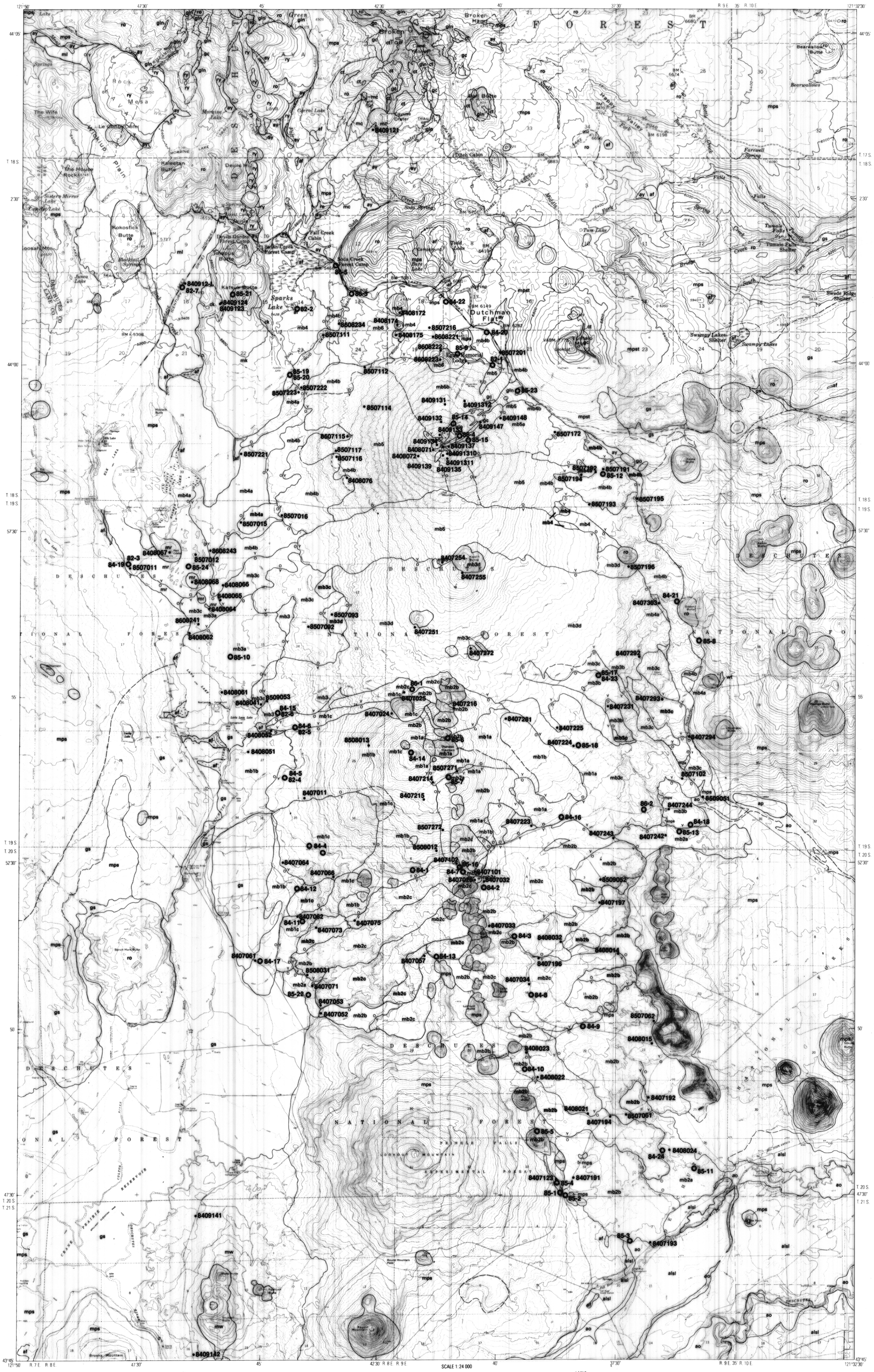
U.S.DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN FILE REPORT 94-261
PLATE 1



The purpose of this map is to show locations for analyzed petrologic (filled circles) and paleomagnetic (star) samples. The base geology is from Scott and Gardner (1992) and is shown here to aid in correlating sample data with geologic map units. Brief descriptors of the map units are given below with more detailed descriptions given in Scott and Gardner (1992). Figure 2 in the text is a simplified geologic map of the Mount Bachelor volcanic chain and as such some of the map unit designations are different.

The division between basalt (SiO_2<52 weight percent) and basaltic andesite (SiO_2 >52<57 weight percent) is after LaBas and others (1986). In addition samples from the upper cone of Mount Bacelor and Tot Mountain are informally termed as high-silica basaltic andesite (SiO_2 >55<57 weight percent).

The nomenclature of several informal chronostratigraphic units used to describe deposits is after Scott and Gardner (1992). Informal subdivisions of the Pleistocene Series are upper, middle, and lower Pleistocene. Upper Pleistocene deposits range in age from 125 ka to 10 ka; middle Pleistocene from 125 ka to 750 ka; and lower Pleistocene from 1.8 Ma to 750 ka. The Holocene Series is informally divided into upper Holocene 6,850 yr B. P. (age of Mazama ash) to present, and lower Holocene, 10 ka to 6,850 yr B.P.

