

KEY TO GEOLOGIC MATRIX

Definitions to Subscripts under headings:

Flow

- Tb--Tubes
- Tu--Tumuli
- C --Lava Channels
- B --Lava Bombs
- X --`a`a and Pahoehoe flows and the interrelationship, structure and flow mechanics.
- Cl--Columnar Jointing

Core

- D--Dikes
- I--Intrusive bodies, magma chambers
- S--Allows otherwise unforeseen views into the core of volcanoes.

Explosive

- Ph--Phreatic and Phreato-magmatic eruptions
- TC--Tuff Cones
- A --Ash

Catastrophic

- T --Tsunami
- LS--Landslides or Mass wasting events
- F --Faulting

Geologic Stages: What stage of Hawaiian volcanism is represented

- A --Alkalic
- S --Shield
- PE--Post-Erosional
- E --Erosional

Coastal Processes

- A --Arches
- IT--Inter-Tidal
- T --Tidal
- B --Beach
- D --Dunes

Danger

Refers to the perceived threat of development or destruction.

Rank and Program

Site as rated by Geologists. Broken down into 3 group: NARS, NAPP, MOU (Memorandum of Understanding). Each group has its own 1,2,3 rating.

Geologic Sites

Merits: Geologic sites may be the least controversial and inexpensive additions to the NARS system. The greatest threat to geologic sites are Geologists and Development pressures (Bulldozing).

Management: Feral animals, weeds, and insects are not a problem to geologic sites. We do not need the capital intensive measures that most biological preserves need in order to manage the geologic sites.

We have tried to select sites that are representative of all types of geologic processes. The emphasis is on volcanic processes.

NARSMXXLS

PLACE NAME	Effusive	Explosive	Catastrophic	Xenoliths	Geologic Stages	Co-mingling	Sink Holes	Paleo	Climate Change	Coastal Processes	Carbonate
ENTIRE SUMMIT		PH		X	A						
MOORE CRATER	X			X	A						
PUU WAAWAA	X				A						
SAKO	X				A						
XENOLITH SITE	X			X	A						
UULANI CAVE	X				A						
G.CRACK TO OCEAN	X				S			X			
KAPOHO CRATER	X	PH, TC			S				X		
KAPOHO LIGHTHOUSE	X				S						
PUU KAMEHAME	X				S					B, T, IT, D	
PUU ULAULA	X				S						
SAND HILLS					S						
SWRZ PK TO PUNALUU	X				S						
KAWAIHAE QUARRY	X		T		A	X		X			X
1843 TUMULI	X				S						
KEALAKEKUA PALI	X		F, LS		A, S	X					
PUU HOU	X				S						
PUU KI	X				S						
PUU MAHANA	X	PH, A			S					B, T, IT, D	
WAILUKU DRAINAGE	X	A			A, S	X					
KALIHUWAI VALLEY	X			X							
PILLOW LAVAS											
BACKSHORE SECRET BCH		TC									
KA LAE PAOO					A, S, PE, E	X		X		B, T, IT, D	X
WAIMEA CANYON					A, PE, E	X		X		B, T, IT	X
TSUNAMI DEPOSITS					A, S, E	X		X			
KAHULIANAP, KOAE, P.	X		T		E	X		X		B, T, IT	X
PUU KILEA	X				A, E	X					
H-3 ROADCLUT	X				FE	X					
HAUNAMA-LANI LKOUT		PH, TC			S						
HAUNAMA-MAKAPUU		PH, TC			FE	X					X
LANILOA PENINSULA					FE						
MAKAPUU FT LKOUT	X				'E			X		B, T, IT, D	X
PALI VENT OLD HWY	X		F, LS		S, PE, E	X		X			
SALT LAKE CRATER	X		F, LS	X	S, PE, E	X		X		B, T, IT, D	X
BB FT DRAINAGE DITCH	X	PH, TC		X	FE			X		B, T, IT, D	X
EWA SINK HOLES					E PE						
MAUNA KUWALE	X				E PE						
PUU KAPOLEI	X			X	A, S	X					
TSUNAMI WARN CTR PROP					FE						
H1 VOLCANOES	X	A	F		E	X		X		B, T, IT, D	X
MAUNA KEA	X			X	S	X		X		A, B, T, IT	
					A			X			

