



Soquel Creek Watershed

Area	Hydrologic Units	Calwater Subbasins ---	(Planning Watersheds)
26,932 Acres	18060001	3304130101	Soquel Creek (9063 Acres)
10,899 Hectares	4th Field HUC	3304130102	Hinckley Creek (3180 Acres)
42 Square Miles		3304130103	Bates Creek (6129 Acres)
	3304	3304130104	Soquel Point (718 Acres)
Location	4th Field Calwater	3304130105	West Branch Soquel (7842 Acres)
Santa Cruz County			

Species Potential	Miles of Streams with Species Present
Central California Coast Steelhead Santa Cruz Mountains Diversity Stratum - Potentially Independent Population	<u>Steelhead</u> 32 NOAA Fisheries, Critical Habitat Redesignation, 2005
Central California Coast Coho Santa Cruz Mountains Diversity Stratum - Dependent Population	<u>Coho</u> 0 CDFG, Coho Distribution, May 2007

Critical Habitat
Central California Coast Steelhead 32 Miles of Stream
Central California Coast Coho All accessible river reaches between Punta Gorda & San Lorenzo River including 2 San Francisco Bay streams: Arroyo Corte Madera del Presidio and Corte Madera Creek (64 FR 24049)

Miles of Waterway ^A	Miles	Number of Dams ^C
Naturally Occurring Waterways		8
Intermittent Stream	24	4 - Impassable
Perennial Stream	50	2 - Not a Barrier
		1 - Temporal Barriers
		1 - Unknow Barrier Status

^CPassage Assessment Database, Pacific States Marine Fisheries Commission, 2005

^AUSGS National Hydrography Dataset, High Resolution, 2004. 1:24,000

USGS Gaging Stations ^B	Number of Barriers ^D
11160000 Soquel Creek at Soquel	80
	8 Dams
	20 Road Crossings (5 Impassable, 9 Temp. &/or Partially Impassable)
	52 Natural Barriers (Chutes, Falls, Log Jams, etc. (5 Impassable))

^DPassage Assessment Database, Pacific States Marine Fisheries Commission, 2006

EPA Total Maximum Daily Load Classification (TMDL)^I

Soquel Lagoon -- Low Priority - Nutrients, Sediment. Medium Priority - Patho;

Sources: Natural Sources, Septage Disposal, Nonpoint Source, Construction/Land Development, Urban Runoff/Storm Sewers

^IState Water Resources Control Board, 2003

Appropriated Waterways^J

Soquel Creek and all tributaries where hydraulic continually exists from Monterey Bay upstream is Fully appropriated (4/1 to 11/30)

^JCalifornia State Water Resources Control Board, 1998.



Average Annual Precipitation^E	Average Annual Precipitation Range^E
41.5"	22.5 - 55"

^ECalifornia Mean Annual Precipitation Zones, 1900-1960, CA Department of Forestry, 1990

Roads^A	Miles
Roads in Watershed	
Primary Road / Highway	2
Secondary and connecting road, state highways	2
Local, neighborhood, and rural road, city street, unseparated	162
Vehicular trail, 4WD	4
Driveway or service road	4
Total Miles	

Road Density	
Miles of Roads per SqMi of Watershed	4.1
Miles of Roads per SqMi of 100m Riparian Buffer*	4.0

*Buffer is 100 meters on either side of the stream centerline

^AU.S. Census Bureau - Tiger 2000, 2002. 1:24,000

Slope^D	Acres	Percent of watershed
Lands of 0-2 percent slope	267	1%
Lands of 2-4 percent slope	482	2%
Lands of 4-10 percent slope	1,772	7%
Lands of 10-15 percent slope	1,717	6%
Lands of 15-30 percent slope	7,503	28%
Lands of 30-60 percent slope	13,223	49%
Lands of 60-100 percent slope	1,946	7%
Lands of > 100 percent slope	22	0%

Elevation Range	0-3163 ft.	0-964 m
------------------------	------------	---------

^DSlope derived from USGS 10 meter Digital Elevation Models (DEM's)

Vegetation^G	Acres	Percent of watershed
Agriculture	956	4%
Annual grassland	361	1%
Conifer Forest		
Redwood	13,129	49%
Unknown Conifer	4,137	15%
Hardwood Forest		
Montane Hardwood	5	0%
Hardwood Woodland		
Coastal Oak Woodland	749	3%
Shrub	5,459	20%
Urban	2,167	8%
Water		0%
Wetland		0%

^GMulti-source Land Cover Data (2002 v2), CA Department of Forestry, 2002. 100 meter Grid



Erodability of Watershed^F	Acres	Percent of watershed
---	-------	----------------------

All of watershed is ranked as 6

^FDepartment of Conservation, Division of Mines and Geology; minimum mapping unit: approx. 8000 acres
Watersheds were rated based on slope, precipitation, and lithologic susceptibility to failure. Total erosion potential is based on a combination of the landslide potential, debris slide potential, and the surface erosion potential. Rating 0-10 [0 = Low slide potential, 10 = High slide potential]

Land Ownership^H	Acres	Percent of watershed
Private	23,796	88%
State (Parks & Recreation)	3,136	12%

^HManagement Landscape, CA Department of Forestry, 2002

Population^I	Housing^I
-------------------------------	----------------------------

