Santa Rosa Creek Area Watershed

Hydrologic Unit Name	Water Planning Area	Acreage	Flows to	Groundwater Basin(s)	Jurisdictions
Estero Bay 10	Cambria WPA 2	46,997 acres	Pacific Ocean – (Monterey Bay National Marine Sanctuary)	Santa Rosa Valley, Villa Valley	County of San Luis Obispo Town of Cambria, Town of Harmony

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Description: Santa Rosa Creek Area Watershed lies within the southern portion of the California Coast Ranges. The watershed is bounded to the east by the Santa Lucia Mountain Range and to the west by the Pacific Ocean. The grouping of watersheds herein is consistent with the CalWater HUC 10 scale. The watershed contains 2 major sub-watersheds: Santa Rosa Creek, which contains Santa Rosa Creek and Green Valley (Perry Creek) and Villa Creek. Santa Rosa Creek and its tributaries flow mostly unobstructed down steep hill-slopes mantled with shallow soils and sparse shrub vegetation and through agricultural areas and the small town of Cambria before reaching the Pacific Ocean. Villa Creek begins in the Santa Lucia range flowing to the Pacific Ocean and encompassing a majority of the coastal area within the total watershed. The Town of Cambria is near the mouth of Santa Rosa Creek, downstream of the confluence with Perry Creek – the largest tributary in the Santa Rosa Creek sub-watershed. The urbanized area of Cambria is located within both the Santa Rosa Creek sub-watershed and the Villa Creek sub-watershed. Topography includes steep upland areas and low gradient valley bottoms bordering the reaches of Santa Rosa, Green Valley, Perry, and Villa Creeks. Cypress Mountain, the highest peak, lies in the Upper Santa Rosa creek watershed and reaches an elevation of approximately 3,411 ft. At its lowest elevation (sea level), Santa Rosa Creek flows through a lagoon contained by an annually formed sandbar at Moonstone Beach. The dominant land use is agriculture.

Existing Watershed Plans:

Santa Rosa Creek Watershed Management Plan (Greenspace Cambria, 2010)

Cambria forest management plan (Greenspace Cambria, 2002)

Santa Rosa Creek Area Watershed

Characteristics:

	Physical Setting	
	Rainfall	Average Annual: 15 in. (coastal) - 38 in. (mountains) (NRCS shapefile, 2010)
	Air Temperature	Summer Range (August 2012): 54°-70°F Winter Range (December 2012): 48°-59°F (Cambria, NOAA National Climatic Data Center, viewed 2013)
	Geology Description	Lower Santa Rosa Creek and Villa Creek: composed of steep Franciscan non-infiltrative headwaters; with flat pre Quaternary moderate infiltrative valley. Steiner Creek, Upper Green Valley Creek, Upper San Simeon Creek and Upper Santa Rosa Creek: steep Franciscan non-infiltrative headwaters. Lower Green Valley Creek and Lower San Simeon Creek: flat Franciscan low infiltrative valleys (Bell, pers. comm., 2013). This watershed is composed of Franciscan mélange: a mix of hard graywacke (sandstone) and weak, sheared argillite (silt/claystone) (Chipping 1987, Dibblee 2007a 2007b). Following the complete subduction of the Farallon Plate beneath the North American Plate, the eventual transition to a transform (strike-slip) plate boundary began about 25 million years ago with the gradual contact between the northwest-moving Pacific Plate and the southeast-moving North American Plate (Atwater and Molnar 1973). This transition marked a geologically brief period of coastal volcanism which locally produced the erosion-resistant Cambria Felsite rocks, as seen today at Scott Rock located east of Cambria near Taylor Creek (Dibblee 2007a). Other volcanic rocks formed during this period include the now highly weathered basalts and hardened tuffs (solidified volcanic ash) of the Obispo Formation that run along a northwest-trending band in the upper watershed. Terrestrial and marine sedimentary rocks formed during this period include a mix of hard, coarse-grained sandstones and weak, fine-grained shales (Greenspace Cambria, 2012)
	Hydrology	
	Stream Gage	Yes; upper watershed - USGS 11142200 (Santa Rosa Creek near Santa Rosa Creek Rd); lower watershed - SLO County San Simeon Station (718); SLO County Santa Rosa Station (716).
	Hydrology Models	Yes; part of the Highway 1 by-pass bridge project, 1999 and updated in 2002 for a pump station evaluation for the west village. The flow from that model was used in the design of Ferrasci road bridge.

