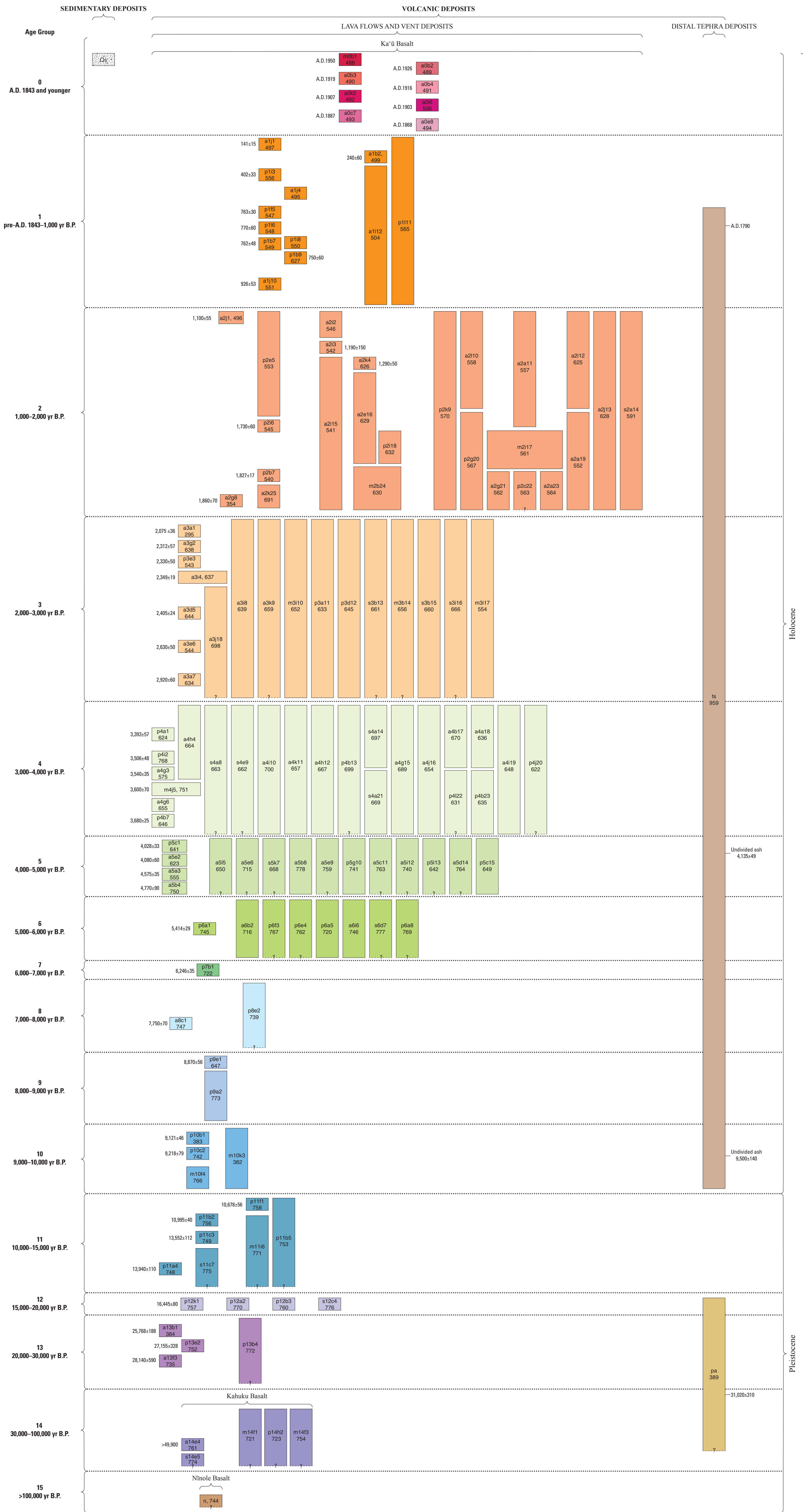


CORRELATION OF MAP UNITS

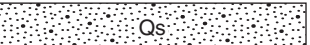
[Only the unit labeled for the most common flow type, listed first in the unit description (Description of Map Units, pamphlet), is included in the Correlation of Map Units and table 2. See Description of Map Units for detailed unit age information. Uncalibrated radiocarbon ages are reported in years before present (yr B.P.). Undated flows are correlated with dated flows using superposition; surface exposure; color change caused by solar radiation, tree height, size, and girth; diversity of native plant species; and soil and ash accumulation. Equivalence of horizontal position of undated flows does not imply age equivalence and vertical positioning of one unit over another applies only to the stratigraphic relations of the units that are superimposed (such as p2b7 and a2k25 or m2i17 and a2g21, p2c22, and a2a23) in the correlation diagram. Queried dashed line at bottom of unit map shows base of flow is concealed. In addition to the map unit label, a unique, three-digit flow identification number (FID, for example, FID 959) is assigned to each mapped flow unit to facilitate use of the database (<https://doi.org/10.3133/2932C>); the FID is essential as a unique descriptor for unit identification in the database. FID numbers are included for the units shown]



LIST OF MAP UNITS

[Some unit exposures on the printed or plotted map are not labeled to avoid obscuring data; use unit color or database (<https://doi.org/10.3133/2932C>) for unit identification. The simplified map unit label is not unique and provides quick access to