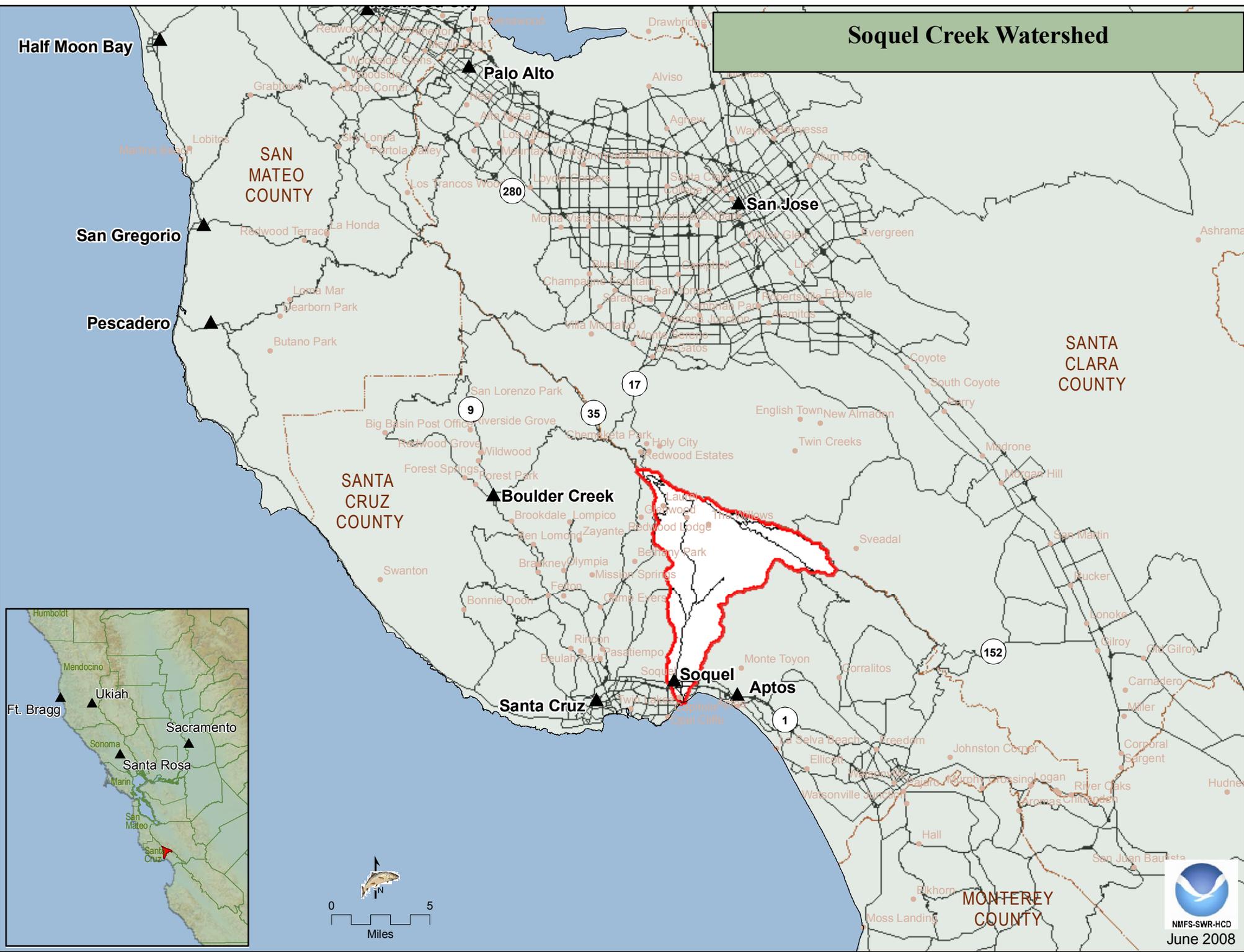
Total Population within the watershed -- 15,884 People
Total Housing Units within the watershed -- 7,124 Houses

Housing Density	
0 to Less than 1 Housing Unit / 160 Acres	31%
1 Unit / 160 Acres to 1 Unit / 20 Acres	9%
1 Unit / 20 Acres to 1 Unit / 5 Acres	38%
1 Unit / 5 Acres to 2 Units / Acre	19%
2 Units / Acres to Greater than or Equal to 5 Units / Acre	2%

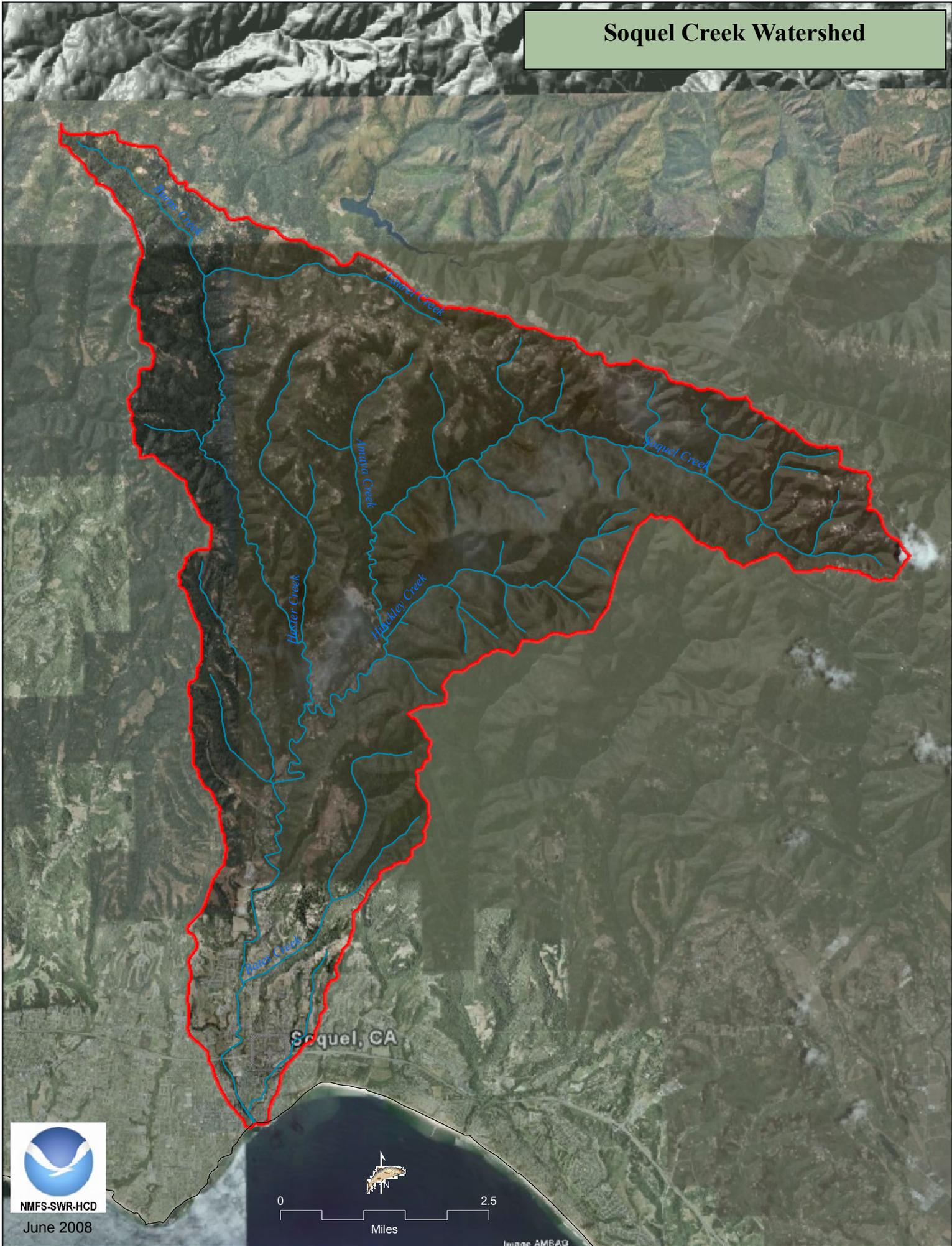
^ICensus 2000 Block Data (Migrated), CA Department of Forestry, 2003



