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

SCIENTIFIC INVESTIGATIONS MAP 3001
Pamphlet accompanies map

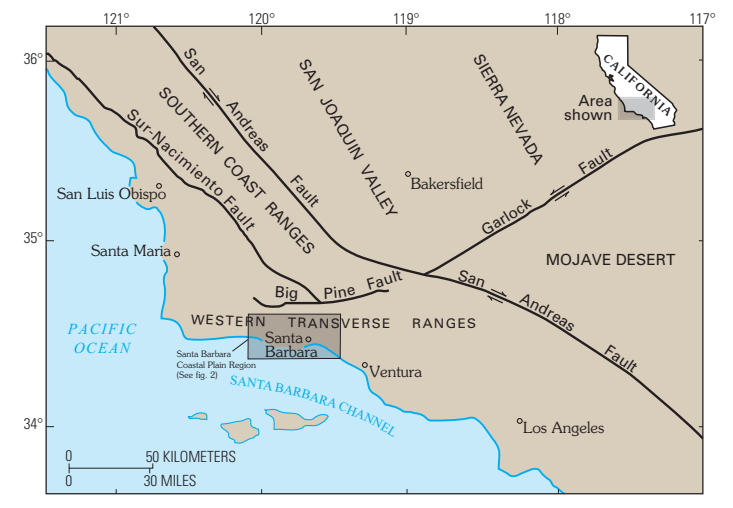

Figure 1. Generalized index map of the southwestern part of California showing the location of the Santa Barbara coastal plain region and nearby major tectonic faults.

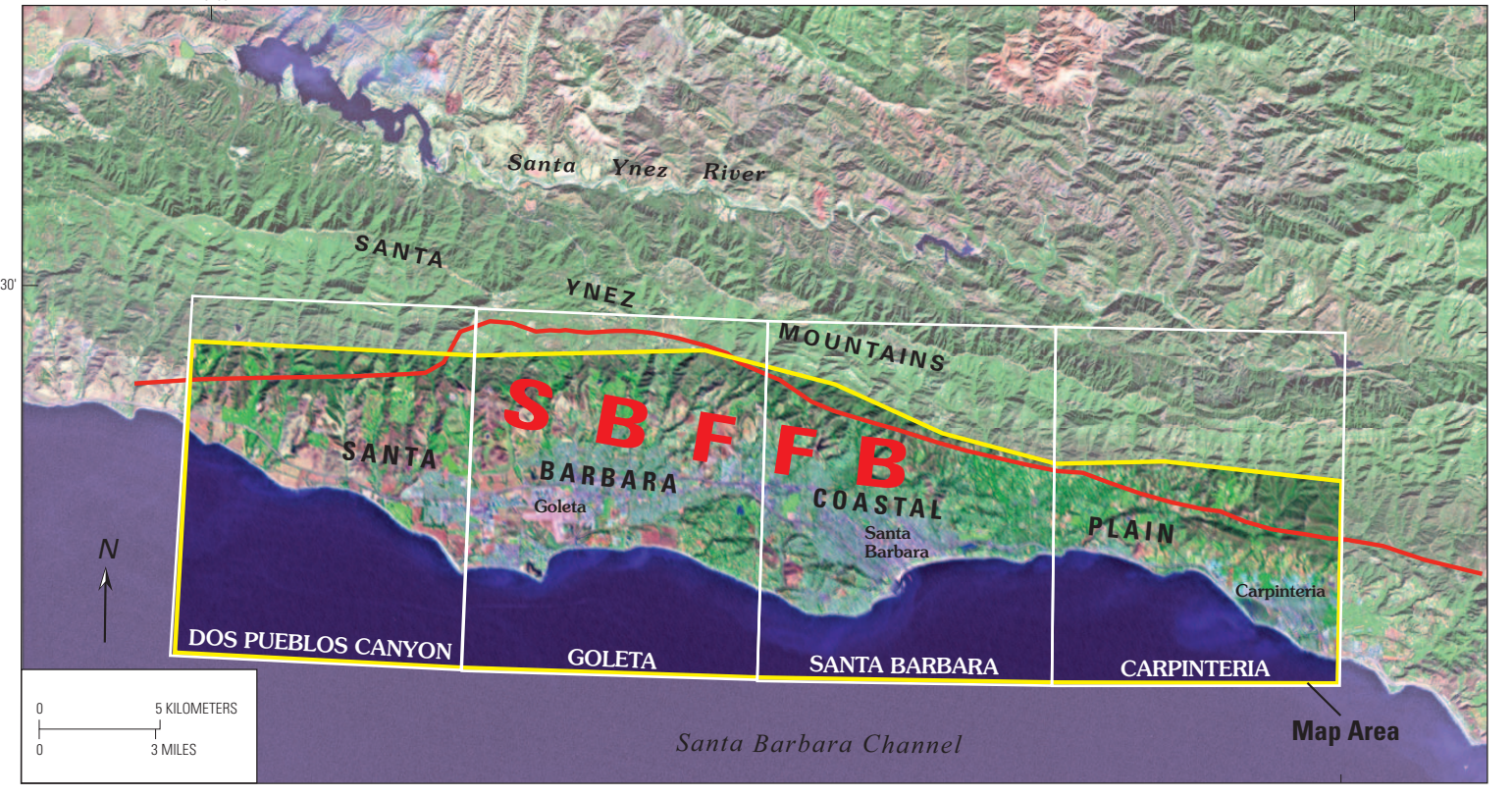

Figure 2. Landsat 7 image of Santa Barbara coastal plain region showing location of map area (yellow border) within the component 7.5' quadrangles (white rectangles). Approximate northern boundary of Santa Barbara fold and fault belt (SBFFB) is shown by red line.