flow morphology, flow age group, phenocryst mineralogy, and flow number in an age group (table 3, sheet 1); this non-unique unit label may be used for an entirely different unit on a different flank of Mauna Loa. We use the term "phenocryst" for any mineral ≥ 1 mm in maximum diameter. Proxemics is not an abundant phenocryst in Mauna Loa lava flows; therefore, it is not included in phenocryst mineralogy. In addition to the map unit label, a unique, three-digit flow identification number (FID, for example, FID 959) is assigned to each mapped flow unit to facilitate use of the database for the entire Mauna Loa edifice; the FID is essential as a unique descriptor for unit identification in the database]

SEDIMENTARY DEPOSITS



Surficial sedimentary deposits

VOLCANIC DEPOSITS

LAVA FLOWS AND VENT DEPOSITS

Ka'u Basalt

Age Group 0 (A.D. 1843 and younger; Holocene)

m0b1, a0c1, m0a1, a0i1	A.D. 1950 flow—FID 488
a0b2, p0b2, s0b2	A.D. 1926 flow—FID 489
a0b3, s0b3	A.D. 1919 flow—FID 490
a0b4, a0b4	A.D. 1916 flow—FID 491
a0b5, s0b5	A.D. 1907 flow—FID 492
a0b6, p0b6	A.D. 1903 flow—FID 506
a0c7, a0c7	A.D. 1887 flow—FID 493
a0b8, p0b8, s0b8, b0b8	A.D. 1868 flow—FID 494

Age Group 1 (A.D. 1843–1,000 yr B.P.; Holocene)

a1i1, p1i1, s1i1	Manuka flow—FID 497
a1b8, a1b2, p1b2, m1b2, s1b8, m1b2, p1b2	Hapaimamo flows—FID 499
p1i3, s1i3	Kipahochoe flow—FID 556
a1i4	Kc A Pele o Iki flow—FID 495
p1i5	Kipukanent flow—FID 547
a1i8, a1i8	Alapa'i flow—FID 548
p1i7	Waikapuna flow—FID 549
p1i8, a1i8	Flow 550—FID 550
p1i9, a1i9, a1i9	Kipuka Kanohina flow—FID 627
a1i10, p1i10	Hakapohāhā flow—FID 551
p1i11, a1i11	Flow 565—FID 565
a1i12, a1i12	Flow 504—FID 504