Santa Rosa Creek Area Watershed

		Data limited by project scope, not watershed level model
	Peak Flow	3,350 cfs (upper Santa Rosa Creek) 12,000 cfs (lower Santa Rosa Creek), (USGS, viewed August, 2013)
	Base Flow	0 – 5 cfs (USGS, viewed August, 2013)
	Flood Reports	Yes; Cambria Drainage and Flood Control Study, February 2004; Raines, Melton and Carella, Inc.
	Flood Control Structures	Bridges: 1 over Villa Creek on Villa Creek Rd; 1 over Harmony Valley Creek on Old Creamery Road; 6 over Santa Rosa Creek on Santa Rosa Creek Road (3), Burton Drive, Windsor Boulevard and Main Street; 4 over San Simeon Creek on San Simeon Creek Road; 1 over Leffingwell Creek on Moonstone Beach Drive. (PWD Bridges GIS layer) Additional by-pass channel; storm drains; pumping systems along Santa Rose Creek in West Village (SLO County Flood Control and Water Conservation District, 2009) Gravity Pressure Stormdrain System: Diverts residential runoff directly into Santa Rosa Creek (SLO County Flood Control and Water Conservation District, 2009) Dams proposed for San Simeon Creek near Van Gordon tributary, proposed Jack Creek Dam (Cambria Community Services District, 2004).
	Areas of Known Flood Risk	The combination of the area's steep topography, lack of underground drainage facilities, and location of residential parcels below the street grade has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways. The magnitude of flooding varies by the districts in Cambria and by location in each district. Drainage from a number of uphill lots flows along the edge of street pavement and drains onto lower lots, creating flooding and erosion problems. Drainage problems also exist where curbs are present, but the topography creates conditions where lots adjacent to the roadway are much lower than the roadway surface. SLOCFCWCD has earmarked over $500,000 to fund one of the projects, has obtained funding assistance from the local community totaling $1.1 million and obtained a FEMA HMGP (Hazard Mitigation Grant Program) grant of $3.5 million towards regional flood improvements. Total cost for the unfunded projects is estimated to be $11.0 million (SLO County Flood Control and Water Conservation District, 2009). Villa Creek is a flood-prone natural drainage course that should be maintained in its natural state to protect native vegetation and wildlife habitats (SLO County Flood Control and Water Conservation District, 2009).
	Biological Setting	

Santa Rosa Creek Area Watershed

Vegetation Cover	Primarily annual non-native grassland with continuous coast live oak woodland, Montane hardwood consisting mainly of coast live oak and black oak woodland, and Closed-Cone Pine-Cypress consisting of Monterey pine. Some coastal scrub and cypress forest present. (1990 vegetation layer) grassland, scrub/shrub, mixed forest, evergreen forest, cultivated crops, woody wetlands, pasture/hay, and emergent herbaceous wetland (DFG, 2005) Willow riparian scrub is present along some coastal drainages in this watershed. *Data limited by age of shapefile.*
Invasive Species	Cape Ivy, Pampass grass (National Marine Fisheries Service, 2007) *Data limited in scope, not representative of entire watershed* ~~*Data limited in scope, not representative of entire watershed*~~
Special Status Wildlife and Plants	Key: FE - Federal endangered, FT - Federal threatened, SE - State endangered, ST - State threatened, SSC - State Species of Special Concern; FP- Fully Protected, SA – Special Animal, CRPR – CA rare plant rank (CNDDB, viewed August, 2013) Locations listed refer to USGS 7.5' quadrangle names. Only the portion overlapping the watershed boundary was considered. *Data limited to observations, not complete inventory*

Species	Status	BURRO MOUNTAIN	CYPRESS MTN	LIME MTN	PEBBLESTONE SHUT-IN	PICO CREEK
Animals						
California red-legged frog	FT		x	x	x	x
Coast Range newt	SSC		x			
fringed myotis	SA					x
monarch butterfly	SA	x				x
prairie falcon	SA (Nesting)				x	x
steelhead - south/central California	FT		x		x	x

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Santa Rosa Creek Area Watershed