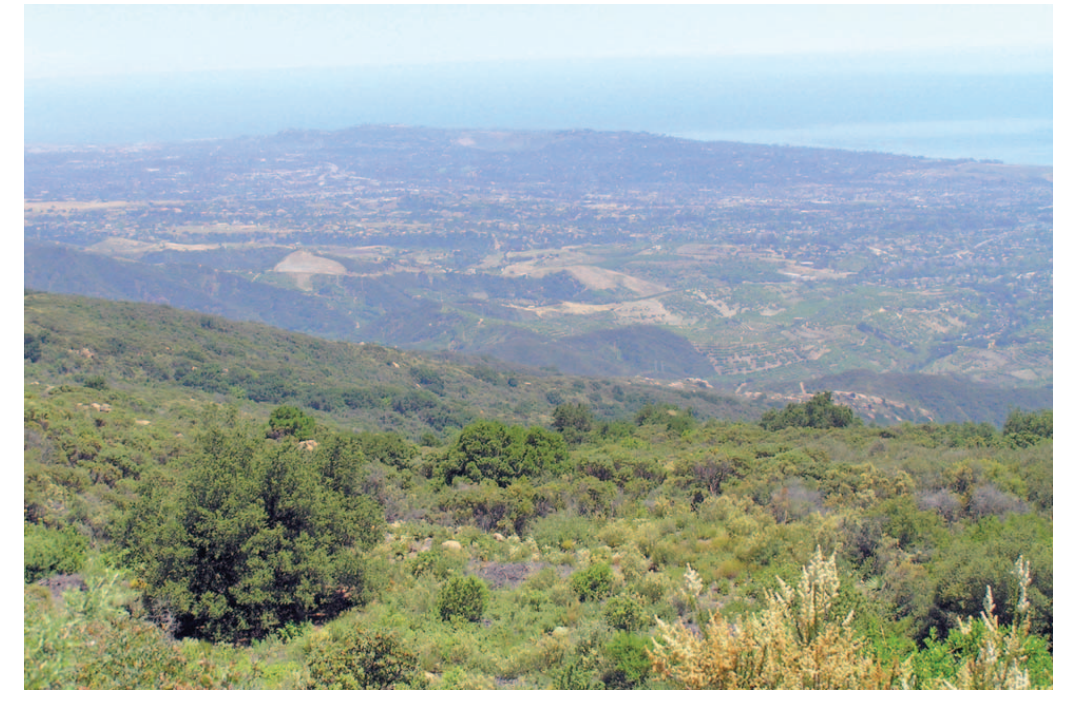

Figure 3. View, looking southeast from crest of the Santa Ynez Mountains, of low hills and intervening lowlands forming the central part of the Santa Barbara coastal plain. City of Santa Barbara is in left center part of photograph and easternmost Goleta is in right center. The broad low coastal hills in upper-center part of photo are bounded on their northern (inland) sides by the intersecting Mesa and More Ranch reverse-oblique fault systems, which accommodated Quaternary uplift of the coastal area. The Santa Ynez foothills that span across the middle part of photograph and the steeper mountain flank in the foreground are underlain by moderately south-dipping Tertiary sedimentary rocks cut by numerous northwest-striking faults.

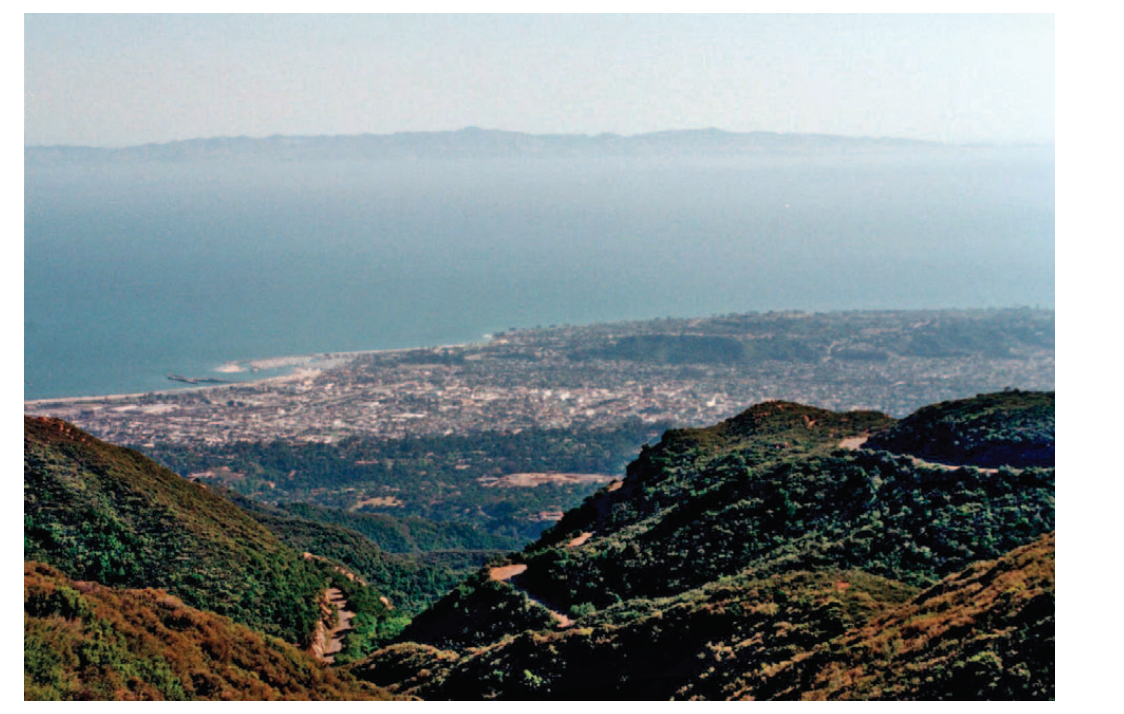

Figure 4. View, looking southwest from flank of Santa Ynez Mountains, of downtown Santa Barbara (white buildings) situated on the central part of the Santa Barbara coastal plain. Santa Barbara Channel lies between the mainland and Santa Cruz Island, visible on the horizon. Several features of the Quaternary Santa Barbara fold and fault belt are visible in photograph. The concealed Mesa fault lies along the base of "La Mesa" coastal hills just beyond downtown in right center part of photograph. The lower wooded area between downtown and the base of the Santa Ynez mountain flank is Mission Ridge, a complexly faulted anticlinal upwarp that has deformed Pleistocene alluvial deposits (Qoa). The Santa Ynez mountain flank in the foreground is underlain by a steeply overturned homocline of Tertiary sedimentary rocks.

