

GEOLOGIC AND GEOMORPHIC MAP
OF THE
EASTERN SANTA BARBARA FOLD BELT,
SANTA BARBARA, CALIFORNIA

By
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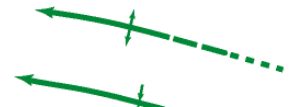
Dissertation Map 2 of 2 (rev. 2025)

Ph.D. Committee: Edward A. Keller, Ralph Archuleta, and Cathy Busby

EXPLANATION



Oblique-slip fault, location exposed or known, approximate, inferred or concealed (blind); reverse left-lateral, motion arrow indicates dip direction; arrow indicates average bearing and rake of slickenlines of hanging wall block slip direction



Anticline, plunge direction indicated



Syncline, plunge direction indicated



Marine terrace landform; marine terrace shoreline or strandline indicated by solid blue line, location approximate where dashed



Inferred or concealed marine terrace shoreline



Modern stream



Defeated stream



Historic estuary



Alluvial fan terrace deposit



Landslide deposit



Air gap



Water gap



Surface warp, inferred where dashed; filled arrows indicate surface drainage direction, open arrows indicate backtilted surface



21Ne sample site number 5



Optical stimulated luminescence sample site number 5



Uranium-series sample site number 2

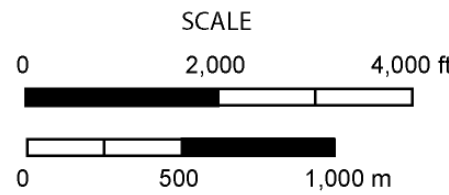
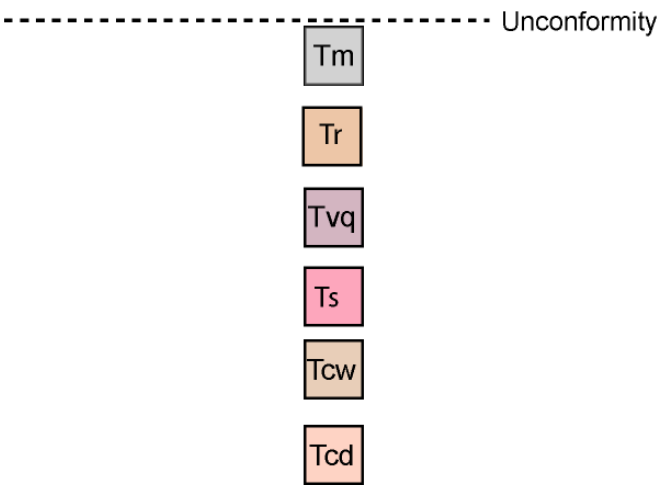
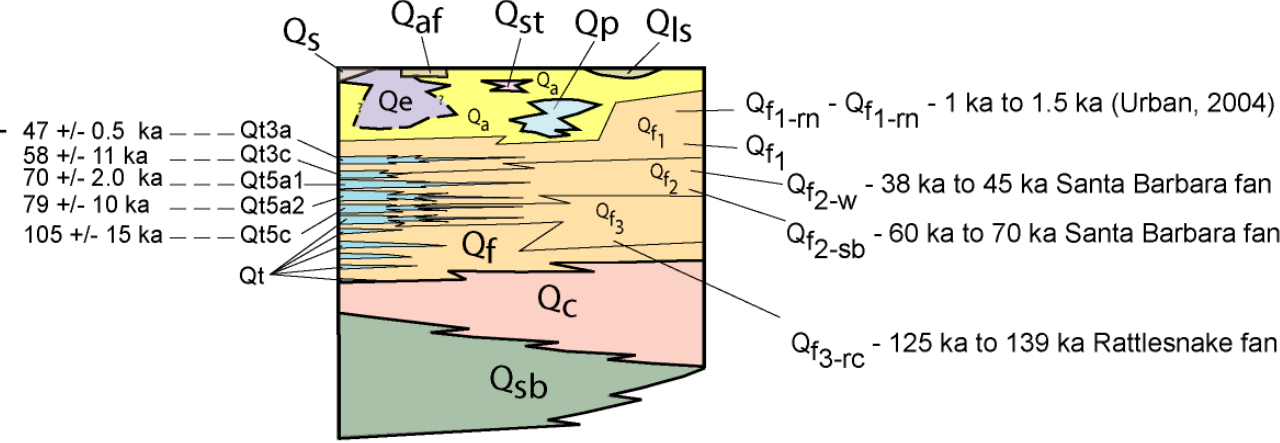