Species	Status	BURRO MOUNTAIN	CYPRESS MTN	LIME MTN	PEBBLESTONE SHUT-IN	PICO CREEK
coast DPS						
tidewater goby	FE					x
two-striped garter snake	SSC				x	x
western pond turtle	SSC		x		x	x
Yuma myotis	SA					x
Plants						
Arroyo de la Cruz manzanita	CRPR 1B.2				x	x
Carmel Valley bush-mallow	CRPR 1B.2		x		x	
Chorro Creek bog thistle	FE; SE; CRPR 1B.2				x	
Cook's triteleia	CRPR 1B.3		x		x	
Eastwood's larkspur	CRPR 1B.2		x			
Hardham's bedstraw	CRPR 1B.3		x		x	
late-flowered mariposa-lily	CRPR 1B.2				x	
Monterey pine	CRPR 1B.1					x
most beautiful jewel-flower	CRPR 1B.2		x	x	x	x
San Luis mariposa-lily	CRPR 1B.2				x	
San Luis Obispo owl's-clover	CRPR 1B.2					x
San Luis Obispo sedge	CRPR 1B.2				x	
San Simeon baccharis	CRPR 1B.2				x	
Santa Lucia bush-mallow	CRPR 1B.2		x		x	x
woodland woollythreads	CRPR 1B.2		x		x	x

Santa Rosa Creek Area Watershed

Steelhead Streams	Yes; Santa Rosa Creek Upper, Santa Rosa Creek Lower, Lower Perry Creek (DFG, 2005)
Stream Habitat Inventory	Yes; Santa Rosa Creek Steelhead Habitat and Population Survey completed in 2005 by California Department of Fish and Wildlife and California Conservation Corps
Fish Passage Barriers	Unnamed tributary to Santa Rosa Creek, Culvert at Santa Rosa Creek Road crossing, Partial barrier PAD# 712027.00000; Curti Creek, Culvert at Santa Rosa Creek Road crossing, Total barrier PAD# 712044.00000; Unnamed tributary to Santa Rosa Creek, Culvert at Santa Rosa Creek crossing, Total barrier PAD# 712043.00000; North Fork Santa Rosa Creek, Culvert at Santa Rosa Creek Road crossing, Total barrier PAD# 712045.00000; Unnamed tributary, Culvert at Highway 1 crossing, Unknown status PAD# 731784.00000; Fiscalini Creek, Culvert at road crossing, Unknown status PAD# 731365.00000; Perry Creek, Highway 46 bridge with potential passage constraints, Unknown status PAD# 736678.00000 Perry Creek, Culvert at road crossing, Unknown status (No ID #); Green Valley Creek, Highway 46 bridge with potential passage constraints, Unknown status PAD# 736483.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736475.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736538.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736487.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736431.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736457.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736621.00000; Green Valley Creek, Unspecified, Unknown status PAD# 716213.00000; Unnamed tributary to Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736625.00000; Green Valley Creek, Culvert at Highway 46 crossing, Unknown status PAD# 736583.00000 (Protected Access Database, viewed 2013)
Designated Critical Habitat	Yes; Steelhead Trout: Santa Rosa Hydrologic Sub-area 331014. Outlet(s) = Santa Rosa Creek (Lat 35.5685, Long –121.1113) upstream to endpoint(s) in: Green Valley Creek (35.5511, –120.9471); Perry Creek (35.5323–121.0491); Santa Rosa Creek (35.5525, –120.9278); Unnamed Tributary (35.5965, –120.9413); Unnamed Tributary (35.5684, –120.9211); Unnamed Tributary (USFWS Critical Habitat Mapper, viewed 2013) California red-legged frog (USFWS Critical Habitat Portal, viewed 2013) ~~California red-legged frog (USFWS Critical Habitat Portal, viewed 2013)~~
Habitat Conservation Plans	Yes; A Habitat Conservation Plan was envisioned as part of the original request for proposals by the Cambria Community Services District as part of its effort to complete a comprehensive water master plan as well as its existing water supply and need for an evaluation of alternative water sources (Cambria Community Services District, 2004)