Soquel Creek Watershed



Soquel Creek Watershed



NMFS-SWR-HCD
June 2008

0 2.5
Miles

Image AMBAQ

Soquel Creek Watershed CalWater Planning Watersheds



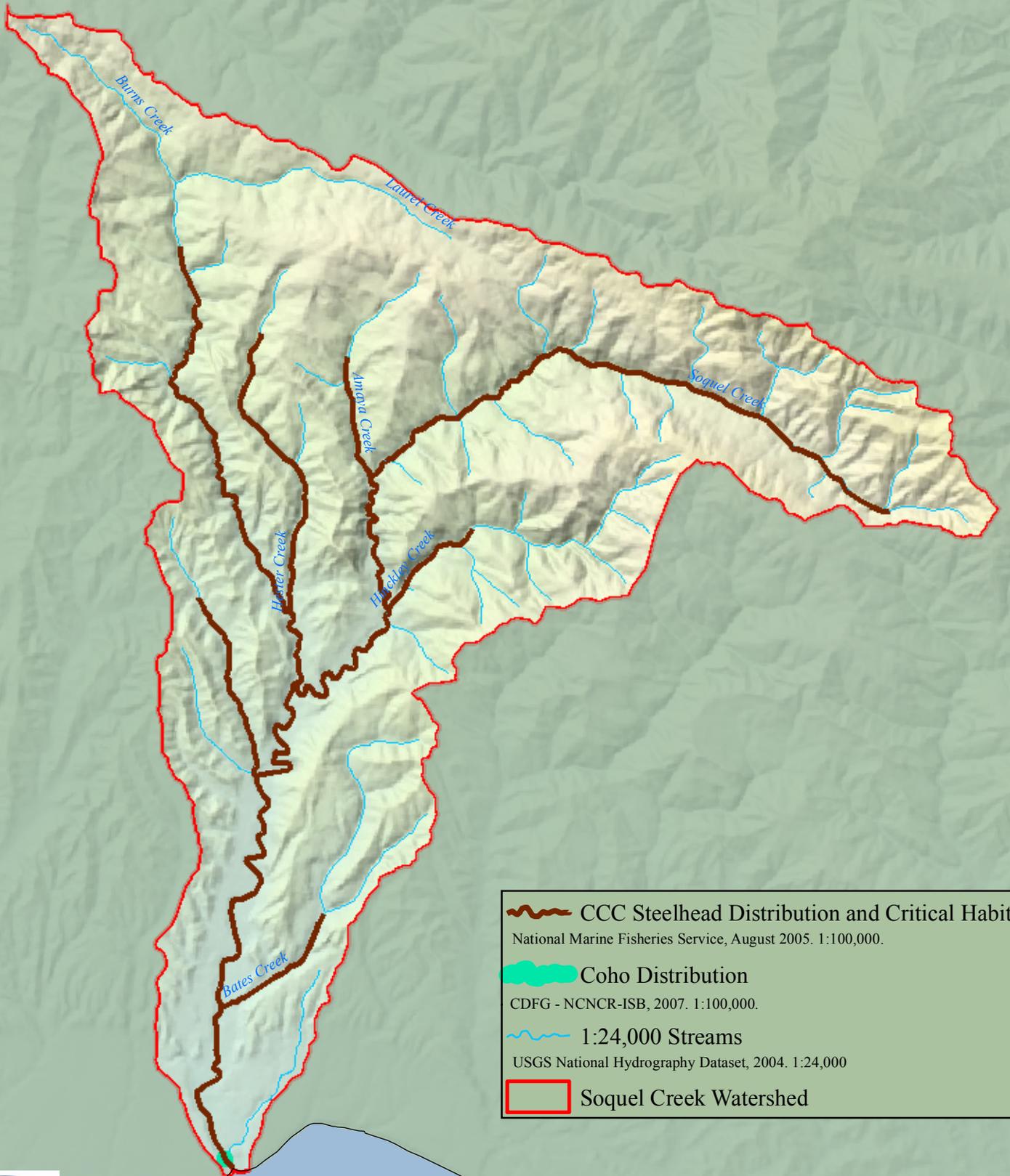
NMFS-SWR-HCD

June 2008



0 2.5
Miles

Soquel Creek Watershed Fish Distribution and Critical Habitat



 CCC Steelhead Distribution and Critical Habitat
National Marine Fisheries Service, August 2005. 1:100,000.

 Coho Distribution
CDFG - NCNCR-ISB, 2007. 1:100,000.