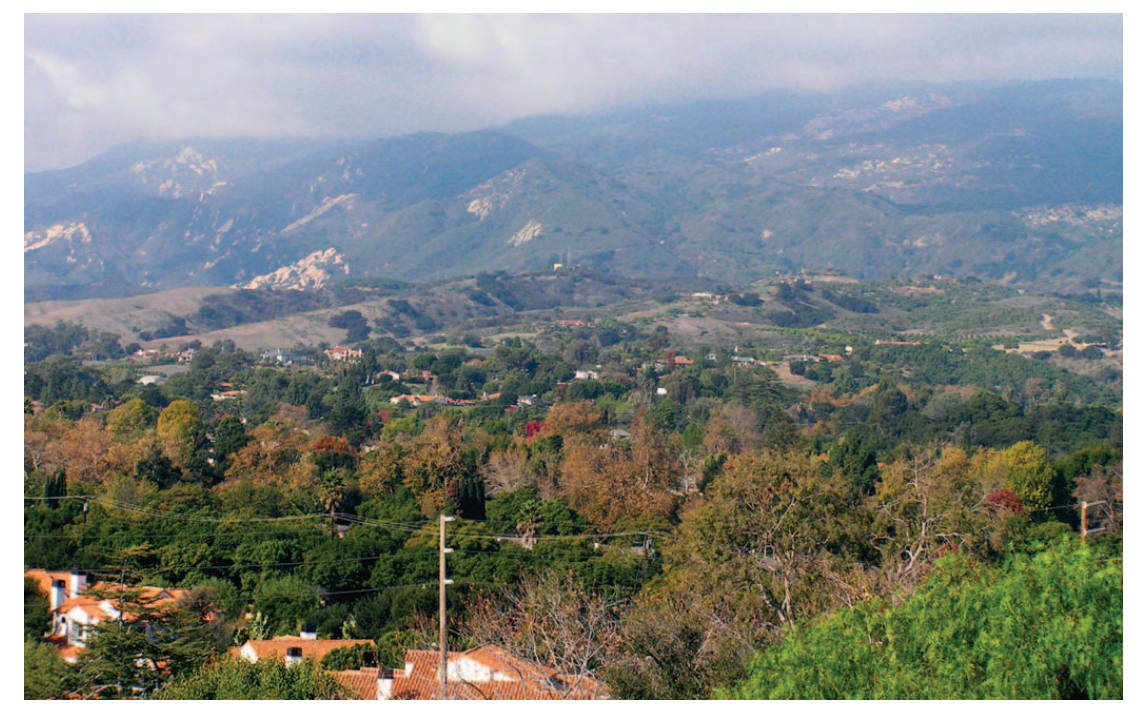

Figure 5. View, looking northwest from Goleta Valley, of steep southern flank (far distance) and foothills (middle distance) of the Santa Ynez Mountains. Sandstone hogbacks visible on mountain flank in distance consist of moderately to steeply south-dipping panels of Eocene Coldwater Sandstone (Tcw) and lower Sespe Formation (Tspl) cut by several large northwest-striking faults that have had a varied and complex Neogene and Quaternary slip history. Note that many low ridges in foothills are capped by flat-lying geomorphic surfaces at one or more distinct elevations. These surfaces may represent relict older Pleistocene(?) uplifted alluvial or marine terraces.

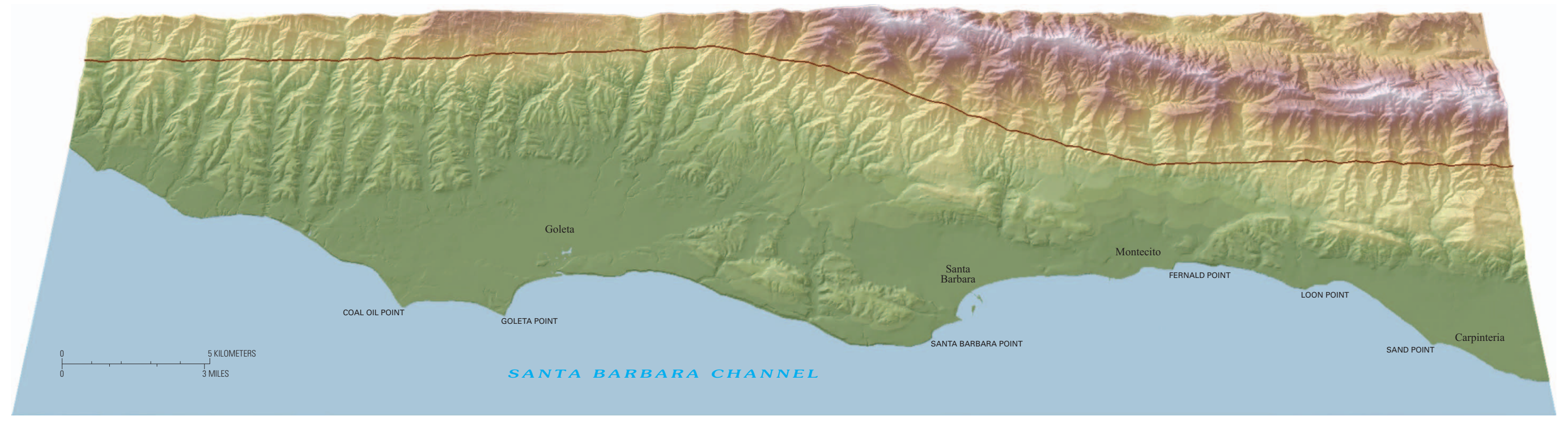

Figure 6. Digital Elevation Model (DEM) shaded-relief image of the Santa Barbara coastal plain map area as viewed from the south and illuminated from northwest. Northern boundary of geologic map area shown by brown line. Hypsometric tint, 3-dimensional model elevation, and shaded-relief values derived from U.S. Geological Survey National Elevation Dataset (NED) 10-meter resolution elevation data, 2005.

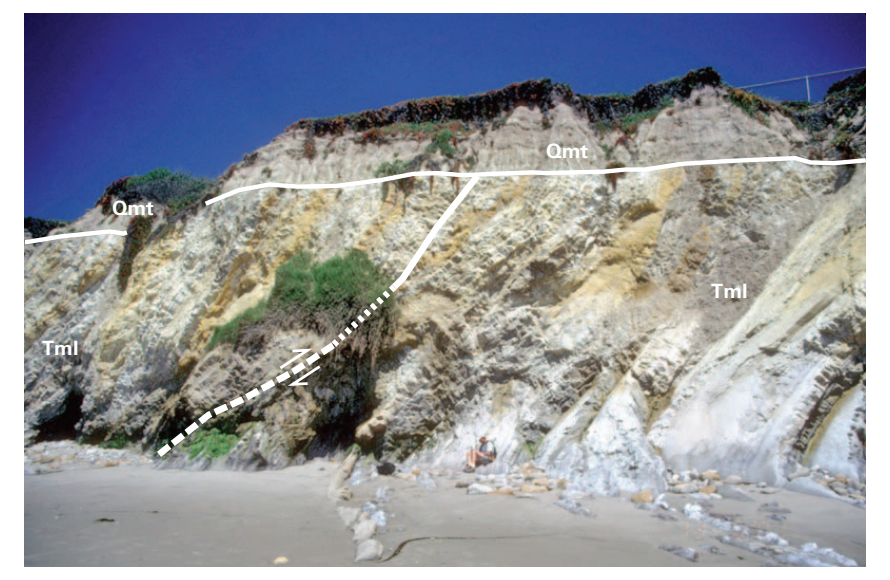

Figure 7. Seacliff exposure near Santa Barbara Point, looking northwest, of southwest- (left-) dipping, calcareous and siliceous shale of the lower unit of the Miocene Monterey Formation (Tml), which in turn is unconformably overlain by flat-lying, upper Pleistocene (~58-ka) marine-terrace sand and gravel (Qmt). The Monterey rocks here contain calcareous nannofossils of the early middle Miocene zone CN 4 (lower middle Miocene) and benthic foraminiferal assemblages indicative of the upper Saucesian and (or) Relizian benthic foraminiferal stages and deposition at water depths of 1,500–4,000 m. Oblique-slip and contractional deformation recorded in the Monterey rocks in the sea cliffs near Santa Barbara, including the northwest-striking reverse fault (highlighted) and southwest stratal tilts visible in photograph, and numerous northwest-trending folds and faults exposed nearby, provide evidence of a protracted episode of late Miocene(?) through Pleistocene transpression in the region.