Santa Rosa Creek Area Watershed

Other Environmental Resources	San Luis Obispo Coastal Zone, Monterey Bay National Marine Sanctuary, Santa Rosa Creek Groundwater Basin, Cambria Monterey Pine Forest (SLO County Flood Control and Water Conservation District, 2007).
Land Use	
Jurisdictions & Local Communities	County of San Luis Obispo, Town of Cambria (portion), Town of Harmony
% Urbanized	2.45% total (0.2% Commercial, 0.25% Public Facilities, 2% residential) (SLO County LUC)
% Agricultural	93.35% (SLO County LUC)
% Other	4.2% total (2.6% rural lands, 0.3% recreation, 1.3% open space)(SLO County LUC)
Planning Areas	Adelaida, North Coast, Estero Planning Areas (SLO County)
Potential growth areas	Hearst Corporation property
Facilities Present	Cambria Wastewater Treatment Plant; CCSD well sites (Santa Rosa Creek)
Commercial Uses	Cambria Pit (Stone – Base Mine by Winsor Construction at Santa Rosa Creek Rd); Bianchi Quarry (Stone – Base Mine by Winsor Construction: North East Cambria); Land Red Rock Pit (Stone Mine by Negranti Construction at Hwy 46W) Recreation and tourism in Cambria; Wineries in Cambria and Harmony; Agriculture – rangeland, orchards, etc., Hearst Ranch
Demographics	
Population	5,941 in watershed (US Census Blocks, 2010) 5,601 in the town of Cambria(US Census Blocks, 2010)
Race and Ethnicity	Watershed: Caucasian, representing 76%. Latinos represent 21%. Asians represent 1.3%. The remaining races each represent less than 4%, including African American, American Indian, and Pacific Islander. (US Census Blocks, 2010) Cambria: Caucasian, representing 75.6%. Latinos represent 20.8%. Mixed Race represents 1.3%. (US Census, 2010)
Income	MHI $51,557 in watershed (US Census Tracts, 2010) MHI $75,747.5 in Cambria (U.S. Census, 2010)
Disadvantaged Communities	No; 1.5% of individuals are below poverty level in watershed (US Census Tracts, 2010) 5% of individuals below poverty level in Cambria (US Census, 2010)
Water Resources	
Water Management Entities	Cambria Community Services District (CCSD)
Groundwater	Yes; Alluvial; Santa Rosa Valley, Villa Valley

Santa Rosa Creek Area Watershed

		Use of wells for domestic supplied water (CCSD) from Santa Rosa Creek The State Board allows a maximum extraction of 518 AFY in the Santa Rosa Valley Groundwater Basin and a maximum dry season extraction of 260 AF (Carollo, 2012) CCSD – Level III severity declaration for water supplies (CCSD Water Master Plan, 2008)
	Surface Water	No public reservoirs in the watershed. Identified as fully appropriated stream system for entire year according to the SWRCB's Water Code 1205-1207.
	Imported Water	None
	Recycled/ Desalinated Water	CCSD has made an effort over the past 15 years to bring a desalination operation to Santa Rosa/San Simeon. The most recent effort failed in 2012. Proposed water recycling plant for agricultural irrigation (Cambria Community Services District, 2004).
	Key groundwater percolation area(s)	None Identified: Recharge to the basin is largely by percolation of stream flow and, to a lesser extent, from infiltration of precipitation and excess irrigation flow (Ca. Dept. of Water Resources, 2003)
	Water Budget	Yes; Yates and Van Konynenburg, 1998 (Carollo, 2012). *Data limited by age since last report*
	Water Uses	
	Beneficial Uses	*Santa Rosa Creek Estuary* - Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Wildlife Habitat (WILD), Cold Fresh Water Habitat (COLD), Warm Fresh Water Habitat (WARM), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Preservation of Biological Habitats of Special Significance (BIOL), Rare, Threatened, or Endangered Species (RARE), Commercial and Sport Fishing (COMM) and Shellfish Harvesting (SHELL). *Santa Rosa Creek* - Municipal & Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Wildlife Habitat (WILD), Cold Fresh Water Habitat (COLD), Warm Fresh Water Habitat (WARM), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Rare, Threatened, or Endangered Species (RARE), Freshwater Replenishment (FRSH) and Commercial and Sport Fishing (COMM). *Green Valley Creek* - Municipal & Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Wildlife Habitat (WILD), Cold Fresh Water Habitat (COLD), Warm Fresh Water Habitat (WARM), Rare, Threatened, or Endangered Species (RARE) and Commercial and

