PRELIMINARY GEOLOGIC MAP AND CROSS SECTIONS WITH EMPHASIS ON QUATERNARY VOLCANIC ROCKS, SOUTHERN CASCADE MOUNTAINS, WASHINGTON

By
PAUL E. HAMMOND
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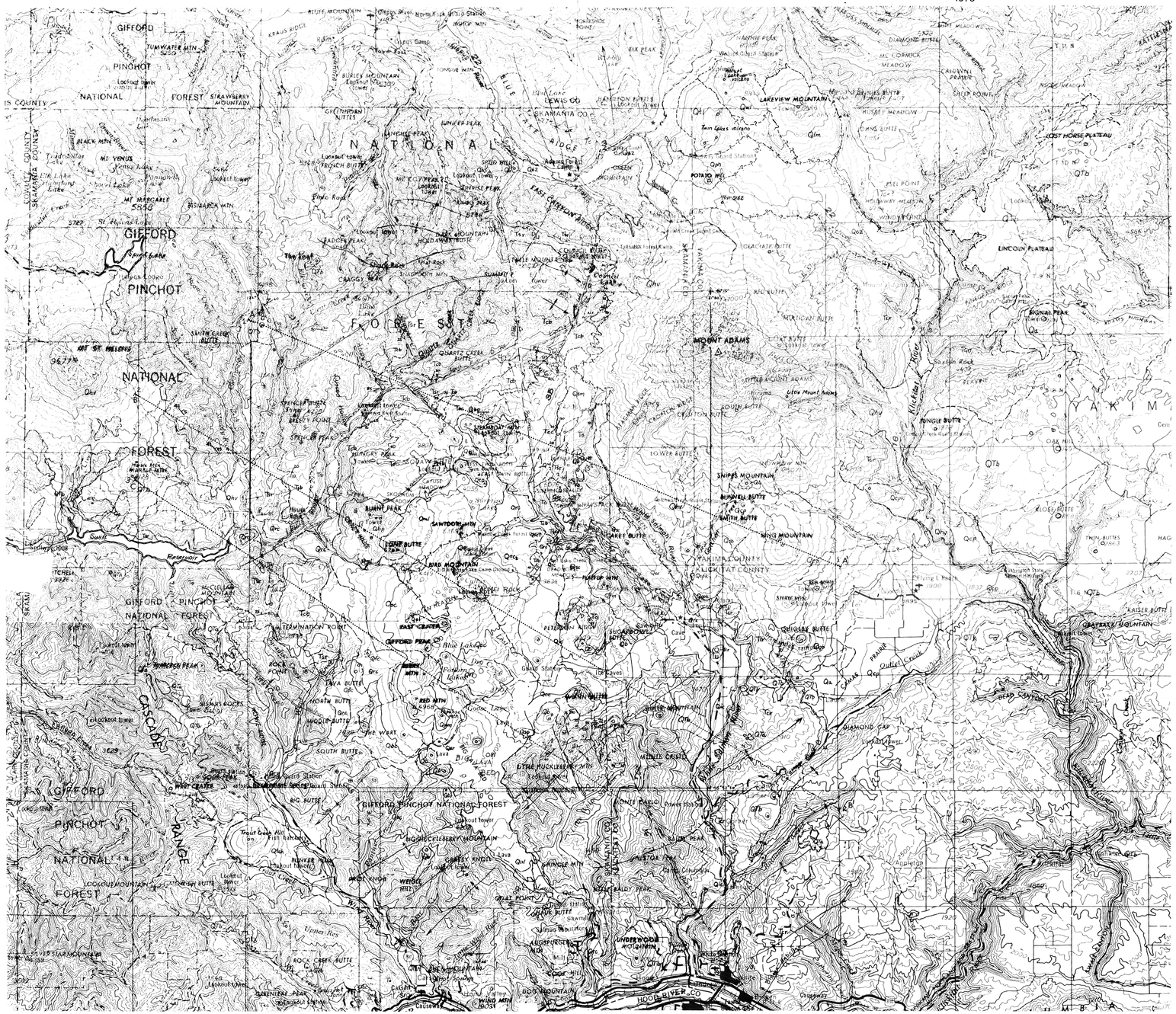
OFR 75-13



Geologic Units

Qls: Landslide

Qg (not shown on map): Glacial deposits

Qhv: High Cascade volcanic rocks of Mounts St. Helens and Adams

Q...: Quaternary basalts (See Table of Quaternary Basalts)

Qb: unnamed younger (690,000 y) basalt. Includes several units of Wise (1970).

Qa: unnamed younger (690,000 y) andesite. Includes Sheppard (1964) augite-oxyhornblende andesite, and Andesite of Marble Mountain (Hopson, 1972).

QTb: unnamed older (690,000 y) basalt. Includes Underwood Mtn. and White Salmon volcanoes (Waters, 1973), Marble Mountain Basalt (Hopson, 1972), and several units of Wise (1970).

