This presentation will also be held in Hawai'i Volcanoes National Park on January 7.) *USGS photo: Ground cracks in front of the sign at HVO's former location atop Kīlauea formed during the 2018 summit collapse events.*

Thursday, January 16

What can lava tell us? Deciphering Kīlauea's 2018 eruption through chemistry

The 2018 eruption on Kīlauea's lower East Rift Zone spewed around a billion cubic yards of lava into Puna. From the moment the eruption began, samples of lava were collected and rapidly analyzed by a team of USGS Hawaiian Volcano Observatory and University of Hawai'i at Hilo scientists. Join geologists **Cheryl Gansecki** (UH-Hilo) and **Lopaka Lee** (USGS-HVO) as they discuss how their work revealed the complex story of magma sources, both old and new, inside Kīlauea Volcano, and how certain chemical elements can provide insights useful for monitoring eruptive behavior. *USGS photo: Lava samples*



collected during the 2018 Kīlauea lower East Rift Zone eruption were organized for laboratory analyses at UH-Hilo. Labels on the bags indicate where and when the samples were collected.

Kailua-Kona Public Library • 3:30 p.m.

75-138 Hualālai Rd., Kailua

Directions: <https://www.librarieshawaii.org/branch/kailua-kona-public-library/>

Wednesday, January 8

Living with earthquakes in Hawaii

Tens of thousands of earthquakes occur each year in Hawaii, making it one of the most seismically active places in the United States. **Brian Shiro**, USGS Hawaiian Volcanic



Observatory seismologist, talks about the different types of earthquakes in Hawaii and how they are monitored to help forecast volcanic eruptions and recounts the dramatic seismicity that happened during Kīlauea Volcano's 2018 eruption. Learn about historic damaging earthquakes and seismic hazards in Hawaii, and how you can prepare for the next "big one," as Brian addresses these topics and more, including how you can participate in the process of earthquake monitoring.

(This presentation will be repeated at 6:00 p.m. at the West Hawai'i Civic Center—see below.)

USGS photo: Damage to the Kalāhikiola Congregational Church in Kapaʻau on the Island of Hawai'i caused by the magnitude-6.7 Kīholo Bay earthquake in October 2006.

West Hawai'i Civic Center • 6:00 p.m.

Council Chambers • 74-5044 Ane Keohokalole Hwy, Kailua Kona

<https://www.hawaiicounty.gov/Home/Components/FacilityDirectory/FacilityDirectory/6/34>

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(This presentation is a repeat of the Kailua-Kona Public Library program described above.)

USGS photo: Damage to the Kalāhikiola Congregational Church in Kapaʻau on the Island of Hawai'i caused by the magnitude-6.7 Kīholo Bay earthquake in October 2006.

**Pu'uhonua O Hōnaunau National Historical Park • 6:00 p.m.
Amphitheater • State Hwy 160, Hōnaunau**

Directions: <https://www.nps.gov/puho/planyourvisit/maps.htm>

For more information, call (808) 328-2326.

(Park entrance fees may apply.)

Wednesday, January 29

What will you do when Earth's largest active volcano erupts?

In 2019, the Volcano Alert Level for Mauna Loa was elevated from "NORMAL" to "ADVISORY" due to increased seismicity and deformation at the volcano. This alert level does not mean an



eruption is imminent, but it is a fact that Mauna Loa, which has erupted 33 times since 1843 (most recently in 1984), will erupt again. What will you do when it does?

Join USGS Hawaiian Volcano Observatory geologist **Frank Trusdell** as he presents the current status of Mauna Loa, discusses potential volcanic hazards based on past eruptions, and describes how HVO is preparing for the next eruption of Earth's largest active volcano.

USGS photo: Lava erupts from a fissure on Mauna Loa's Northeast Rift Zone in March 1984.

Hawaiian Ocean View Estates • 6:00 p.m.