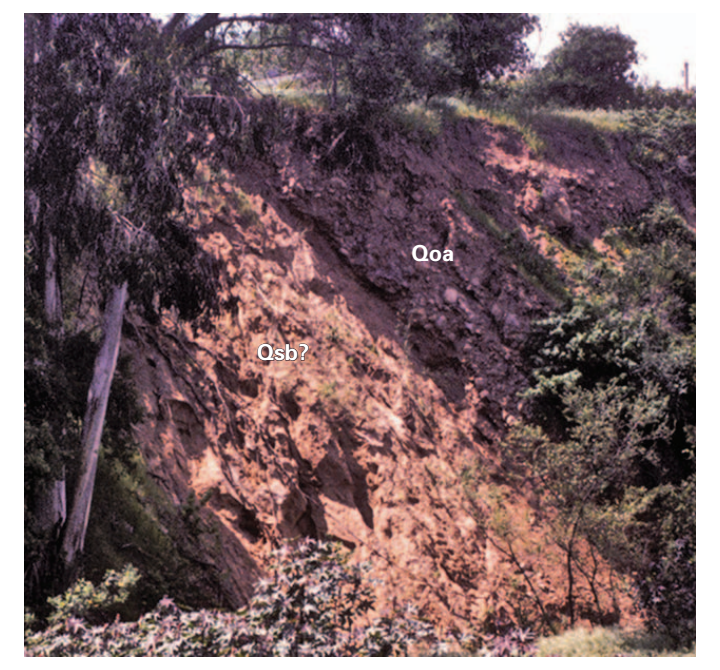

Figure 10. View, looking northwest, of moderately (33–55°) northeast-dipping Pleistocene sediments exposed in large cut bank of Maria Ygnacio Creek just south of Cathedral Oaks Road in northern Goleta Valley. Tan rocks on left (in sunlight) are bedded sandstones (locally conglomeratic), siltstones, and mudstones that are overlain with little or no angular discordance by less-resistant, locally derived alluvial gravel and sand deposits (Qoa) (in shadow). Tan rocks are either in depositional or fault contact with marine rocks of the middle to lower Pleistocene Santa Barbara Formation (Qsb) exposed just out of view of photo to left. Rocks in view thus may represent an uppermost Santa Barbara section that is transitional into the nonmarine alluvial deposits (Qoa), or they may be a western outlier of the nonmarine Casitas Formation (Qca). In either case, such fine-to-coarse, marine-to-nonmarine, clastic sequences observed throughout the coastal plain area are inferred to record middle to late Pleistocene uplift and erosion of the Santa Ynez Mountains and concomitant encroachment of shed alluvial detritus into a retreating marine basin. Width of view ~2 meters.

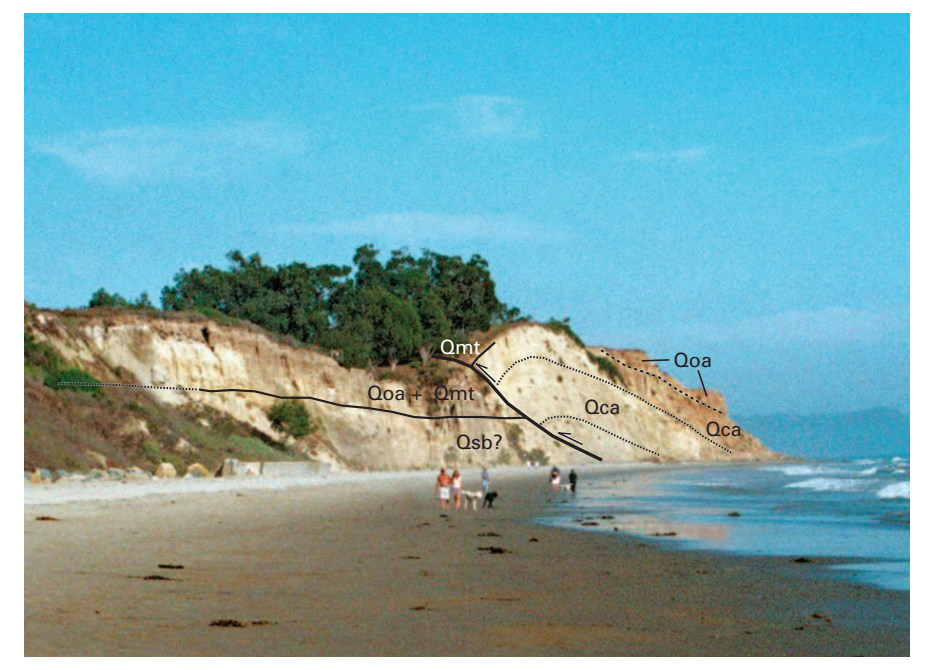

Figure 8. View, looking east, of young oblique-reverse fault exposed in sea cliff at Loon Point (between Montecito and Carpinteria) that thrusts Pleistocene terrestrial deposits of the Casitas Formation (map unit Qca) and overlying older alluvial (Qoa) and ~105-ka marine-terrace deposits (Qmt) over Pleistocene probable Santa Barbara Formation marine deposits (Qsb?) and overlying Qoa and Qmt deposits. Note that strata in hanging-wall block on south (right) side of fault are folded into a north-vergent anticline that is geomorphically expressed onshore as a small, elongated hill (area of tall *Eucalyptus* trees). The Santa Barbara coastal plain includes several northwest-trending mesas and hills that are similarly underlain by young anticlinal upwarps and partly buried oblique and reverse faults of the potentially active Santa Barbara fold and fault belt.