	Sport Fishing (COMM). *Villa Creek* - Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Wildlife Habitat (WILD), Cold Fresh Water Habitat (COLD), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Threatened, or Endangered Species (RARE), Estuarine Habitat (EST), Freshwater Replenishment (FRESH), and Commercial and Sport Fishing (COMM) (CCRWQCB, 2011)
Other Unique Characteristics	
Historical Resources	Arthur Beale House (Nitt Witt Ridge, 881 Hillcrest, Cambria); Guthrie-Bianchini House (2251 Center Street, Cambria); The Paul Squibb House (4063 Burton Drive, Cambria); The Bluebird Inn (1880 Main Street, Cambria); Carroll's Blacksmith Shop (Cinnabar, 4121 Burton Drive, Cambria); Heart's Ease (4101 Burton Drive, Cambria); Ian's Restaurant (2150 Center Street, Cambria); Robin's Restaurant (4095 Burton Drive, Cambria); The Brambles Restaurant (4005 Burton Drive, Cambria); Rigdon Hall Restaurant (4022 Burton Drive, Cambria); The Big Red House (370 Chelsea Lane, Cambria); The Bucket of Blood Saloon (Painted Sky Recording Studios, 4111 Bridge St, Cambria); Louis Maggetti's House (2261 Center Street, Cambria); Camozzi's (2262 Main Street, Cambria); Soto's Market (2244 Main Street, Cambria); The Leffingwell House (2420 Main Street, Cambria); The Olallieberry Inn (2476 Main Street, Cambria); The Lull House (1880 Main Street, Cambria); The Old Santa Rosa Chapel (2353 Main Street, Cambria); The Thorndyke House (4286 Bridge Street, Cambria); The First Presbyterian Church (4314 Bridge Street, Cambria); The Bank of Cambria (2255 Main Street, Cambria); Fog's End (2735 Main Street, Cambria) (PLN_SDE_PLN_DES_HISTORIC_Points GIS Layer)
Shamel Park	Day use park operated by the County of San Luis Obispo
Estero Bluffs State Park	355 acres consisting of grassland dominated coastal terrace that slopes from Highway One to the Pacific Ocean. The purpose of the park is to preserve and protect a rich, diverse, and scenic area of the Pacific Ocean coast. There are intertidal areas, wetlands, low bluffs and coastal terraces punctuated by a number of perennial and intermittent streams, as well as a pocket cove and beach at Villa Creek. The area provides a natural habitat for a number of endangered species including the snowy plover (slostateparks.com).
Harmony Headlands State Park	Located 2.6 miles south of Harmony. Constant winds and salt spray result in vegetation tolerant of these conditions. The flat coastal terraces, valleys and steep coastal bluffs are home to grasslands and coastal scrub containing plants such as San Luis Obispo morning glory, California buttercup, yarrow and lupine. The area contains diverse and unique

Santa Rosa Creek Area Watershed

	habitats supporting rare, endangered and sensitive plant and animal species (slostateparks.com).
Cambria Pines Easement	1450 acres held by The Nature Conservancy (National Conservation Easement Database, 2013)
Hearst Ranch	Hearst Ranch encompasses an impressive variety of habitats and topography - elevations on the Ranch rise from sea level along the coastline to 3,600 feet on some of the peaks along the ridgeline of the Santa Lucia Mountains. Grassland-covered coastal terraces extend to natural sea bluffs, rocky headlands and sandy beaches. Over 1,400 acres of riparian woodland is present on the property. Riparian woodland species include Sycamore and Coast live oak (Ca. Resources Agency, 2004).
Climate Change Considerations	
	In the Santa Rosa Creek watershed, such a rise in sea-level would put new areas at risk of flooding, increase the likelihood and intensity of floods in areas that are already at risk, and accelerate shoreline recession due to erosion (Figure 2-6) (Heberger, et al. 2009). See also IRWMP, 2014 Section H, Climate Change *General County data, not specific to watershed*