Age Group 2 (1,000–2,000 yr B.P.; Holocene)

a2i1	Kcipohina flow—FID 496
a2i2, p2i2, a2i2, m2i2	Kipuka Pechi flow—FID 546
a2i3, p2i3, m2i3	Lua Nui flow—FID 542
a2i4, m2i4, s2i4, p2i4	Kipukanano flow—FID 626
p2i5, a2i5, m2i5, s2i5	Puu Ohohia flow—FID 553
p2i6, a2i6, m2i6, s2i6	Pu'u'oke'oke' o flow—FID 545
p2i7	Moa'ula flow—FID 540
a2i8	Flow 354—FID 354
p2i9, a2i9	Flow 570—FID 570
a2i10	Flow 558—FID 558
a2i11	Papa flow—FID 557
a2i12	Flow 625—FID 625
a2i13	Flow 628—FID 628
a2i14	Cone 591—FID 591
a2i15	Ki'olaka'a flow—FID 541
a2i16	Pohue Bay picrite flow—FID 629
m2i17, p2i17, a2i17	Milo'i flow—FID 561
p2i18	Kipuka Waiahuli flow—FID 632
a2i19	Flow 552—FID 552
p2i20, a2i20	Flow 567—FID 567
a2i21	Flow 562—FID 562
p2i22	Hononaino flow—FID 563
a2i23	Kalihi flow—FID 564
m2i24, p2i24, a2i24, b2i24	Pohue Bay flow—FID 630
a2i25	Flow 691—FID 691

Age Group 3 (2,000–3,000 yr B.P.; Holocene)

a3a1	Red Cone flow—FID 295
a3g2	Ninole Gulch flow—FID 638
p3b3, a3b3, s3b3, b3b3	Ka'i'iki'i flow—FID 543
a3i4, p3i4	Ninole flow—FID 637
a3i5	Hokukano flow—FID 644
a3i6, p3i6, s3i6, b3i6	Pu'u 2847 flow—FID 544
a3i7	Flow 634—FID 634
a3i8	Puu o Lokuaia flow—FID 639
a3i9, p3i9, s3i9	Kipuka Kamilohina flow—FID 659
m3i10, a3i10, p3i10	Flow 652—FID 652
p3i11	Paikuhivi flow—FID 633
p3i12	Flow 645—FID 645
s3i13	Cone 661—FID 661
m3i14	Flow 656—FID 656
s3i15, a3i15, p3i15	Ihuana flow—FID 660
s3i16	Cone 666—FID 666
m3i17	Flow 554—FID 554
a3i18	Flow 698—FID 698

Age Group 4 (3,000–4,000 yr B.P.; Holocene)

p4i1	Kaunaha'ao flow—FID 624
p4i2	Flow 768—FID 768
a4i3	Flow 575—FID 575
a4i4, p4i4	Flow 664—FID 664
m4i5	Mountain House flow—FID 751
a4i6	Flow 655—FID 655
p4i7	Hi'ema'a flow—FID 646
a4i8	Kapoolahala cone—FID 663
a4i9	Cone 662—FID 662
a4i10	Flow 700—FID 700
a4i11	Flow 657—FID 657
a4i12	Flow 667—FID 667
p4i13, a4i13	Flow 699—FID 699
a4i14	Cone 697—FID 697
a4i15	Flow 689—FID 689
a4i16, p4i16	Flow 654—FID 654
a4i17	Kipukamahua flow—FID 670
a4i18	Flow 636—FID 636
a4i19	Flow 648—FID 648
p4i20	Flow 622—FID 622
a4i21, p4i21	Kcau flow—FID 669
p4i22, a4i22	Kaulanama flow—FID 631
p4i23	Flow 635—FID 635

Age Group 5 (4,000–5,000 yr B.P.; Holocene)

p5i1	Wailau flow—FID 641
a5i2, s5i2	'Akili flow—FID 623
a5i3	Flow 555—FID 555
a5i4, p5i4	Flow 759—FID 750