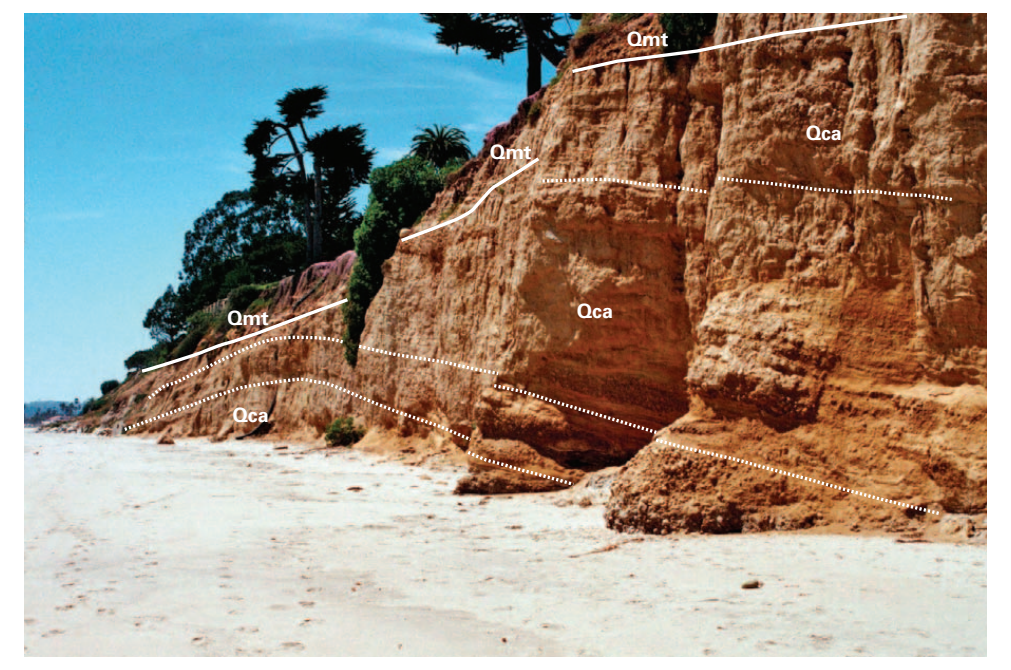

Figure 9. View looking northwest along trend of a young south-vergent anticline exposed in sea cliff below the Santa Barbara Cemetery just east of downtown Santa Barbara. Anticline, expressed here by gently northeast (right)-dipping and steeper southwest (left)-dipping nonmarine strata of the Pleistocene Casitas Formation (Qca), is coincident with broad hill cut by sea cliff (area of tall trees) and with smaller hill to northwest at the Santa Barbara Zoo. Flat-lying, fossiliferous, ~80-ka marine-terrace (Qmt) and overlying alluvial deposits near top of cliff, which unconformably overlie the folded Casitas with angular discordance in area of photo, are themselves gently upwarped across anticline as evidenced by their gradual decrease in elevation in sea cliff to east (right) of view. Numerous small-displacement, northerly striking, subvertical faults cut Casitas beds here.

EXPLANATION

[Note: Some fault and fold segments shown on structure map are concealed by upper Pleistocene and Holocene deposits]

Fault—Queried where uncertain; ball on downthrown side, indicating older normal slip; opposing arrows indicate sense of younger strike-slip component of movement

Fault—Exhibits reverse component of slip; boxes on upthrown side

Fault—Displacing Quaternary deposits; queried where uncertain; opposing arrows indicate sense of strike-slip component of movement

Fault—Displacing Quaternary deposits with reverse component of slip; boxes on upthrown side

Fault—Displacing Quaternary deposits with thrust component of slip; sawteeth on upthrown side

Anticline

Syncline

Anticline, overturned

Syncline, overturned

Upwarp or anticline—mapped in Quaternary deposits

Downwarp or syncline—mapped in Quaternary deposits

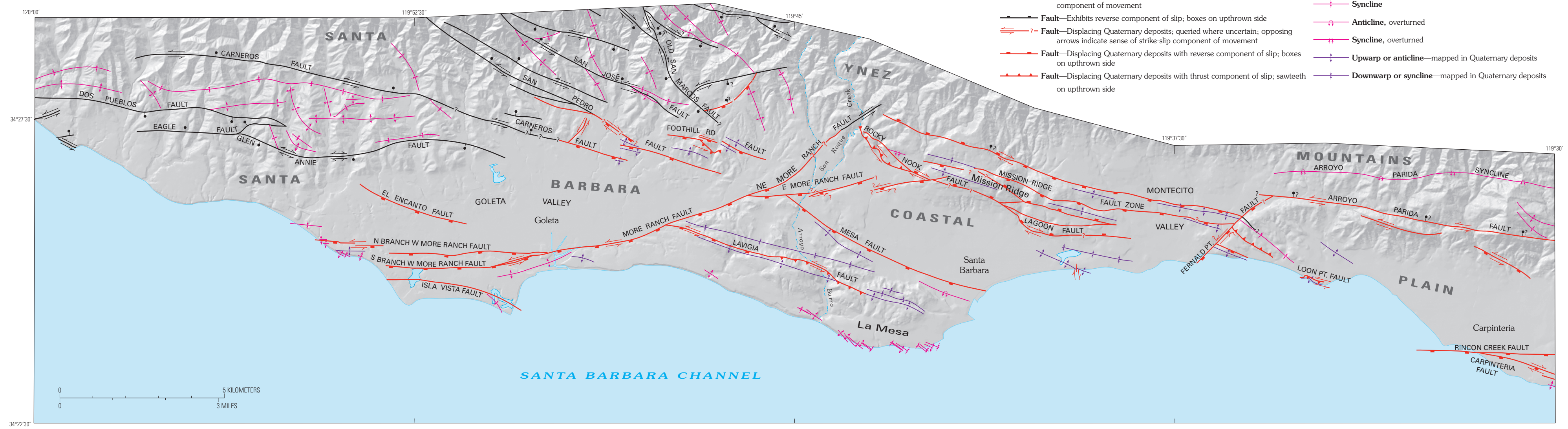

Figure 11. Structure map of the Santa Barbara coastal plain map area showing kinematic interpretations of faults and highlighting those structures that deform Quaternary deposits. Background image is shaded-relief Digital Elevation Model (DEM) (30-m resolution) of map area, illuminated from northwest.

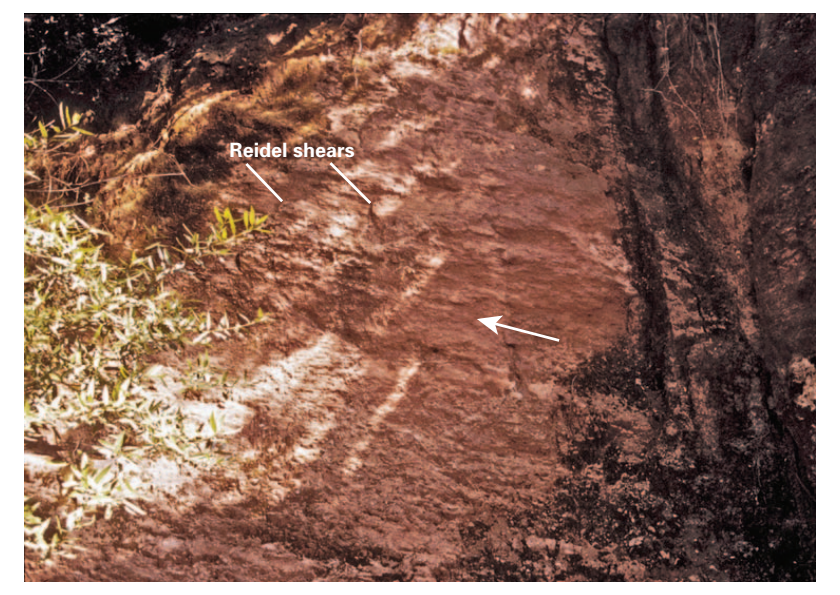

Figure 12. View, looking southeast, of fault surface exposed in small cliff face in conglomeratic sedimentary rocks of the lower unit of the Sespe Formation (Tspl) in upper San Roque Creek drainage on flank of Santa Ynez Mountains. Fault strikes northeast (230°) and dips 79° to the northwest. Parallel slickenlines (small grooves, ridges, and other slip lineations) that are gently inclined (rake = 6°) to the southwest (right) together with the relative orientations of small, imbricate Reidel shear surfaces (labeled) indicate that this fault is a sinistral strike-slip fault. Arrow shows direction of movement of block visible in photo. Such subtle structural features were used at fault exposures throughout the map area to help characterize the kinematics of both map-scale and smaller faults.