Ocean View Community Center • 92-8924 Leilani Circle, Ocean View

<https://www.ovcahi.org/>

Thursday, January 30

Mauna Loa: Status update and how to prepare for its next eruption

In 2019, the Volcano Alert Level for Mauna Loa was elevated from "NORMAL" to "ADVISORY" due to increased seismicity and deformation at the volcano. This alert level does not mean an eruption is imminent, but it is a fact that Mauna Loa, which has erupted 33 times since 1843 (most recently in 1984), will erupt again.

USGS Hawaiian Volcano Observatory Scientist-in-Charge **Tina Neal** addresses the current status of Mauna Loa and hazards of future eruptions and describes how HVO is preparing for the volcano's next eruption. Hawai'i County Civil Defense Administrator **Talmadge Magno** talks about disaster preparedness, including what was experienced during Kīlauea's 2018 eruption, and describes how communities can stay informed. An update on the County's Multi-Hazard Mitigation



Plan and an opportunity to sign up to receive emergency messaging will also be provided.

USGS photo: Massive lava flow erupting from Mauna Loa in March 1984.

Hikes in Hawai'i Volcanoes National Park

Led by USGS-HVO scientists and/or NPS Rangers • Details for each hike provided below.
(Hikes are free, but Park entrance fees may apply.)

Mondays – January 6, 13, 20, and 27

Kīlauea Iki Crater

The 4-mile (6.4 km) Kīlauea Iki Trail is one of the park's iconic hiking trails, a popular destination for hikers who cross a steaming crater floor through the intersection of eruption and native rainforest. Most leave without knowing how the crater was formed, or how three eruptions since 1823 have filled it with more than 400 feet (120 m) of lava. Delve into the secrets of Kīlauea Iki with Park Ranger **Michael Newman**. Discover how fountains of lava from the giant brick-red cone, Pu'u Pua'i, jetted up 1,900 feet (579 m) in 1959 and left behind a 50-foot (15 m) bathtub ring of lava residue on the crater walls. Meet Ranger Michael at the Kīlauea Iki Overlook parking lot.



Start time: 10:00 a.m.

Start/end location: Kīlauea Iki Overlook parking lot on Crater Rim Drive in Hawai'i Volcanoes National Park (Map: <https://www.nps.gov/havo/planyourvisit/upload/HAVO-Unigrig-Brochure-2019.jpg>)

Walking distance: 4 miles (6.4 km)

Estimated duration: 2 hours

Hike rating: moderately difficult with an elevation gain of 400 feet (120 m)

For your safety: wear sturdy, closed-toe walking shoes; bring protective gear for sun and rain; bring drinking water and snacks

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Multiple dates/days – January 9 (Thurs.), 17 (Fri.), 22 (Wed.), and 25 (Sat.)

A walk through Kīlauea Volcano's summit history

Join USGS Hawaiian Volcano Observatory scientist emeritus **Don Swanson** on a 2-hour walk, during which you learn about the past 500 years of Kīlauea Volcano's history as revealed by



rocks, craters, and cracks. Meet Don at the Devastation Trail parking lot on Crater Rim Drive. Arrive early, as he begins the guided walk to Keanakāko'i Crater promptly at 8:00 a.m. Along the walk, Don points out and explains some of the features that formed during the 2018 summit collapse events, as well as the best publicly accessible display of explosive deposits erupted from Kīlauea around 230-370 years ago, one of which probably relates to an important oral tradition. Don also shows two contrasting vents for the July 1974 eruption, highlights the thick

deposit of pumice and scoria erupted in 1959, and ponders the origin of Keanakāko'i Crater. An NPS Ranger will be available to answer questions about Hawai'i Volcanoes National Park.

Start time: 8:00 a.m.