Age Group 5 (4,000–5,000 yr B.P.; Holocene)—Continued

a5i5, p5i5	Flow 650—FID 650
a5i6, p5i6	Flow 715—FID 715
s5i7	Pu'u 5680—FID 668
a5i8, m5i8, p5i8	Flow 778—FID 778
a5i9, p5i9	Kipuka Kaha o Kili Waa flow—FID 759
p5i10	Flow 741—FID 741
a5i11	Flow 763—FID 763
a5i12	Flow 740—FID 740
p5i13	Flow 642—FID 642
a5i14, p5i14	Flow 764—FID 764
p5i15	Flow 649—FID 649

Age Group 6 (5,000–6,000 yr B.P.; Holocene)

p6i1	Flow 745—FID 745
a6i2	Flow 716—FID 716
p6i3	Flow 767—FID 767
p6i4, a6i4	Flow 762—FID 762
p6i5	Flow 720—FID 720
a6i6	Flow 746—FID 746
s6i7	Kamakapa flow—FID 777
p6i8	Flow 769—FID 769

Age Group 7 (6,000–7,000 yr B.P.; Holocene)

p7i1	Halokāne flow—FID 722
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Age Group 8 (7,000–8,000 yr B.P.; Holocene)

a8i1, s8i1	Puu Poo Poo flow—FID 747
p8i2, s8i2	Kamakapa flow—FID 739

Age Group 9 (8,000–9,000 yr B.P.; Holocene)

p9i1, a9i1	Kāhiliipali Nui flow—FID 647
p9i2	Flow 773—FID 773

Age Group 10 (9,000–10,000 yr B.P.; Holocene)

p10i1	Ka'u High School flow—FID 383
p10i2	Lae'opuhili flow—FID 742
m10i3	'Hiohio flow—FID 382
m10i4	Flow 766—FID 766

Age Group 11 (10,000–15,000 yr B.P.; Holocene and Pleistocene)

p11i1	Honu'apo flow—FID 758
p11i2	Flow 756—FID 756
p11i3, a11i3	Puu Poopaa flow—FID 749
p11i4, a11i4	Flow 748—FID 748
p11i5	Ka'alaiki flow—FID 753
m11i6, a11i6, p11i6	Pohakuloa flow—FID 771
a11i7	Puu Kanihiki cone—FID 775

Age Group 12 (15,000–20,000 yr B.P.; Pleistocene)

p12i1	Kaunamano flow—FID 757
p12i2	Flow 770—FID 770
p12i3	Puu Hoomaha flow—FID 760
p12i4	Cone 776—FID 776

Age Group 13 (20,000–30,000 yr B.P.; Pleistocene)

a13i1	Flow 384—FID 384
p13i2	Papakālea flow—FID 752
a13i3	Lava flow of Hi'omamo Gulch—FID 735
p13i4	Flow 772—FID 772



Photograph showing a pseudodike in a tephra cone near the top of Hawaiian Ocean View Estates. Photograph by Jim Griggs, U.S. Geological Survey.



Panoramic photograph showing Puukamahana (FID 774), a tuff cone in Ka Lae quadrangle that is otherwise known as "Green Sand Beach." The flow in the foreground is the Papakālea flow (unit p13i2; FID 752), which overlies and surrounds Puukamahana, and has been dated to 27,155 yr B.P.



Panoramic view of the southern flank of Mauna Loa, from Pu'u'ohu to Hawaiian Ocean View Estates subdivision in the distance. From left to right, the dark flows are the A.D. 1907, A.D. 1887, and, adjacent to Pu'u'ohu (a littoral cone), A.D. 1868 flows. Littoral cones that follow the coastline are characteristic of Mauna Loa's Southwest Rift Zone.