~~***Watershed Codes:***~~

~~CalWater / DWR Number~~	~~HA~~	~~Hydrologic Area Name~~	~~HSA~~	~~Hydrologic Sub-area Name~~	~~SWRCB Number~~	~~CDF Super Planning~~	~~CDF Watershed Name~~
~~3310.140201~~	~~1~~	~~Cambria~~	~~4~~	~~Santa Rosa~~	~~310.14~~	~~Green Valley Creek~~	~~Lower Green Valley Creek~~
~~3310.140101~~	~~1~~	~~Cambria~~	~~4~~	~~Santa Rosa~~	~~310.14~~	~~Santa Rosa Creek~~	~~Lower Santa Rosa Creek~~
~~3310.140202~~	~~1~~	~~Cambria~~	~~4~~	~~Santa Rosa~~	~~310.14~~	~~Green Valley Creek~~	~~Upper Green Valley Creek~~
~~3310.140102~~	~~1~~	~~Cambria~~	~~4~~	~~Santa Rosa~~	~~310.14~~	~~Santa Rosa Creek~~	~~Upper Santa Rosa Creek~~
~~3308.000603~~	~~0~~	~~Undefined~~	~~0~~	~~Undefined~~	~~308.00~~	~~Undefined~~	~~Villa Creek~~

~~Source: Excerpt from California Interagency Watershed Map of 1999, Calwater 2.2.1 (CA Resource Agency, 2004 Update)~~

Santa Rosa Creek Area Watershed

Watershed Codes:

CalWater / DWR Number	HA	Hydrologic Area Name	HSA	Hydrologic Sub-area Name	SWRCB Number	CDF Super Planning	CDF Watershed Name
3310.140201	1	Cambria	4	Santa Rosa	310.14	Green Valley Creek	Lower Green Valley Creek
3310.140101	1	Cambria	4	Santa Rosa	310.14	Santa Rosa Creek	Lower Santa Rosa Creek
3310.140202	1	Cambria	4	Santa Rosa	310.14	Green Valley Creek	Upper Green Valley Creek
3310.140102	1	Cambria	4	Santa Rosa	310.14	Santa Rosa Creek	Upper Santa Rosa Creek
3308.000603	0	Undefined	0	Undefined	308.00	Undefined	Villa Creek

Source: Excerpt from California Interagency Watershed Map of 1999, Calwater 2.2.1 (CA Resource Agency, 2004 Update)

Major Changes in the Watershed

- The first recorded accounts of Santa Rosa Creek valley are those made during the Portola Expedition where, in September 1769, the party encountered a "canyon… and arroyo surrounded with hills of pine". On numerous instances, the expedition party noted flowing streams, both along what is now known as the mainstem Santa Rosa Creek and from many of its "springs", or tributaries. Few other records of this area's natural resources were made for several decades despite the establishment of Mission San Miguel (1779) near present-day Paso Robles and the growing use of the Santa Rosa and San Simeon watershed areas for timber and wild game to support the Spanish population throughout the southern Coast Range region.
- 1840 – Don Julian Estrada granted possession of Rancho Santa Rosa, 13,200 ac land encompassing a portion of western half of watershed.
- In the early 1800's, the area of Cambria was established with rapid growth occurring between 1860 and 1880. The town of Cambria was established in 1866. Rapid urban population growth began in the 1950's with the population rowing from 788 in 1950 to 6,624 in 2009. Existing

vegetation cover was cleared for land use activities which led to the widespread formation of erosion features and channel incision. Scrub/shrub vegetation cover would not begin to recover until the late 1900's.

- There was a severe drought in 1863-1864 which killed off a large portion of the livestock.
- Logging began in the watershed in 1779, with the peak of activity occurring between the late 1800's and the early 1900's. In 1916, logging declined steeply following the removal of old growth timber. The last saw mill in the area closed in 1971.
- In 1840 Cattle Ranching began in the watershed and continued to build through current day.
- In 1840, Don Julian Estrada was granted possession of Rancho Santa Rosa – a 13,200-ac land holding encompassing a portion of the western half of the watershed.
- In 1862, Mercury was discovered in the region. In 1874, Oceanic mine began production with activities increasing in 1916 associated with WWI.
- In the early 1870's the Estrada land was sold to George Hearst who converted the land to agricultural uses. This included the draining of a wetland area that extended from the Perry and Green Valley creek confluence north towards Santa Rosa Creek. This created an artificial stream course for lower Perry Creek which remains today.
- In the late 1800's, gullies were filled in to accommodate agricultural land uses.
- In 1939, Highway 1 and Santa Rosa Road were improved. IN 1964, the Highway 1 bypass was constructed around downtown Cambria.
- In 1974, Highway 46 was constructed through Green Valley.
- Floods occurred in the region in 1914, 1956, 1969, and 1995.
- 2001 –building moratorium based on limited water availability established
- 2005 - San Luis Obispo County stream crossing inventory and fish passage evaluation**,** Fiscalini streambank stabilization
- 2006 - Burton Street Bridge Barrier removal
- 2007-08 - Steelhead enhancement, bank stabilization, and educational signs downstream of Highway 1 Bridge
- 2010 - Non-native eucalyptus tree removal downstream of Highway 1
- 2011 - Ferrasci Road barrier removal