GLACIAL DEPOSITS

gln - Drift of late Neoglacial age (upper Holocene)

gen - Drift of early Neoglaical age (upper Holocene)

gc - Drift of Canyon Creek advance (Scott, 1977) (upper Pleistocene)

gs - Glacial deposits of the Suttle Lake advance (of the Cabot Creek glaciation of Scott, 1977) (upper Pleistocene).

go - Older till (upper or middle Pleistocene)

VOLCANIC DEPOSITS

mb6 - Basalt and basaltic andesite lava flows and scorica cone of Egan cone (lower Holocene and upper Pleistocene)

mb5 - High-silica basaltic andesite products of the Mount Bachelor summit cone and Tot Mountain (lower Holocene? and upper Pleistocene)

mb5b - High-silica basaltic-andesite products of the summit cone of Mount Bachelor postdating glacial deposits of the Canyon Creek advance (lower Holocene? and upper Pleistocene)

mb5a - High silica basaltic-andesite products of the Mount Bachelor summit cone predating glacial deposits of the Canyon Creek advance (upper Pleistocene)

mb4 - Basalt and basaltic-andesite lava flows of the sheild volcano of Mount Bachelor, undivided (upper Pleistocene)

mb4b - Basalt and basaltic-andesite lava flows of the shield volcano intermediate in age between mb4a and and mb5 (upper Pleistocene)

mb4a - Basalt lava flows that form the lower part of the Mount Bachelor sheild

mb3 - Basalt and basaltic-andesite products of Kwohl Butte, undivided (upper Pleistocene)

mb3d - Youngest basaltic-andesite products of Kwohl Butte (upper Pleistocene)

mb3c - Basalt lava flows and cones of Kwohl Butte (upper Pleistocene)

mb3b - Porphyritic coarse plagioclase (grains to 10 mm) basaltic-andesite lava flows (upper Pleistocene)

mb3a - Porphyritic fine plagioclase basalt lava flows of Lava Lake (upper Pleistocene)

mb2c - Youngest olivine and plagioclase basalt lava flows and tephra deposits from the Siah chain of cones (upper Pleistocene)

mb2b - Intermediate-age olivine basalt lava flows and tephra deposits from the Siah chain of cones and and from a pit crater on the south side of Sheridan Mountain (upper Pleistocene)

mb2a - Oldest olivine and plagioclase basalt lava flows for the Siah chain of cones (upper Pleistocene)

mb1c - Youngest nonporphyritic and coarse-grained plagioclase porphyritic (up to 10 mm) basaltic andesite lava flows of the Sheridan segment (upper Pleistocene)

mb1b - Intermediate aged basaltic-andesite lava flows and tephra deposits of the Sheridan segment (upper Pleistocene)

mb1a - Oldest basaltic andesite lava flows and tephra deposits of the Sheridan segment (upper Pleistocene)

ml - Basaltic andesite of Le Conte Crater (lower Holocene or upper Pleistocene)

mc - Basalt of Cayuse Crater (lower Holocene or upper Pleistocene)

mw - Basalt of Wuksi Butte (upper Pleistocene)

mk - Basalt of Katsuk and Talapus Buttes (upper Pleistocene)

mr - Basalt of the Red Crater chain of cones (upper Pleistocene)

mps - Basalt to andesite volcanic rocks of pre-Suttle Lake age, undivided (upper, middle, and lower Pleistocene)

mpst - Basaltic andesite of Tumalo Muntain (upper Pleistocene)

ro - Older rhyolite and dacite deposits (upper, middle, and lower? Pleistocene)

wt - Welded tuff (upper Pleistocene)

ALLUVIAL, LACUSTRINE, AND COLLUVIAL DEPOSITS

ay - Younger alluvium (upper Holocene)

af - Fine-grained alluvial, lacustrine, and marsh deposits (Holocene and upper Pleistocene)

ao - Older alluvium (upper Pleistocene)

ap - Pumiceous alluvium of Kuamaksi Butte (upper Pleistocene)

alsl - Alluvial and lacustrine sediments of Shukash and Lapine basins of Couch and Foote (1985) (middle and lower? Pleistocene)

ct - Talus deposits (Holocene and upper Pleistocene)

ck - Slump deposits of Katsuk and Talapus Buttes area (upper Pleistocene)

SYMBOLS

● - location of petrologic samples

★ - location of paleomagnetic sites

Y / O — **Contact**—Dashed where approximately located or gradational; contacts within single map unit represent boundaries between individual lava flows or between overlapping scoria cones. Symbols Y and O along contacts denote younger and older units, respectively

Fault—Ball and bar on downthrown side

Base from U.S. Geological Survey, 1:24,000: Bachelor Butte, Crane Prairie Reservoir, Elk Lake, Pistol Butte, Round Mountain, Wanoga Butte, 1963 (photorevised, 1981); 1:62,500: Broken Top, Three Sisters, 1959

APPROXIMATE MEAN DECLINATION, 1992

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

OREGON
AREA OF MAP

Geology mapped in 1983-84 by W.E. Scott and C.A. Gardner; geology compiled in 1985 by W. E. Scott; field checked in 1985-86 by W. E. Scott and C. A. Gardner.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

PALEOMAGNETIC AND PETROLOGIC SAMPLE LOCATION MAP FOR THE MOUNT BACHELOR VOLCANIC CHAIN, CASCADES RANGE, OREGON

By

Cynthia A. Gardner
1994