Kahuku Basalt

Age Group 14 (30,000–100,000 yr B.P.; Pleistocene)

m14i1	Kahuku Pali section—FID 721
p14i2	Kipapa flow—FID 723
m14i3	Undifferentiated basalt flows—FID 754
a14i4	Hali'i flow—FID 761
s14i5	Puukamahana—FID 774

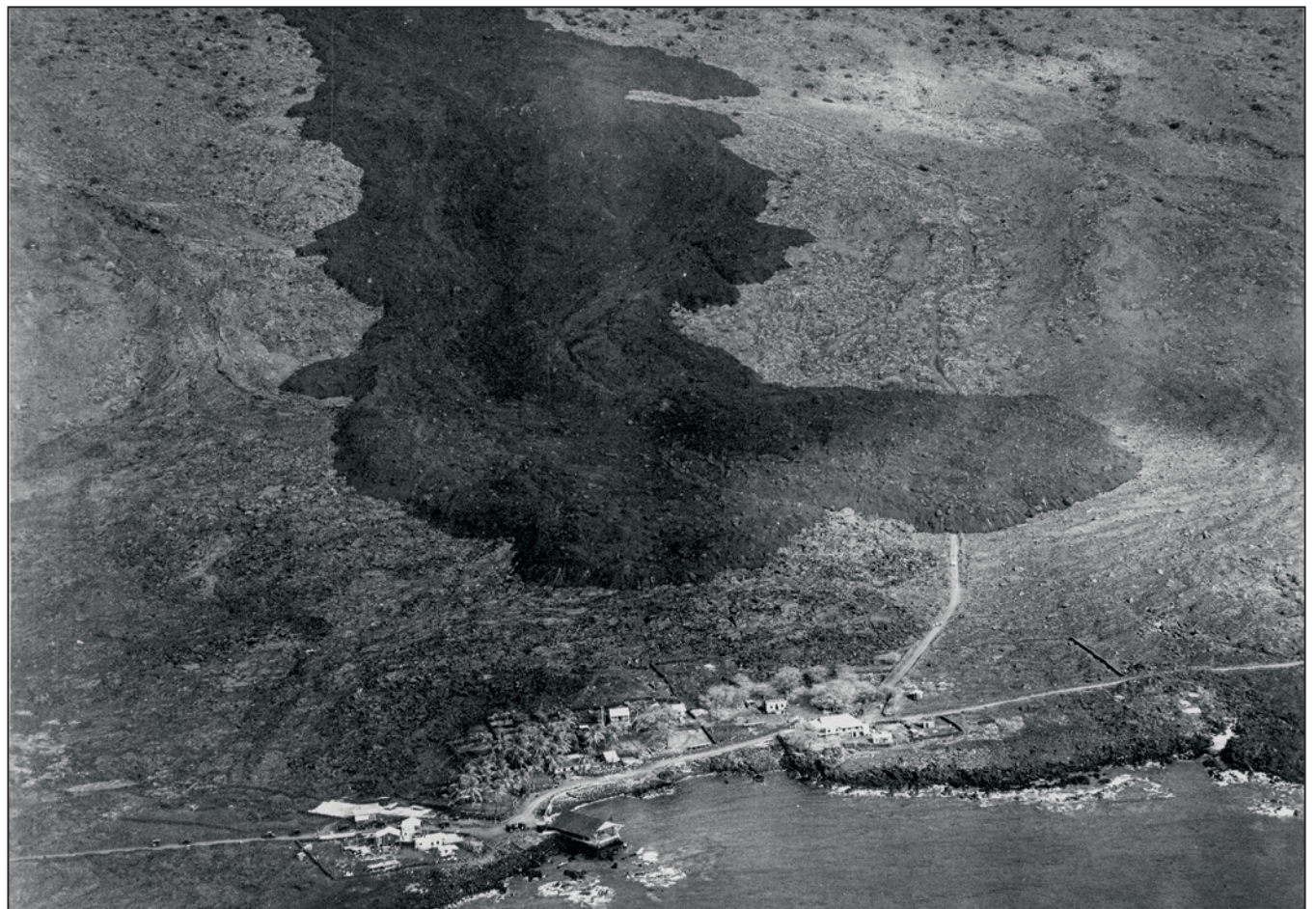
Ninole Basalt

Age Group 15 (>100,000 yr B.P.; Pleistocene)