Qia: unnamed older (690,000 y) andesite. Includes Andesite of Soda Peak (Wise, 1970), of Tinbered Peak, and oxyhornblende decite of Sheppard (1964).

QTi: Brecciated rhyolite (?) of Mann Butte.

Tcr: Columbia River Basalt and associated sedimentary rocks

Tec: Eagle Creek Formation

Tcb: Beds of Council Bluff

Tsr: Stevens Ridge Formation

To: Ohanapecosh Formation

Symbols

- Strike and dip of bedding
- Contact between units; queried (?) where indefinite.
- Fault, hachures on down (D) side; queried (?) where indefinite.
- Trace of anticlinal axis, showing direction of plunge.
- Trace of synclinal axis, showing direction of plunge.
- Volcanic center; larger is well-defined crater.
- Dikes and plugs, probable feeders to extrusions.
- Hot Spring

TABLE OF QUATERNARY BASALTS AND INTERBEDDED TEPHRA IN SOUTHERN CASCADE RANGE, WASHINGTON (7/5/75) PEH

Age (y BP)	Name	Symbol	Source	Description (with thicknesses of flows)	Thickness
	Indian Heaven Fissure Zone				
0-				phyric	
450 "W" ash	Big Lava Bed	Qbl	Mt. St. Helens	Dark gray, very fresh olivine (10%) basalt; vesicular to dense; slab pahoehoe to scoriaceous top, tumuli and pressure ridges; 3-30 ft. (Wise, 1970, p.32-33, #19 & 20)	100-300
>3000 <4000 "T" ash	South Red Mtn. cinder cone	Qsr	Mt. St. Helens		
5000-					
4600-7000 "O" ash			Mazama (Crater Lake)		
	West Crater	Qwc	West Crater	Gray, phyric olivine (5%) basalt, dense; blocky; 10-25 ft. (Wise, 1970, p. 33)	100-200
	Twin Buttes	Qtb1	Squaw Butte	Gray, olivine basalt, vesicular to dense; blocky to scoriaceous; 10-30 ft.	100-400
		Qtb2	Twin Buttes		
9830 <11,500 "J" ash			Mt. St. Helens		
10,000-					
12,000 <15,000 "S" ash			Mt. St. Helens		
15,000-					
	Burnt Peak	Qbp	Crazy Hills, Lone Peak, W. ridge of Steamboat Mtn.	Gray, olivine basalt, vesicular to dense; blocky; forms pillow palagonite breccia; 30-150 ft. (Petersen, 1973, 1974)	100-1000
	FRASER GLACIATION				
20,000-	LASCHAMP REVERSED				
25,000-	EPOCH				
30,000-					
	Ice Cave	Qic	Lemei Rock	Gray, phyric, glomeroporphyritic, olivine (10%)-tabular plagioclase (25%) basalt; vesicular; slab pahoehoe to scoriaceous top, scoriaceous base; 5-30 ft. (Sheppard, 1964, Olivine Basalt of White Salmon River)	5-100
	Deadhorse Creek	Qdh	Bird Mtn. (?)	Gray, phyric olivine (5%)-hypersthene (5%)-plagioclase (20%) basalt; dense; blocky; 10-30 ft.	30
	Eunice Lake Falls Creek	Qel	East Crater	Gray, olivine basalt; dense; blocky; 10-30 ft.	10-100
		Qfc	W. of Berry and Red Mtns.	Light gray, basalt; dense; platy to slabby; 30-100 ft. (Wise, 1970, #29)	30-200
	Forlorn Lakes	Qfl	SE of Gifford Peak	Light gray basalt; dense; platy to slabby; 30-100 ft. (Wise, 1970, #32)	30-400
	Papoose Mountain	Qpm		Gray, phyric plagioclase (10%),olivine basalt; dense; blocky; 10-30 ft.	10-300
	Black Creek	Qbc	Red Mountain	Gray, olivine basalt; dense; blocky; 10-30 ft. (Wise, 1970,p. 31, #23)	10-400
	Flattop Mountain	Qfm		Gray, olivine basalt; vesicular to dense; blocky; 10-30 ft.	10-150
	Outlaw Creek	Qoc	East Crater, Gifford Peak and/or Lemei Rock	Dark gray, olivine basalt; vesicular to slightly inflated; blocky and scoriaceous; 5-20 ft. Wise, 1970, #18)	5-200
	South Prairie	Qsp		Dark gray, olivine basalt; vesicular; scoriaceous; 5-20 ft.	5-30
	Bush Creek	Qrc	Gifford Peak or Berry Mtn.	Gray, glomeroporphyritic olivine (10%)-tabular plagioclase (25%) basalt; vesicular to dense; 5-30 ft.	5-600
	Trout Creek Hill	Qtch		Dark gray, glomeroporphyritic olivine (20%) basalt; 5-150 vesicular to dense; blocky; 5-30 ft. (Wise, 1970, p. 32, #25,26; Waters, 1973)	5-150
35,000-					
	Mosquito Lake	Qml	Sawtooth Mtn.	Gray olivine basalt; dense; platy to blocky; 10-20 ft.	10-150
	SALMON SPRINGS GLACIATION				
50,000-					
	Shull Creek Point (Little Deer Point)	Qsc; Qdc, Qsc?	Bird Mountain Lemei Rock undetermined	Gray olivine basalt; dense; blocky; 10-100 ft.	10-350
5000-	**King Mountain Fissure Zone**				
7040-	Trout Lake Modflow (Hopkins, 1972)				
	Smith Butte	Qsb		Gray olivine basalt; vesicular to dense; scoriaceous, as lava flow; 10-150 ft. (Hopkins, 1972)	10-150
10,000-					
	Potato Hill	Qph		Dark gray olivine basalt; vesicular; scoriaceous; blocky; 10-30 ft.	10-30
15,000-					
	Walupt Lake	Qwl	Walupt Lake volcano	Dark gray, olivine basalt; dense; blocky; 10-30ft.	10-100
	FRASER GLACIATION				
20,000-	LASCHAMP REVERSED				
25,000-	EPOCH				
30,000-					
	Swampy Meadows	Qsm	beneath Mt. Adams	Gray, olivine basalt, vesicular to dense; blocky; 10-30 ft.	10-150
	Hill 5162	Q62		Gray olivine basalt, vesicular to dense; blocky; 10-30 ft.	10-200
	Quigley Butte	Qqb		Gray olivine basalt, dense; blocky; 10-20 ft. (Sheppard, 1964)	10-250
	Lakeview Mountain	Qlm		Gray hypersthene-olivine-plagioclase basalt, fine; phyric, dense; slabby to blocky; 10-30 ft.	10-150
	Two Lakes	Qtl	Two Lakes volcano	Gray phyric olivine (10%)-plagioclase laths (15%) basalt; platy to blocky; 10-40 ft.	10-100
35,000-					
	SALMON SPRINGS GLACIATION				
50,000-					
100,000-					
	Camas Prairie	Qcp	King Mtn.	Gray porphyritic olivine (15%)-plagioclase (15%) basalt, vesicular to dense; scoriaceous; blocky; 3-30 ft. (Sheppard, 1964)	5-300
	County Park	Qcpk	beneath King Mountain (?)	Gray olivine basalt, vesicular to dense; scoriaceous; blocky; 3-15 ft. (Hopkins, 1972)	5-40