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Watershed Health by Major Tributary

Tributary Name	**Ephemeral / Perennial**	**303d Listed/ TMDLs**	**Pollution Sources** NP (non-point) MP (Major Point)	**Environmental Flows**
Green Valley Creek	Undetermined	Not assessed	n/a	Not assessed
Santa Rosa Creek*	Undetermined	Temperature,	Water Diversions,	Lower:

Santa Rosa Creek Area Watershed

		water	Urban Runoff, Agriculture, Disturbed Sites (Land Dev.), Grazing Related sources	Spring: 2.5 cfs. Summer 0.75 cfs. Upper: Spring: 2.5 cfs. Summer: 0.35 cfs
Villa Creek*	Undetermined	Not assessed	None	Lower: Spring: 1.03 cfs. Summer: 0.38 cfs.

**Indicates independent drainage to the Pacific Ocean*

Watershed Health by Groundwater Basin

Groundwater Basin	Estimated Safe Yield	Water Availability Constraints	Drinking Water Standard Exceedance	Water Quality Objective Exceedance
Santa Rosa Valley	2,260 AFY (Cambria County Water District, 1976; Carollo, 2012)	Sea Water Intrusion (DWR, 1975) Wide seasonal fluctuation in groundwater availability (Carollo, 2012)	Yes; see description below.	None, CCRWQB, 2011
Villa Valley	1,000 AFY (DWR 1958; Carollo, 2012))	Physical limitations and water quality issues (Carollo, 2012)	None (Carollo, 2012)	None, CCRWQB, 2011

Groundwater Quality Description: Chloride content increased more than ten times from 80 ppm in 1955 to 933 ppm in 1975. Background chloride concentrations typically ranged from 30 to 270 ppm. One well had a concentration of 1,925 ppm in November 1961. The Santa Rosa Creek management plan also reports corrosivity effects by water supplies and natural or industrial influenced balance of hydrogen, carbon and oxygen in the water which is affected by temperature and other factors.

Groundwater is found in alluvial deposits with an average specific yield of 17 percent. Groundwater is unconfined and generally flows westward. (Ca. Dept of Water Resources, 2003)

Holocene-aged alluvial deposits consist of unconsolidated sand, clay, silt, and gravel of primarily fluvial origin. Commonly, the deposits are about 100 feet thick beneath the center of the valley and more than 120 feet thick at the coast (Ca. Dept. of Water Resources, 2003)

Primary Issues

Santa Rosa Creek Area Watershed

Issue	*Potential Causes*	*Referenced from*
Surface flow quantity	Extraction and diversions	Greenspace Cambria, 2012
Surface Water Temperature – Santa Rosa Creek 303(d) listed	Limited riparian cover	Greenspace Cambria, 2012
Low dissolved oxygen in lagoon	Low instream flows	Greenspace Cambria, 2012
Fine sediment in lower reaches	Historical land clearing	Greenspace Cambria, 2012
Fish Passage Barriers	Infrastructure changes over time	Greenspace Cambria, 2012
Non-native invasive species	n/a	Greenspace Cambria, 2012
Sedimentation	Grazing/Cattle	National Marine Fisheries Service, 2007.
Water Quantity	Groundwater extraction, low summer flow	National Marine Fisheries Service, 2007
GW basin seawater intrusion		Ca DWR, 2003
GW quality - chloride		Ca DWR, 2003
Outdated basin studies – Villa Valley basin		Carollo, 2012

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Significant Studies in Progress:

Lower Santa Rosa Creek Enhancement Plan

Water quality monitoring snapshot days (ongoing, annual), Cambria Community Services District.