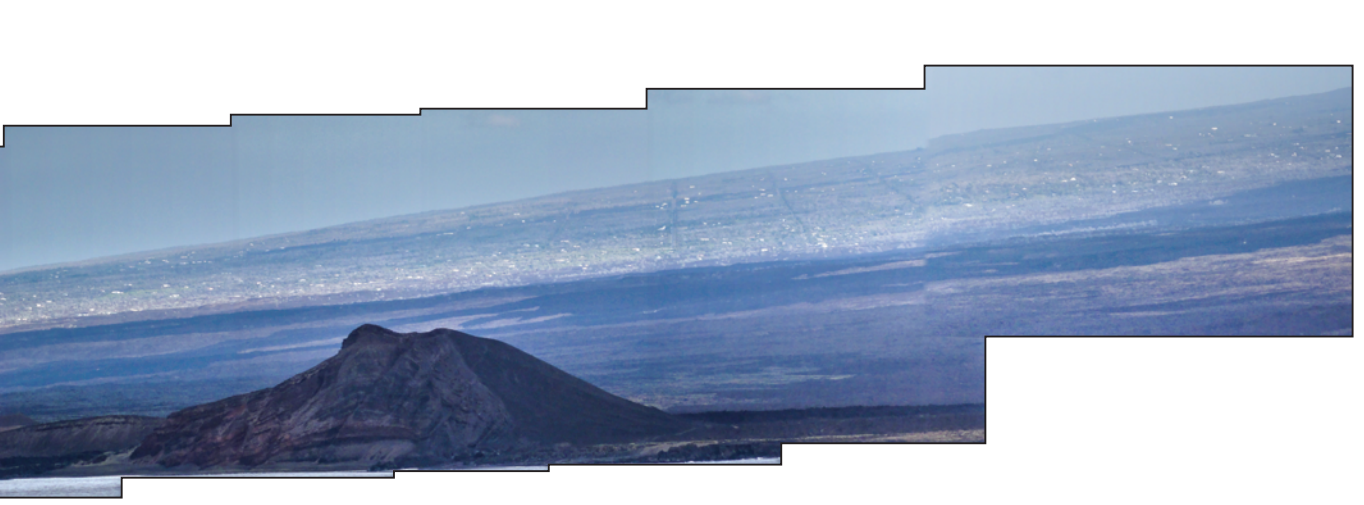
n	Ninole Basalt—FID 744
ts	DISTAL TEPHRA DEPOSITS
ts	Tephra (Holocene and Pleistocene)
ts	Southern tephra—FID 959
pa	Pāhala Ash—FID 389

EXPLANATION OF MAP SYMBOLS

- Contact—Approximately located. Internal contact defines flows
- Fault—Ball and bar on downthrown block. Solid where certain, dashed where approximate, dotted where concealed
- Fissure—Trace of fissure
- Vent—Trace of vent
- Ground-crack zone
- Dike
- Littoral deposits
- 'A'a and mixed flows
- Spatter
- Ash—Ash (unit ts) covering flows
- Tephra—Tephra from the eruption event(s) that formed the Hapaimamo flows (FID 499). Shown where the underlying unit is identifiable and mappable
- Kilaua Volcano deposits—Exposed in eastern part of map area
- Radiocarbon-dated sample locality—Age shown in yr B.P. See table 2 (pamphlet) for analytical data; note that not all age localities are in map area
- Sample from surface flow—Charcoal
- Sample from measured section—Does not date surface flow



Photograph showing a lava flow from the A.D. 1928 eruption as it descends toward the village of Ho'opūloa near Milo'i. U.S. Army Corps of Engineers photograph.



Geologic Map of the Southern Flank of Mauna Loa Volcano, Island of Hawai'i, Hawaii

By
Frank A. Trusdell and John P. Lockwood
2020

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