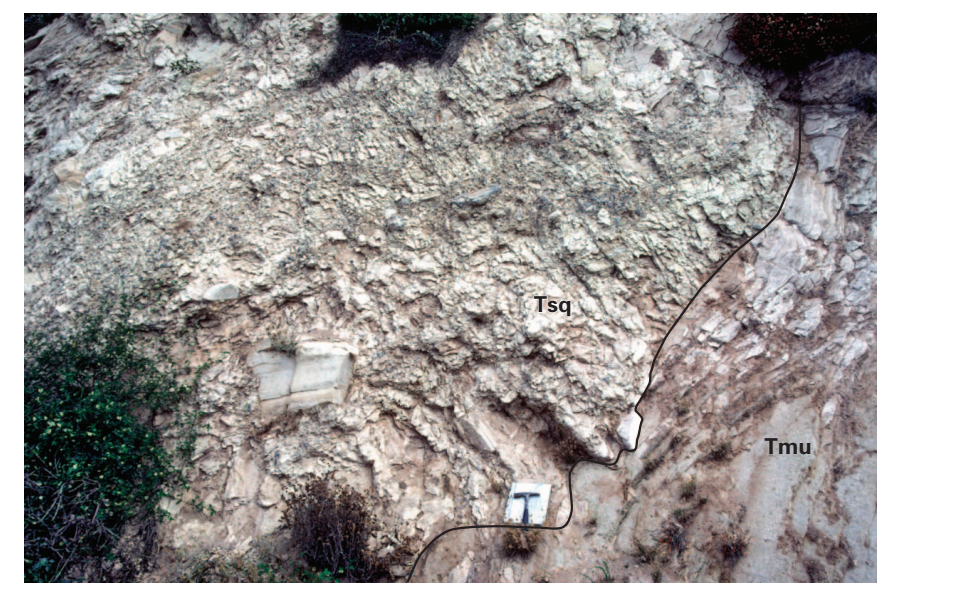

Figure 13. Exposure of sharp contact (at rock hammer) between boulder conglomerate of the upper Miocene Sisquoc Formation (Tsq) and underlying, well-laminated diatomaceous shale of the upper Miocene upper siliceous unit of the Monterey Formation (Tmu) in the sea cliff about 4 km east of Goleta Pier. Most of the clasts in the Sisquoc conglomerate are angular blocks of shale and dolomite derived from the Monterey Formation. We infer that the conglomerate was deposited by a debris flow or submarine rockfall at bathyal water depths (>150 m, and perhaps much deeper) on a submarine slope or near the base of a slope. Deposition of the conglomerate likely occurred during or shortly after uplift and erosion of the basin margin, which in turn may have been a response to regional transrotational tectonism.