 1:24,000 Streams
USGS National Hydrography Dataset, 2004. 1:24,000

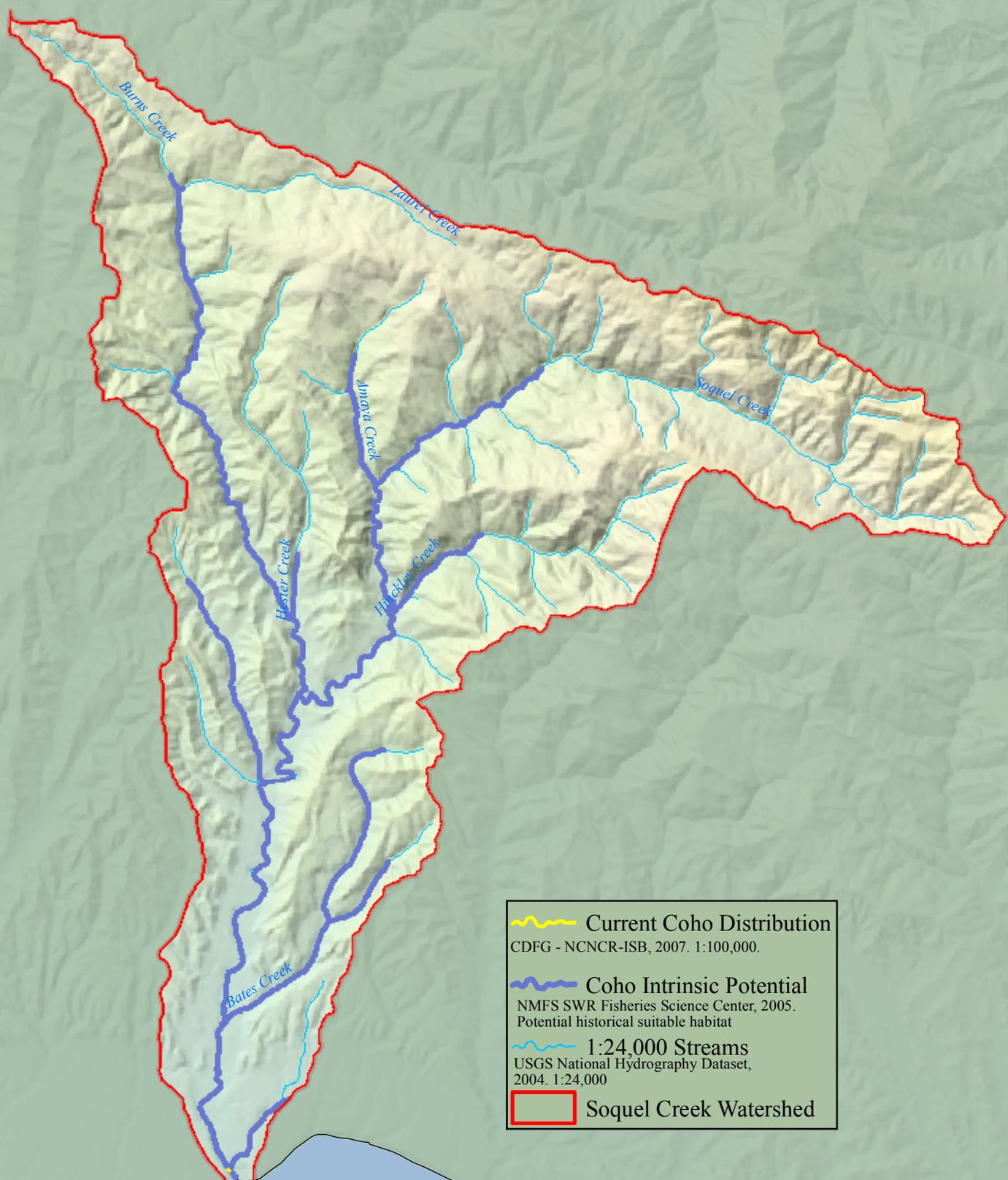
 Soquel Creek Watershed

Soquel Creek Watershed Steelhead Current vs. Historical



-  **Current CCC Steelhead Distribution**
National Marine Fisheries Service, August 2005. 1:100,000.
-  **Steelhead Intrinsic Potential**
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat
-  **1:24,000 Streams**
USGS National Hydrography Dataset, 2004. 1:24,000
-  **Soquel Creek Watershed**

Soquel Creek Watershed Coho Current vs. Historical



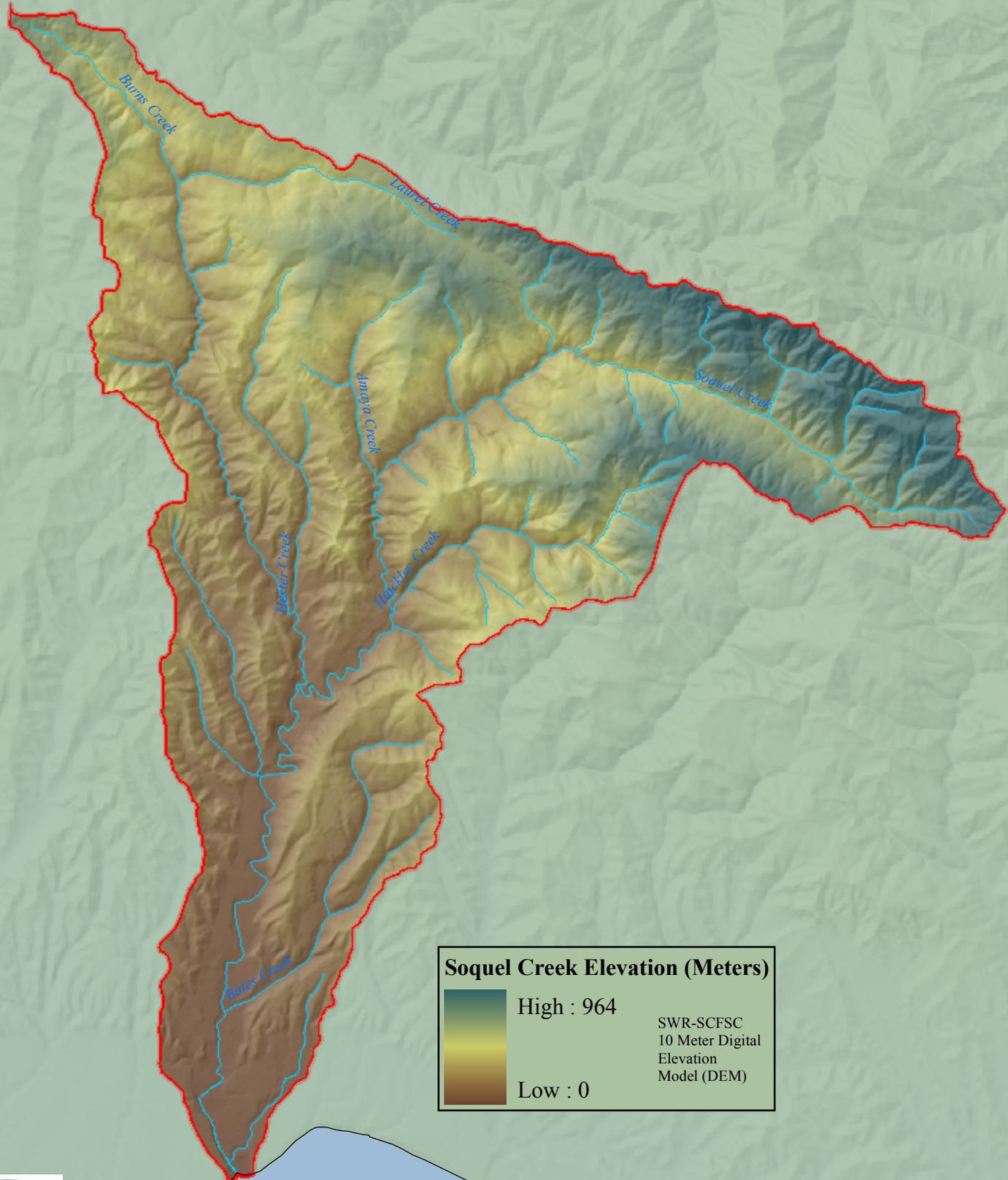
 **Current Coho Distribution**
CDFG - NCNCR-ISB, 2007. 1:100,000.