NARSMXCLS

ISLAND	VOLCANO	QUAD NAME	PLACE NAME	OWNER	Cones	Vents	Domes	Pit Craters	Core	Flow	Littoral
1	H	HUALALAI	ENTIRE SUMMIT	KSBE	X	X		X		Tb, Tu, C, B	
2	H	HUALALAI	MOORE CRATER	KSBE	X	X				Tb, C	
3	H	HUALALAI	PUU WAAWAA	STATE	X		X			X	
4	H	PUU ANAHULU	SAKO	KSBE	X	X		X			
5	H	HUALALAI	XENOLITH SITE	KSBE	X	X				Tb, Tu, C	
6	H	HUALALAI	UJLANI CAVE	STATE	X	X				Tb, C	
7	H	PAHALA	G.CRACK TO OCEAN	???	X	X				Tb, Tu, C	
8	H	KIL	KAPOHO CRATER	STATE	X						X
9	H	KIL	KAPOHO LIGHTHOUSE	STATE							
10	H	KIL	PUU KAMEHAME	STATE	XX	X				Tb, Tu, C	X
11	H	KIL	PUU ULAUULA	C. BREWER?							
12	H	KIL	SAND HILLS	STATE	X	X				C	X
13	H	KIL	SWRZ PK TO PUNALUU	???	X					Tb, Tu, C	X
14	H	KAWAIHAE	KAWAIHAE QUARRY	STATE						Tb, Tu, C	X
15	H	MLO	1843 TUMULI	STATE						X	
16	H	MLO	KEALAKEKUA PALI	STATE						Tb, Tu, C	
17	H	MLO	PUU HOU	KSBE						Tb, Tu, C	
18	H	MLO	PUU KUI	PRIVATE	X					C	X
19	H	MLO	PUU MAHANA	DHHL		X				Tb, Tu, C	X
20	H	MLO	WALLUKU DRAINAGE	STATE						X, P, Ci	X
1	KAUAI	HANAPEPE	KALIHUWAI VALLEY	PRIVATE							
2	KAUAI	KILAUEA	PILLOW LAVAS	COUNTY							
3	KAUAI	POIPU	BACKSHORE SECRET BCH	Blazer Enter Inc.							
4	KAUAI	WAIPIA	KA LAE PAOO	GROVE FRAMS							
5	KAUAI	HULLIHOE	WAIPIA CANYON	STATE		X				P	X
1	LANAI	LANAI SOUTH	TSUNAMI DEPOSITS	MUFDROCK						X, P	X
1	MAUI	W.MAUI	P. KOAE, P. KAHULIANAPA	STATE	X		X			X, P	
2	MAUI	W.MAUI	PUU KILEA	John Kaanae/Etal	X		X			X	F
1	OAHU	KOOLAU	H-3 ROAD CUT	STATE							
2	OAHU	KOOLAU	HAUNAMA-LANII LKOUT	STATE OR CCH	X		X				
3	OAHU	KOOLAU	HAUNAMA-MAKAPUU	STATE							
4	OAHU	KOOLAU	LANILOA PENINSULA	MANY							
5	OAHU	KOOLAU	MAKAPUU FT LKOUT	STATE						X, Tb	
6	OAHU	KOOLAU	KANECHHE	STATE	X		X			X	
7	OAHU	KOOLAU	SALT LAKE CRATER	STATE	X		X				
8	OAHU	WAIANAE	BB FT DRAINAGE DITCH	STATE(?)							
9	OAHU	WAIANAE	EWA SINK HOLES	CAMPBELL EST.							
10	OAHU	WAIANAE	MAUNA KUWALE	DHHL							
11	OAHU	WAIANAE	PUU KAPOLEI	CCH	X					X	
13	OAHU	WAIANAE	TSUNAMI WARIN GTR PROP	FEDERAL							
H	KIL-M LOA		Hi Volcanoes	FEDERAL	X	X		X		Tb, Tu, C, B	
H	Mauna Kea		Ice-Age	STATE	X	X				Tb, Tu, C, B, P	