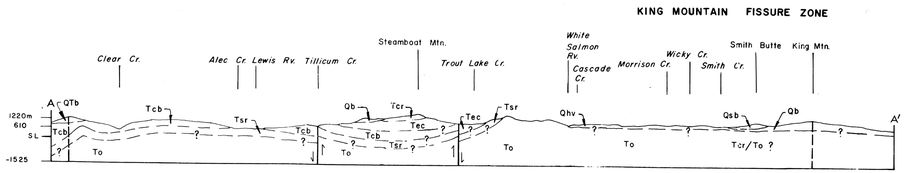
Canal cut and fill at Camas Prairie

NOTE: This map is a revision of PLATE 2 and includes data gathered during the 1973 and 1974 field seasons in addition to the earlier data.

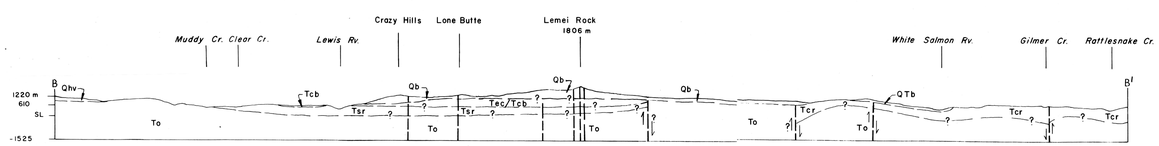
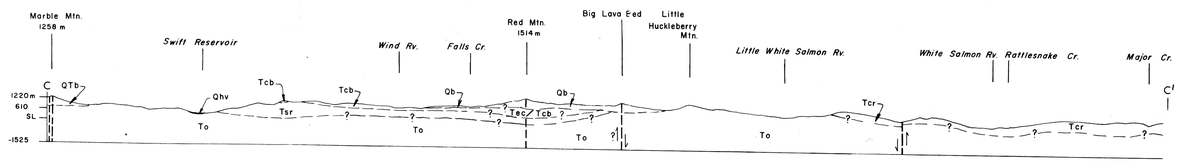
CROSS-SECTIONS OF QUATERNARY BASALT FIELD, SOUTHERN CASCADE RANGE, WASHINGTON

For explanation of symbols see Table

KING MOUNTAIN FISSURE ZONE



INDIAN HEAVEN FISSURE ZONE



INDIAN HEAVEN FISSURE ZONE