 **Coho Intrinsic Potential**
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat

 **1:24,000 Streams**
USGS National Hydrography Dataset,
2004. 1:24,000

 **Soquel Creek Watershed**

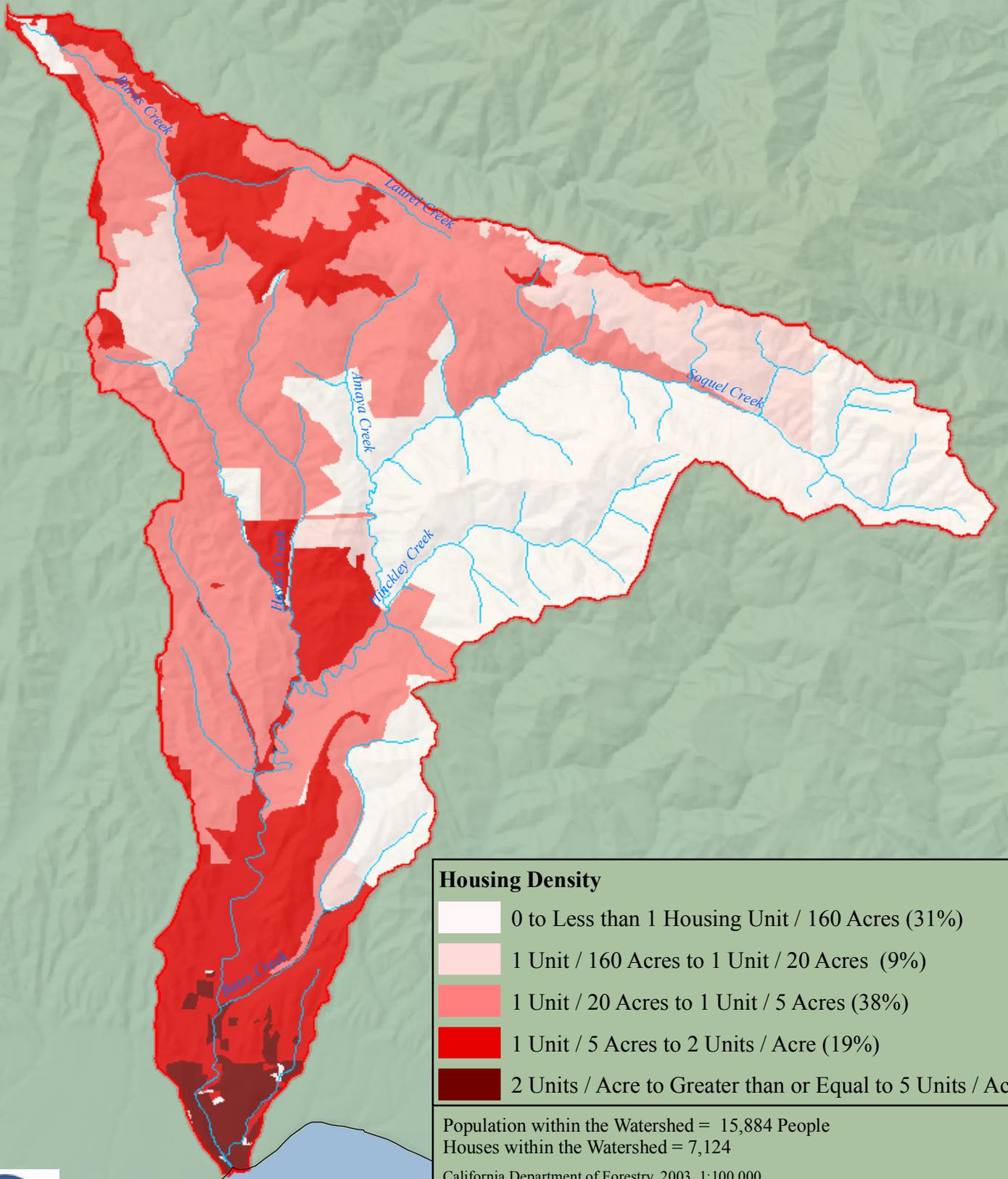
Soquel Creek Watershed Elevation



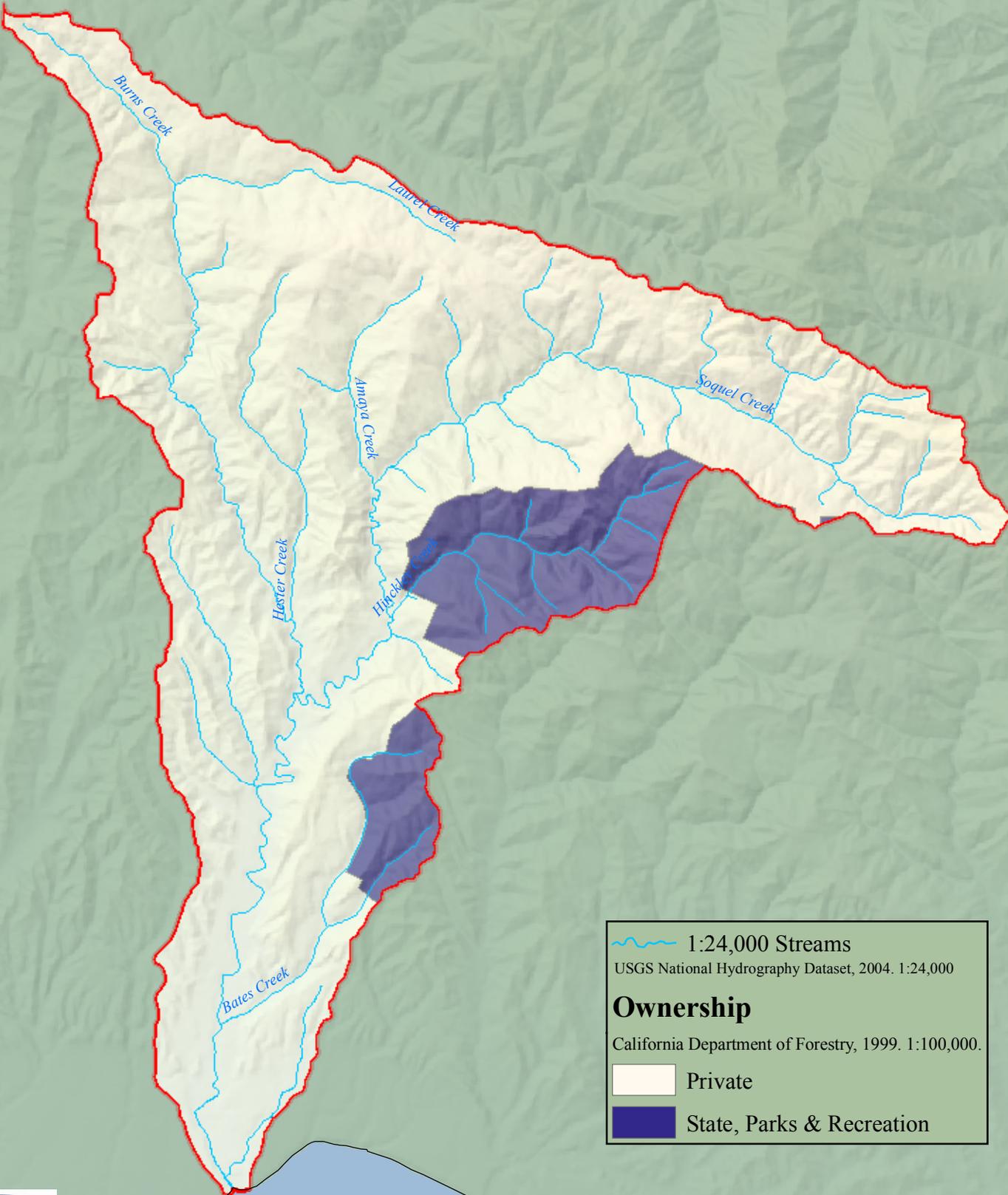
Soquel Creek Elevation (Meters)