Radiocarbon sample site number 5

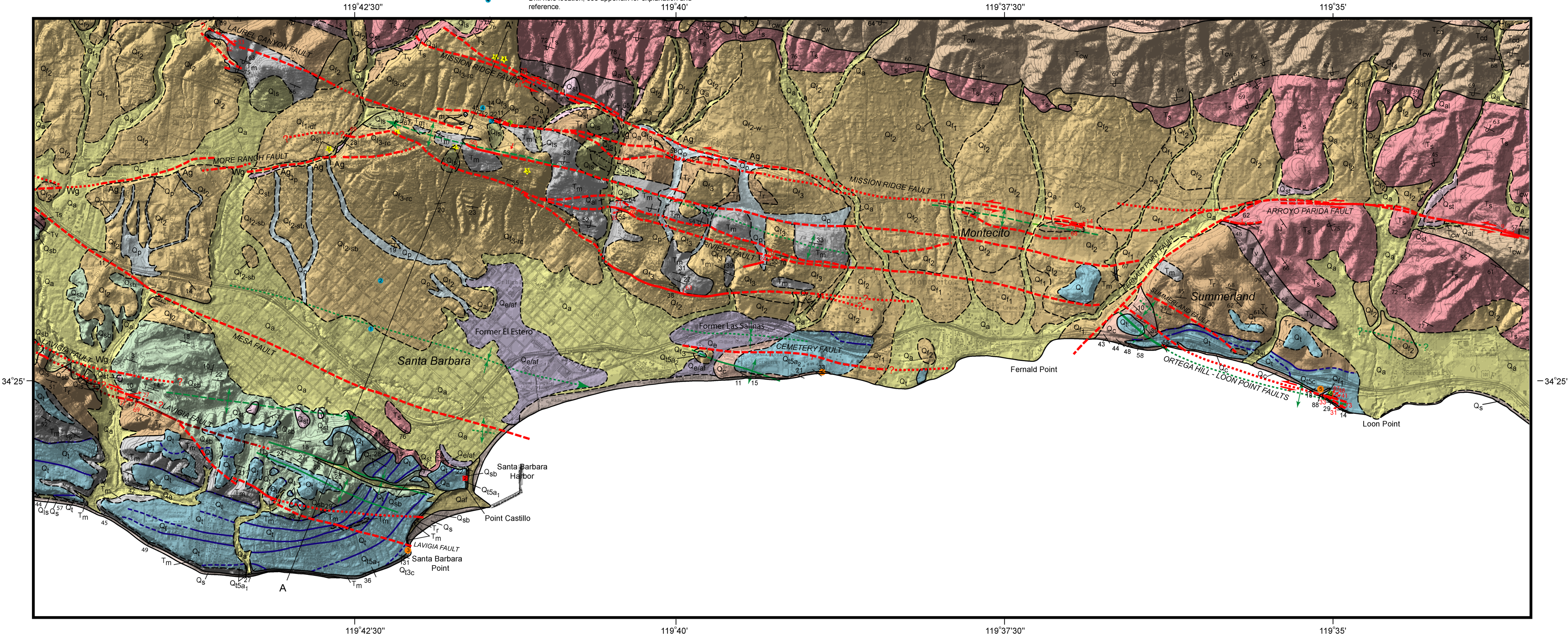


Drill hole location, see appendix for explanation and reference

Quaternary
Pleistocene
Holocene
Tertiary
Oligocene
Miocene
Eocene



- Qaf: Artificial fill
Qs: Beach Sand - Unconsolidated marine and aeolian beach sand.
Qst: Stream Terrace Deposits - Commonly gravels, sands, and silts with minor clay interbeds.
Qa: Alluvium - Undifferentiated alluvial, stream channel, and floodplain deposits composed of silty sands to sandy gravels.
Qe: Estuarine Deposits - Commonly estuarine silts and clays with sand interbeds and lenses.
Qls: Landslide Deposits - Landslide deposits includes reworked bedrock and soil units.
Qtsa: Marine Terrace Deposits - Second marine terrace associated with oxygen isotope substage 5a with Qtsa1 indicating youngest terrace associated with stage 5a, Qt denotes marine terrace deposit of unknown age, medial to nearshore marine sands with aeolian silts.
Qf3: Alluvial fan and fan terrace deposits - Third alluvial fan terrace indicating relative age with 1 indicating youngest terrace deposit based on stratigraphic position, relative amount of incision, and established chronology. Commonly dissected fan surfaces composed of grave to cobble to boulder conglomerates in a clayey silty sand matrix to sandy silts and silty clays.
Quaternary alluvial fan terrace deposits that are not age-dated are correlated to regional aggradation events identified by Bull (1991):
Qf1 - Probable age of latest Pleistocene to Holocene
Qf2 - Probable age of 60 ka to 100 ka
Qf3 - Probable age of 100 ka to 139 ka
Qp: Paleofluvial deposits - Undifferentiated paleostream channel and terrace deposits consisting of boulder to gravel conglomerates within a silty sand matrix.
Qc: Casitas Formation - Alluvial deposits composed primarily of gravel, cobble, and boulder conglomerates with minor sand and clay interbeds. Basal section of nearshore to proximal marine sands with minor gravel to cobble conglomerates.
Qsb: Santa Barbara Formation - Nearshore to distal marine sands with gravel to cobble conglomerates, fossiliferous limestone and silt interbeds, minor clay interbeds.
Tm: Monterey Formation - Undifferentiated diatomaceous, calcareous, and silicious shale with minor sandstone and volcanic ash deposits.
Tr: Rincon Formation - Diatomaceous shale with thin beds of volcanic ash deposits with minor sandstone deposits.
Tvq: Vaqueros Formation - Sandstone with siltstone and shale interbeds.
Ts: Sespe Formation - Undifferentiated gravel conglomerate, sandstone, and shale deposits.
Tcw: Coldwater Formation - Primarily sandstone with minor shale interbeds.
Tcd: Cozy Dell Formation - Primarily shale with minor sandstone interbeds.



Base Maps: United States Geological Survey 1952, rev. 1988, Santa Barbara, California, 1:24,000 and 1952, rev. 1988, Carpinteria, California 7.5' Quadrangles, 1:24,000.
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