Start/end location: Devastation Trail parking lot on Crater Rim Drive in Hawai'i Volcanoes National Park (Map: <https://www.nps.gov/havo/planyourvisit/upload/HAVO-Unigrig-Brochure-2019.jpg>)

Amenities: portable toilet at the parking lot

Walking distance: 2 miles (3.2 km) round-trip

Estimated duration: 2 hours (plus time to walk back to parking lot at your leisure)

Walk rating: easy, mostly on paved road

For your safety: wear comfortable, closed-toe walking shoes; bring protective gear for sun and rain; bring drinking water

Saturday – January 11 (Kahuku Unit)

Hike the path of Mauna Loa's 1868 lava flow

RCUH-Hawaiian Volcano Observatory (HVO) geologists **Katie Mulliken** and **Lil DeSmither** lead this guided hike along the Pu'u o Lokuana trail in the Kahuku Unit of Hawai'i Volcanoes



National Park. During the hike, you learn about the eruptive history, structure, and current status of Mauna Loa, Earth's largest active volcano, as you traverse lava flows from its 1868 eruption. Katie and Lil explain the volcanic features along the trail and tell the story of the destructive eruption and associated earthquakes in 1868. They also share information on how HVO monitors Mauna Loa, which has erupted 33 times since 1843, most recently in 1984. An NPS Ranger assists with the hike to

answer questions about the Kahuku Unit of Hawai'i Volcanoes National Park.

Start time: 10:00 a.m.

Start/end location: Meet at the Visitor Contact Station in the Kahuku Unit of Hawai'i Volcanoes National Park (Map: https://www.nps.gov/havo/images/HAVO_Kahuku-Map.jpg)

Amenities: vault toilet at the parking lot; no running water

Walking distance: 2 miles (3.2 km) round-trip

Estimated duration: 2 hours

Walk rating: easy, but includes 100-ft (30-m) elevation gain, and crosses rough, uneven lava surfaces

For your safety: wear sturdy closed-toe walking shoes; bring protective gear for sun and rain; bring drinking water

More info: To read more about the trail and history of Kahuku, download the NPS "Pu'u O Lokuana Trail Guide" at: <https://www.nps.gov/havo/planyourvisit/upload/Puu-o-Lokuana-Trail-Guide.pdf>.

Saturday – January 18

Hike back in time to the 1969-74 Mauna Ulu eruption

USGS Hawaiian Volcano Observatory geologist Dr. **Carolyn Parcheta** leads this 2-hour guided walk along the fissure that started the Mauna Ulu eruption on May 24, 1969. Lava continued to erupt over the next five years, making it the longest observed effusive rift eruption at the time. The eruption ultimately built a lava shield, Mauna Ulu ("growing mountain"), a prominent landmark on Kilauea's East Rift Zone. It also sent lava flows to the coast and allowed for detailed observations of eruption processes. During the walk, Carolyn describes how fissures form, how lava fountains erupt, how these eruptions create the environment you see, and why some lava drained back into the ground. She also discusses her research that revealed just how deep the fissure extends into the ground. Meet at the Mauna Ulu parking lot before the 10:00 a.m. start time. An NPS Ranger assists to answer questions about Hawai'i Volcanoes National Park.



Start time: 10:00 a.m.

Start/end location: Mauna Ulu parking lot on Chain of Craters Road in Hawai'i Volcanoes National Park (Map: <https://www.nps.gov/havo/planyourvisit/upload/HAVO-Unigrd-Brochure-2019.jpg>)

Amenities: vault toilet at the parking lot; no running water

Walking distance: 1 mile (1.6 km) round-trip

Estimated duration: 2 hours

Walk rating: easy, but crosses loose, gravel-like lava fragments and rough, uneven surfaces

For your safety: wear sturdy closed-toe walking shoes; bring protective gear for sun and rain; bring drinking water

More info: To explore the Mauna Ulu trail after this guided walk, download the NPS "Mauna Ulu Eruption Guide" at https://www.nps.gov/havo/planyourvisit/upload/mauna_ulu_trail_guide.pdf.