	High : 964	SWR-SCFSC 10 Meter Digital Elevation Model (DEM)
	Low : 0	

Soquel Creek Watershed Development



Soquel Creek Watershed Ownership



 1:24,000 Streams
USGS National Hydrography Dataset, 2004. 1:24,000

Ownership
California Department of Forestry, 1999. 1:100,000.

 Private

 State, Parks & Recreation

Soquel Creek Watershed Road Density

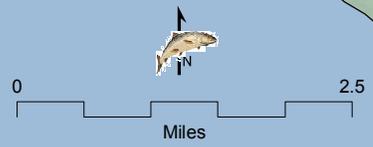


 Road
U.S. Census Bureau - Tiger 2000, 2002. 1:24,000

Road Density (Miles of Road per Square Mile of Watershed)

	1.70 - 2.00
	2.01 - 3.00
	3.01 - 5.00
	5.01 - 6.00
	6.01 - 22.00

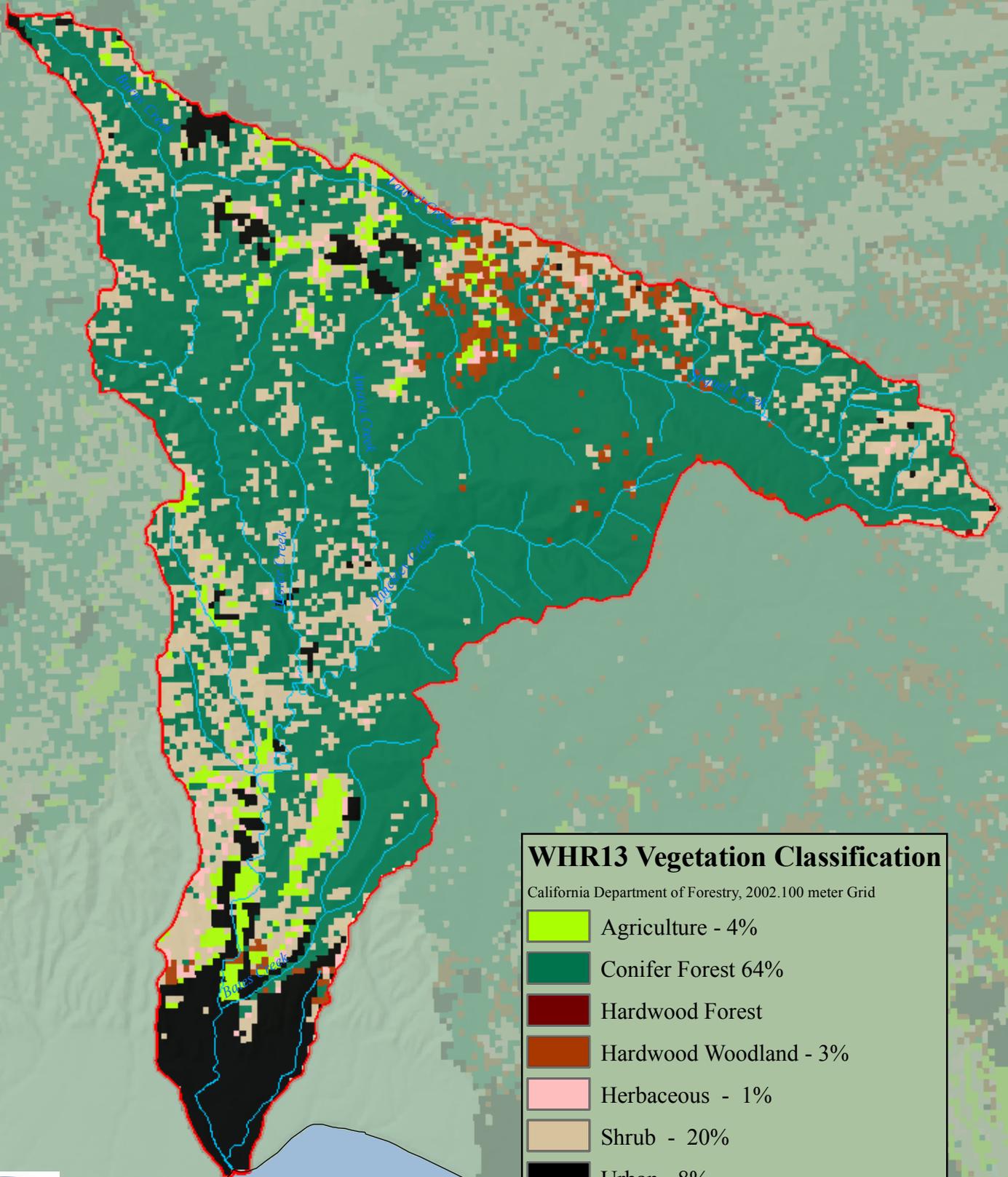
Overall Watershed
Density = 4.1 Miles / SqMi