CORRELATION OF MAP UNITS

LIST OF MAP UNITS

af	**Artificial fill (Holocene)**—Fill used for construction of highways, roads, buildings, airport runways, harbor facilities, breakwaters, and dams
Qa	**Active channel alluvium (Holocene)**—Unconsolidated sediments in modern stream channels, primarily pebble to boulder gravel. Thickness less than 5 m
Qb	**Beach deposits (Holocene)**—Unconsolidated sand along coastal beaches. Thickness varies seasonally and rarely exceeds 5 m
Qds	**Dune sand (Holocene)**—Unconsolidated wind-blown sand forming coastal dunes northwest of Coal Oil Point
Qe	**Estuarine deposits (Holocene)**—Locally organic-rich clay, silt, and subordinate sand deposited primarily in peritidal environment in low-lying coastal areas of modern and historically active sloughs. Maximum thickness probably less than 20 m
Qas	**Asphalt deposits (Holocene)**—Black, tar-like asphalt that represents weathered and biodegraded oil derived from nearby natural seeps. Typically near asphalt-filled fractures in bedrock exposed in sea cliffs
Qdf	**Debris-flow deposits (Holocene and upper Pleistocene)**—Massive, weakly consolidated rock-debris breccia derived from rock units exposed upslope. Mainly located along lower flanks of Santa Ynez Mountains, where deposits are estimated to be less than 5 m thick
Qac	**Alluvium and colluvium (Holocene and upper Pleistocene)**—Poorly consolidated silt, sand, and gravel deposits of modern drainages and piedmont alluvial fans and floodplains. Exposed thickness generally less than 10 m
Qc	**Colluvium (Holocene and upper Pleistocene)**—Poorly consolidated, poorly stratified, and poorly sorted deposits that mantle gentle to moderate slopes and are chiefly derived from weathering and downslope movement of nearby bedrock. Maximum thickness probably less than 15 m
Qls	**Landslide deposits (Holocene to middle Pleistocene)**—Deposits of diverse slope-movement processes ranging from poorly sorted, disrupted mixtures of rock fragments and soil to relatively intact bedrock slump blocks. Largest landslide deposits may be as thick as 60 m
Qtc	**Travertine and caliche? deposits (Holocene? and Pleistocene?)**—White, massive, locally vuggy deposits of calcium carbonate. Deposits, depicted by point symbols on the map, are localized along or near faults
Qia	**Intermediate alluvial deposits (upper Pleistocene)**—Weakly consolidated, stratified silt, sand, and gravel that form low, rounded, moderately dissected terraces and piedmont alluvial fans that rest at higher elevations than the modern coastal piedmont surface underlain by unit Qac. Thickness probably locally exceeds 20 m
Qmt	**Marine-terrace deposits (upper Pleistocene)**—Basal (~1 m) weakly to moderately consolidated, variably stratified, fossiliferous gravel, sand, and silt deposited as marine intertidal, beach, and estuarine deposits and overlying nonmarine eolian, alluvial, and colluvial deposits. Marine-terrace deposits rest on elevated marine wave-cut platforms and form single terraces or flights of terraces ranging in elevation from 10 to 90 m (30–300 ft) and in age from 45 ka (oxygen-isotope substage 3a) to 105 ka (substage 5c). Maximum exposed thickness about 20 m
Qoa	**Older alluvial deposits (upper and middle Pleistocene)**—Moderately consolidated, crudely stratified, poorly sorted sand and sandstone, gravel, conglomerate, and breccia, and rare interbeds of clay, silt, and mudstone comprising proximal to distal facies of alluvial fans shed from the Santa Ynez Mountains. Unit forms dissected, gently south-sloping elevated terraces, interfluvial caps, and other erosional remnants as thick as 35 m
Qca	**Casitas Formation (upper and middle Pleistocene)**—Nonmarine, moderately to well-consolidated siltstone and silt, sandstone and sand, and conglomerate and gravel deposited mainly as alluvium likely shed off of the Santa Ynez Mountains uplift. Conglomerate and gravel contain a greater percentage of Sespe Formation-derived clasts than the closely allied older alluvial deposits (Qoa). Maximum exposed thickness of 50 m in map area
Qbx	**Shale-clast sedimentary breccia (middle Pleistocene)**—Nonmarine breccia and conglomerate composed dominantly of clasts of shale and mudstone derived from the Monterey Formation. Breccia inferred to be locally derived paleo-colluvium. Thickness locally exceeds 10 m
Qsb	**Santa Barbara Formation (middle and lower Pleistocene)**—Chiefly marine, pale-gray, -buff, and -tan, friable, bioturbated and massive sandstone; includes subordinate interbeds and intervals of shale, siltstone, and silty to clayey sandstone. Contains diverse assemblage of marine invertebrate fossils. Rare conglomeratic lenses become more common upsection, and uppermost part of unit locally interfingers with nonmarine conglomerates of the Casitas Formation (Qca) or older alluvial deposits (Qoa). Maximum exposed thickness approximately 300 m
	Unnamed sedimentary rocks east of Goleta Pier (Pleistocene and Pliocene?)—Marine conglomerate, sandstone, siltstone, and mudstone mapped as three unnamed, lithologically distinct units:
Qcg	**Conglomeratic unit (middle and lower Pleistocene)**—Conglomerate, sandstone, siltstone, and mudstone probably deposited within ancient submarine canyon eroded into underlying Pleistocene and Pliocene rocks (Qss, Tsq). Contains marine fossils. Conglomerate contains clasts derived from the Sisquoc Formation (Tsq), Monterey Formation (Tmu, Tmm, Tml), and older units. Width of paleo-submarine channel exposed in sea cliff about 610 m and minimum axial thickness of unit 33 m
Qss	**Sandstone unit (lower Pleistocene?)**—Laminated and bioturbated sandstone, siltstone, and subordinate mudstone and conglomerate. Contains marine fossils. Unit contains clasts derived from the Sisquoc Formation (Tsq) and (or) Monterey Formation (Tmu, Tmm, Tml). Exposed thickness 45–60 m
QTst	**Siltstone unit (lower Pleistocene and upper Pliocene?)**—Massive and extensively bioturbated siltstone, mudstone, and silty sandstone. Contains marine fossils. Exposed thickness about 45 m
Tsq	**Sisquoc Formation (lower Pliocene and upper Miocene)**—Marine, tan- to white-weathering, diatomaceous mudstone and shale, conglomerate, and subordinate dolomite. Unit distinguished by thick beds of conglomerate containing angular clasts (commonly up to 1 m across; some blocks as large as 10 m) derived from the Monterey Formation. Both base and top of Sisquoc consist of erosional unconformities. Maximum preserved thickness of 300 m in sea cliffs
Tu	**Unnamed mudstone (upper Miocene)**—Marine mudstone, shale, and porcelanite with subordinate dolomite and phosphatic pebble conglomerate. Exposures of unit are restricted to the coastal area southeast of the mouth of Dos Pueblos Canyon, where it is about 15–20 m thick
	Monterey Formation (Miocene)—Marine, predominantly well-bedded, siliceous and calcareous mudstone and shale with subordinate porcelanite and dolomite. Contains abundant microfossils. Unit deposited at water depths ranging from upper to lower bathyal (150–2,000 m). Maximum composite thickness of Monterey estimated to be about 830 m. The Monterey Formation is divided into three subunits that are distinguished from each other by lithology and age:
Tmu	**Upper siliceous unit (upper Miocene)**—East of Eagle Canyon, unit consists mainly of white- to tan-weathering diatomaceous mudstone and shale with subordinate dolomite and porcelanite. West of Eagle Canyon, consists mainly of thin-bedded, light-brown-weathering, siliceous mudstone and shale, porcelanite, and subordinate dolomite. Thickness ranges from about 50 m to 250 m
Tmm	**Middle shale unit (upper and middle Miocene)**—White-weathering shale, mudstone, dolomite, porcelanite, phosphorite, and subordinate tuff. Unit includes a prominent, at least 20- to 30-m-thick, submarine-slump deposit in sea cliff near mouth of Eagle Creek in western part of map area. Thickness estimated to range from 70 to 180 m
Tml	**Lower calcareous unit (middle and lower Miocene)**—Calcareous, siliceous, and phosphatic, white- to tan-weathering mudstone and shale, with subordinate dolomite, porcelanite, breccia, glauconitic sandstone, and tuff. In places, unit exhibits intraformational deformation (including breccia) that may have formed by gravitational slumping shortly after deposition. Thickness about 250 m thick near the mouth of Dos Pueblos Canyon
Tmlb	**Breccia (middle? and lower Miocene)**—Intraformational breccia exposed on the sea cliff near the mouth of Dos Pueblos Canyon. Composed of clasts of calcareous mudstone and dolomite. Unit about 30 m thick
Tr	**Rincon Shale (lower Miocene)**—Marine, primarily massive and thick-bedded, light-brown-weathering mudstone, with subordinate dolomite, siliceous shale, sandstone, and tuff. Mudstone is bioturbated and massive, pervasively hackly fractured, and locally contains abundant microfossils. Single or multiple white-weathering tuff layers limited to upper 10 m of Rincon section. Thickness ranges from about 400 m to 460 m
Trs	**Siliceous shale interval (lower Miocene)**—Thin-bedded, white- to pale-gray-weathering siliceous shale that resembles siliceous shale intervals within Monterey Formation. Unit about 60 m stratigraphically below top of Rincon Shale and has a thickness of 35 to 45 m
Tv	**Vaqueros Formation (upper Oligocene)**—Shallow-marine, massive and bioturbated, resistant, light-tan-weathering sandstone. Uppermost part consists of thinly interbedded sandstone, siltstone, and mudstone; base typically marked by a 50- to 150-cm-thick, thinly bedded, calcareous conglomerate containing abundant fossil-shell fragments. Unit gradually decreases in thickness eastward from more than 150 m to about 75 m
	Sespe Formation (Oligocene and upper Eocene)—Nonmarine, fluvial, maroon, reddish-brown, and greenish- to pinkish-gray sandstone, mudstone, and conglomerate. In map area, divided into three subunits that are distinguished from each other mainly by differences in lithology, provenance, and age. An intraformational unconformity, representing a depositional hiatus lasting much or all of early Oligocene time, separates the lower (Tspl) and middle (Tspm) subunits. Composite thickness of Sespe Formation increases eastward from about 700 m to more than 1,500 m
Tspu	**Upper sandstone and mudstone unit (upper Oligocene)**—Interbedded sandstone, siltstone, and mudstone that weather to various shades of maroon, buff, pale green, tan, and gray. Proportions of different sedimentary rock types vary both laterally and vertically through the section. Sandstones commonly broadly lenticular, laminated, and thin to thick bedded. Upper unit thickens eastward across map area from about 500 m to more than 1,000 m
Tspm	**Middle conglomerate and sandstone unit (Oligocene)**—Interbedded conglomerate, sandstone, and mudstone that weather to various shades of maroon, tan, and pale-greenish gray. Proportions of different sedimentary rock types vary both laterally and vertically through the section. Polymict conglomerate clasts include abundant chert and lithic sandstone likely derived from Franciscan Complex source terrane(s), which, together with color, distinguish unit from lower conglomeratic Sespe Formation unit (Tspl). Middle unit generally increases in thickness eastward from where it pinches out in Tecolote Canyon to almost 450 m north of Carpinteria
Tspl	**Lower conglomerate and sandstone unit (lower Oligocene? and upper Eocene)**—Interbedded conglomerate, conglomeratic sandstone, sandstone, mudstone, and minor shale that mostly weather to various distinctive shades of salmon gray, reddish gray, pale-pinkish gray, and tan. Proportions of different sedimentary rock types vary both laterally and vertically through the section. Sandstones and conglomerates are resistant and form hogbacks. Distinguished by common arkosic compositions and pinkish to reddish hues of sandstones, and abundant rounded quartzitic, granitoid, metamorphic, and volcanic clasts in the polymict conglomerates, which are likely derived from Mojave Desert source terrane(s). Lower unit generally increases in thickness eastward from where it pinches out in Glen Annie Canyon to more than 250 m north of Carpinteria
Tcw	**Coldwater Sandstone (upper? and middle Eocene)**—Shallow-marine, thin- to thick-bedded sandstone that weathers to distinctive, pale shades of buff, yellow, tan, and brown, with subordinate interbeds and thin intervals of gray, olive-gray, and greenish-gray siltstone, shale, and mudstone. Sandstone beds are resistant and form hogbacks where steeply dipping. Upper part of unit locally conglomeratic and rich in fossil oyster shells. Base of Coldwater not exposed in map area; unit about 750 to 1,000 m thick regionally

