U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
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Plate 1 of 2

122°30'

122°45'

38°30'

38°15'

CAS 58003
USGS M4230
LACMIP 11776
CAS 545, 546, 54166, 54680, 58002, 60783
LACM 4509, 15341
UCMP 7033, A863-A865, D3235-D3238
USGS M4513
Wilson Grove
USGS JA072901A
CAS 40980, 54164, 54165, 55979, 59657, 60223-60225
LACMIP 2378, 11778
UCMP D3382(?)
UCD 281a
USGS M2806
River Road
Trenton Fault
CAS 55978
LACM 11777
Healdsburg fault zone
CAS 55981-55982
Mt Jackson Fault
UCMP 6892
Santa Rosa
UCMP 7025
CAS 60461-60463
CAS 60464
CAS 31273
Sebastopol
Bennett Valley
V5230
USGS JA100501A
USGS E-14
CAS 413, 55976, 60305-60312, 60314
LACM 11775
UCMP A869, B4668, B8027
USGS M4231
Salmon Creek
Sebastopol Fault
Rodgers Creek fault zone
CAS 60468-60470
UCMP D5919
UCMP A6895
UCMP D5919
Ebabias Creek
Hill 724
UCMP B2762
Bodega
CAS 60466
CAS 54135, 54136, 57867
UCMP D3224
CAS 59666
CAS 59667
Bloomfield Quarry
Tremary Ranch
CAS 59671
CAS 59668
CAS 55967, 55969
CAS 60472
Cotati
CAS 60467
UCMP D3079, D3355
CAS 60474-60479
Steinbeck Ranch
Roblar Road
USGS M4232
Valley Ford
UCMP A866, A867, A868
CAS 60480-60482
CAS 54138, 55970, 55973, 60484-60487, 60489
UCD 271a, UCD 271b
USGS M4287, M5845
CAS 425(?), 59826, 59827
Pacific Ocean
San Andreas fault zone
Bloomfield fault
UCMP A870(?)
UCMP A4189
Meacham Hill
Americano Creek fault
USGS JA-A
CAS 60750, 60765, 60819
USGS M4511
USGS JA-E
Middle Road
LACMIP 11776
CAS 59808-59810,
UCMP 10753(?), 10755, A6886, A6894, D3385
USGS M4233
CAS 59833
CAS 59832
UCMP 10756
LACMIP 11774
Whitaker Bluff and vicinity
(Estero San Antonio)
CAS 60226
UCMP 10757
UCMP 10754
UCMP 10758
BH70-F28(?)
UCMP A873
CAS 60471(?)
The Elephants
UCMP B4299
Tomales
USGS P-4
Petaluma
USGS JA-C
USGS CP072003A, JA-D
Spring Hill

Map area
California
Location Map

Scale 1: 53,360
0 5 Miles
0 5 Kilometers

N

DESCRIPTION OF MAP UNITS

Miocene-late Pliocene

Wilson Grove Formation: Thickly- to hummocky cross-stratified, marine sandstone. Contains interbedded, coarse-grained facies in the southwest near Dillon Beach, Tomales, and Valley Ford. Also interbedded conglomerate along the hills that border the Santa Rosa and Cotati valleys (orange). The late Miocene Roblar tuff of Sarna-Wojcicki (1992) (blue line; dashed where approximately located) occurs northwest of the Bloomfield Fault.

Area of interbedded marine sandstone and and non-marine conglomerate. Conglomerate clasts are derived from the Franciscan Complex at the base and Monterey Group at top of section. Contains a Roblar tuff (blue line) near the middle of the section (Allen, 2003).

Petaluma Formation: Consists of estuarine and lacustrine lower shale, a middle, fluvial, Franciscan Complex clast conglomerate facies, and an upper, fluvial, Monterey clast conglomerate facies. Also contains Roblar tuff (blue line) of Sarna-Wojcicki (1992). A thin, marine bed crops out within close proximity to Monterey Group clast conglomerate beds in Bennett Valley, both of which are stratigraphically below a Blancan vertebrate fossil locality (UCMP V5230).

EXPLANATION

- A–A': Line of section (see Plate 2). Sections based on individual U.S.G.S. 7.5' topographic quadrangle maps which include: Cotati, Camp Meeker, Glen Ellen, Guerneville, Healdsburg, Petaluma, Point Reyes NE, Sebastopol, Two Rock and Valley Ford.
- Fault; dashed where inferred. "U" for up-thrown block, "D" for down-dropped block. Arrow shows direction and attitude of fault plane. Dashed where inferred. "?" where querried. Saw teeth show upper plate of reverse or thrust fault; arrows indicate direction of movement.
- 10: Strike and dip of beds.
- Anticline, arrow at tip shows plunge direction.
- Syncline, arrow at tip shows plunge direction.
- Geologic contact approximately located
- Borehole data from ground water exploration (Eugene Boudreau, consulting geologist, written comm., 2002)
- Borehole data from Well 02, Sebastopol (web site- http://www.dhs.cahwnet.gov/ps/ddwem/dwsap/dwsapdemos/sebastopolwell2assessment.pdf)
- Borehole data from Cardwell (1958). Near town of Bloomfield.

DESCRIPTION OF FOSSIL LOCALITIES

- Late Pliocene fossil locality
- Pliocene and inferred Pliocene fossil locality
- Late Miocene fossil locality at Spring Hill; Inferred Late Miocene fossil localities (not age-diagnostic, below the late Miocene Roblar tuff of Sarna-Wojcicki (1992)
- Fossil locality not precisely located

CAS: California Academy of Sciences, San Francisco, CA.
LACM: Invertebrate Paleontology section, Los Angeles County Museum of Natural History, Los Angeles, CA.
UCMP: Museum of Paleontology, University of California, Berkeley, CA.
UCD: University of California, Davis, CA.
USGS M: U.S. Geological Survey, Menlo Park Register (now at UCMP)
Note: Locality data for the following localities was not detailed enough to allow plotting on the map above:
CAS 439, 569, 630, 633-640, 34313, 34401, 36447, 60934, 60937; **LACM** 3614; **UCMP** A4189, A4190, A6890, A6893, B5543, D3382

PLATE 1. Fossil localities, location of cross sections, and locality names (in red) used in text. Outcrop area of the Wilson Grove Formation and Petaluma Formation is approximate and after Johnson (1934), Weaver (1949), Travis (1952), Fox et al. (1973), Department of Water Resources (1979), Bedrossian (1981), Wagner and Bortugno (1982), Blake and others (2002), and Allen (2003).