Soquel Creek Watershed Road Density in the Riparian Corridor



Soquel Creek Watershed Vegetation

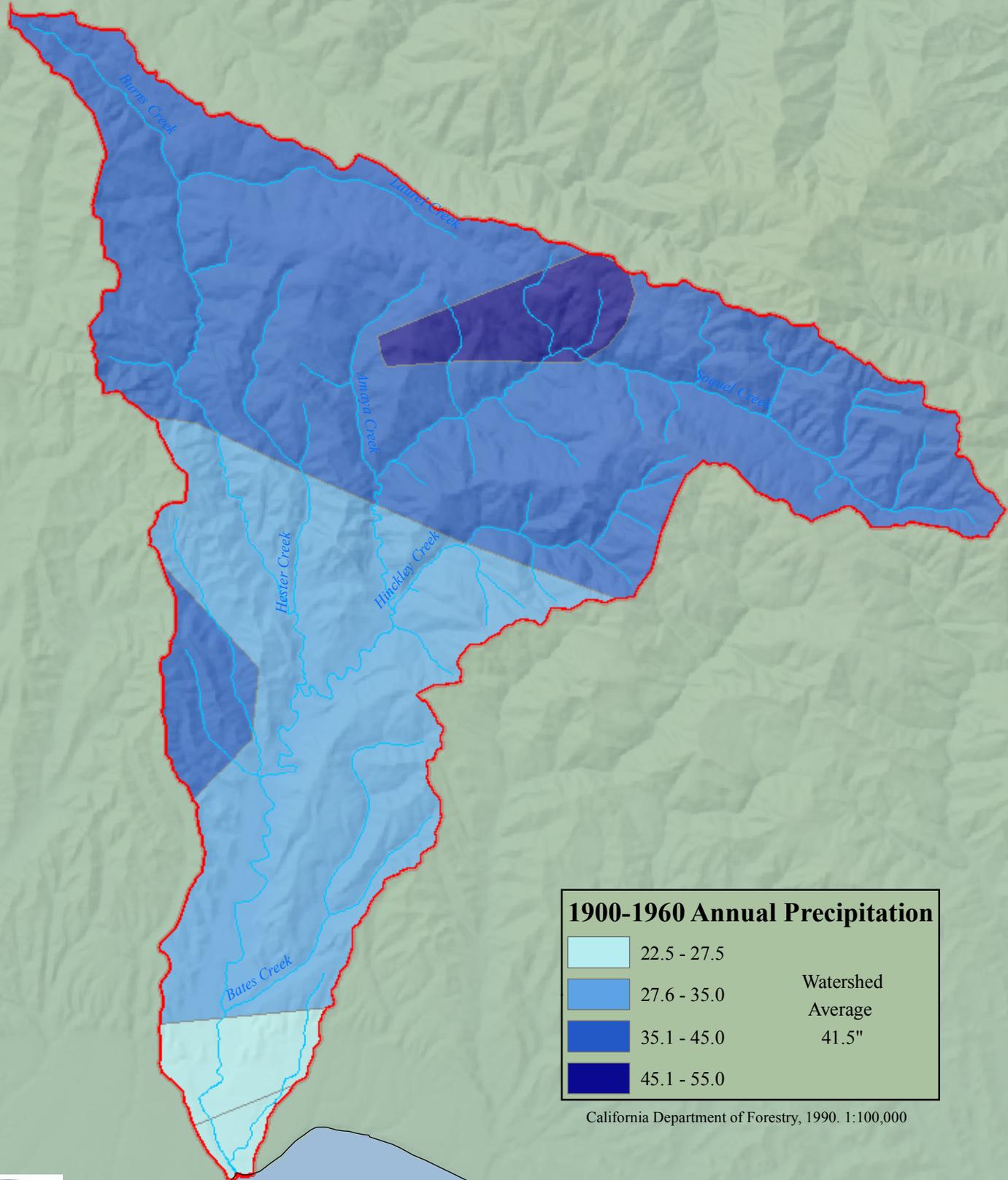


WHR13 Vegetation Classification

California Department of Forestry, 2002.100 meter Grid

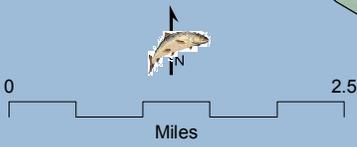
	Agriculture - 4%
	Conifer Forest 64%
	Hardwood Forest
	Hardwood Woodland - 3%
	Herbaceous - 1%
	Shrub - 20%
	Urban - 8%