Contact—Long-dashed where approximately located; short-dashed where inferred; dotted where concealed; tic shows direction and angle of dip

Trace of marker bed

Outline of erosionally beveled geomorphic surface

Marine-terrace shoreline angle—Approximately located based on subtle to strong topographic steps of terrace surface; locally coincides with contact between Qmt and older units

Faults—Long-dashed where approximately located; short dashed where inferred; dotted where concealed; queried where uncertain; small red arrow shows direction and angle of dip; red diamond-headed arrow shows bearing and rake of slickenlines and inferred slip direction of hanging-wall block

Strike-slip fault—Opposing arrows show sense of strike-slip movement, queried where uncertain; bi-directional arrows indicate superposed dextral and sinistral slip on same fault

Normal fault—Ball and bar on apparent downthrown side

Reverse fault—Rectangles on apparent upthrown side

Thrust fault—Sawteeth on apparent upthrown side

Fault-line scarp—Inferred from aerial photographs; hachures point downscarp

Slide-block boundary—Inferred; hachures on slide block

Fold and warp axial traces—Long-dashed where approximately located; short-dashed where inferred; dotted where concealed

Anticline—Large arrow indicates plunge direction

Overturned anticline

Upwarp axis—Large arrow indicates plunge direction; mapped in Quaternary deposits where geomorphically expressed

Syncline—Large arrow indicates plunge direction

Overturned syncline

Downwarp axis—Mapped in Quaternary deposits where geomorphically expressed

⊕ **Horizontal bedding**

40 **Inclined bedding**—Showing strike and dip

35 **Inclined bedding**—Showing approximate strike and dip

20 **Inclined bedding**—Showing strike and dip of beds calculated from bedding trace

Vertical bedding—Showing strike

65 **Overturned bedding**—Showing strike and dip

(Tsq) 14 **Concealed bedding**—Measured in unit indicated where temporarily exposed at low tide or in construction excavation

Oil seep

● **Qas**—Asphalt deposit

● **Qtc**—Travertine and caliche? deposit

SCALE 1:25 000
1 ½ 0 1 MILE
1 .5 0 1 KILOMETER
CONTOUR INTERVAL 20 and 40 FEET
DATUM IS MEAN SEA LEVEL

13°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION AT CENTER OF MAP, 2009

MAP LOCATION

Base from U.S. Geological Survey: Carpenteria, 1952, (photorevised 1988); Dos Pueblos Canyon, 1951, (photorevised 1988); Goleta, 1950, (photorevised 1988); and Santa Barbara, 1952, (photorevised 1988)
Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zone 5
1,000-meter Universal Transverse Mercator grid ticks, zone 11
Shaded-relief base from U.S. Geological Survey National Elevation Dataset (NED) 10-meter resolution elevation data for the Santa Barbara coastal plain area

Suggested citation:
Minor, S.A., Kellogg, K.S., Stanley, R.G., Gurrola, L.D., Keller, E.A., and Brandt, T.R., 2009, Geologic Map of the Santa Barbara Coastal Plain Area, Santa Barbara County, California: U.S. Geological Survey Scientific Investigations Map 3001, scale 1:25,000, 1 sheet, pamphlet, 38 p.

Printed on recycled paper

GEOLOGIC MAP OF THE SANTA BARBARA COASTAL PLAIN AREA, SANTA BARBARA COUNTY, CALIFORNIA

By

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2009

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Geology was mapped 1999–2006 mainly using surface field observations and measurements as well as 1928 and 1999 aerial photographs. S.A. Minor chiefly mapped the coastal piedmont and lower flanks of the Santa Ynez Mountains in the Goleta, Santa Barbara, and Carpinteria quadrangles. K.S. Kellogg mapped most of the Dos Pueblos quadrangle and northern, more mountainous parts of the Goleta and Carpinteria quadrangles. R.G. Stanley chiefly mapped Miocene and Pliocene marine rocks exposed in the sea cliffs in all four component 7.5' quadrangles. Geology digitally compiled using a photogrammetric plotter (Kern PG-2) and digital orthophotographic quadrangle images. Note: The map and database were compiled at a scale of 1:24,000 (one inch on the map to 2,000 feet on the ground), but the map was printed at 1:25,000 due to printing press size limitations.

Geologic map GIS database by Theodore R. Brandt
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