Soquel Creek Watershed Precipitation

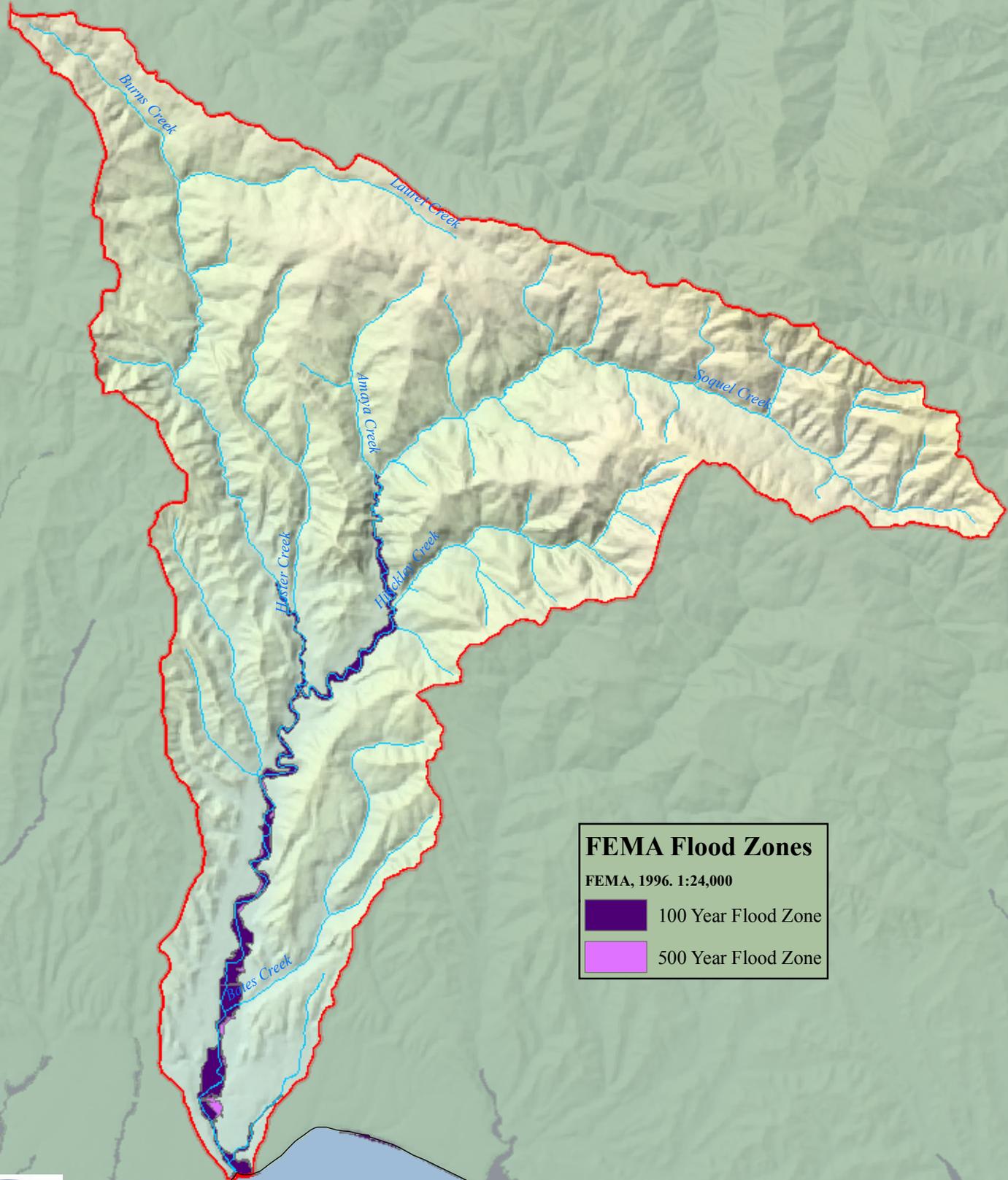


1900-1960 Annual Precipitation	
22.5 - 27.5	Watershed Average 41.5"
27.6 - 35.0	
35.1 - 45.0	
45.1 - 55.0	

California Department of Forestry, 1990. 1:100,000



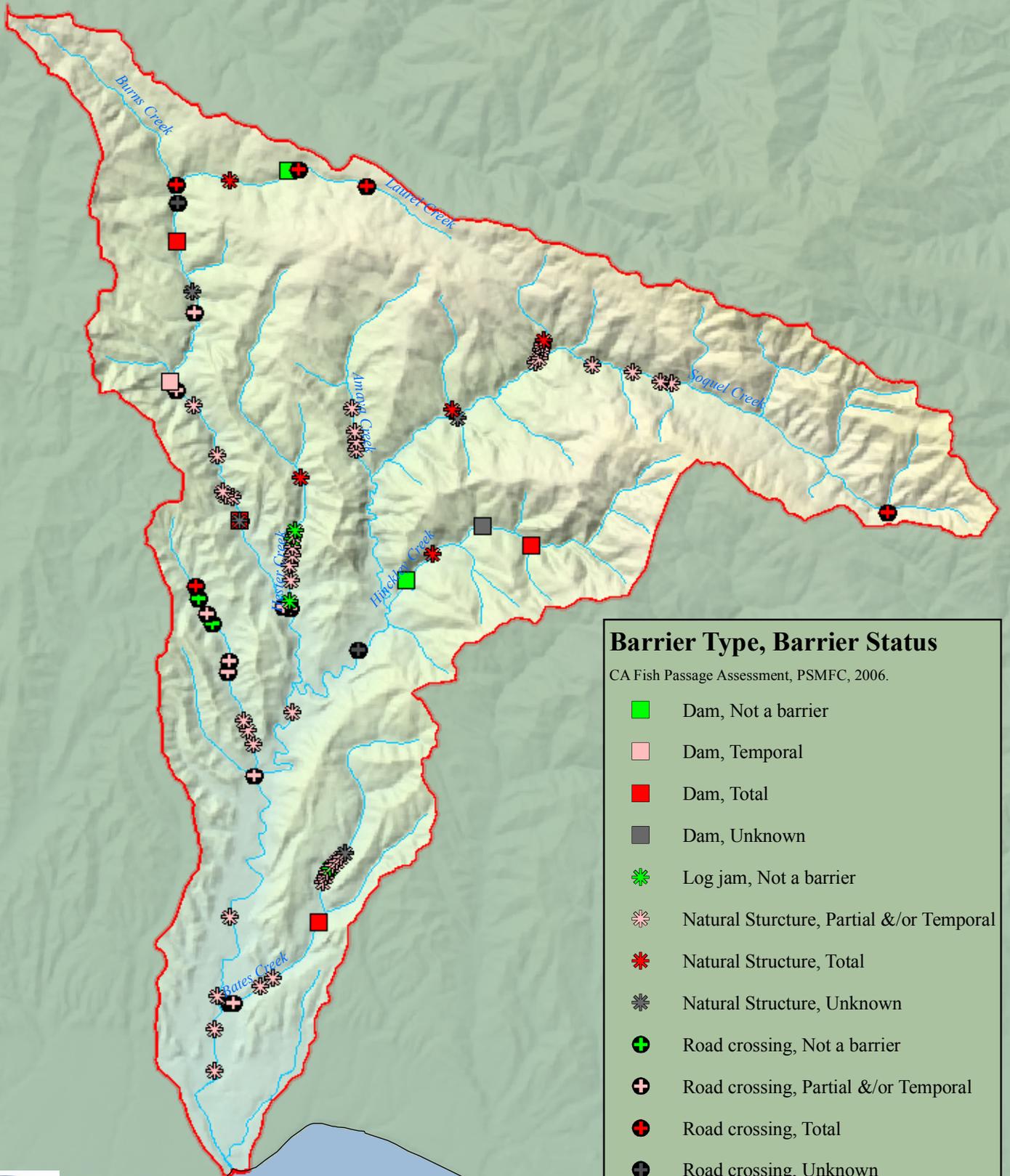
Soquel Creek Watershed Flood Zone



FEMA Flood Zones
FEMA, 1996. 1:24,000

- 100 Year Flood Zone
- 500 Year Flood Zone

Soquel Creek Watershed Barriers



Barrier Type, Barrier Status

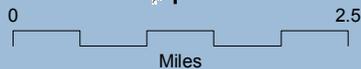
CA Fish Passage Assessment, PSMFC, 2006.

- Dam, Not a barrier
- Dam, Temporal
- Dam, Total
- Dam, Unknown
- ✱ Log jam, Not a barrier
- ✱ Natural Structure, Partial &/or Temporal
- ✱ Natural Structure, Total
- ✱ Natural Structure, Unknown
- ⊕ Road crossing, Not a barrier
- ⊕ Road crossing, Partial &/or Temporal
- ⊕ Road crossing, Total
- ⊕ Road crossing, Unknown

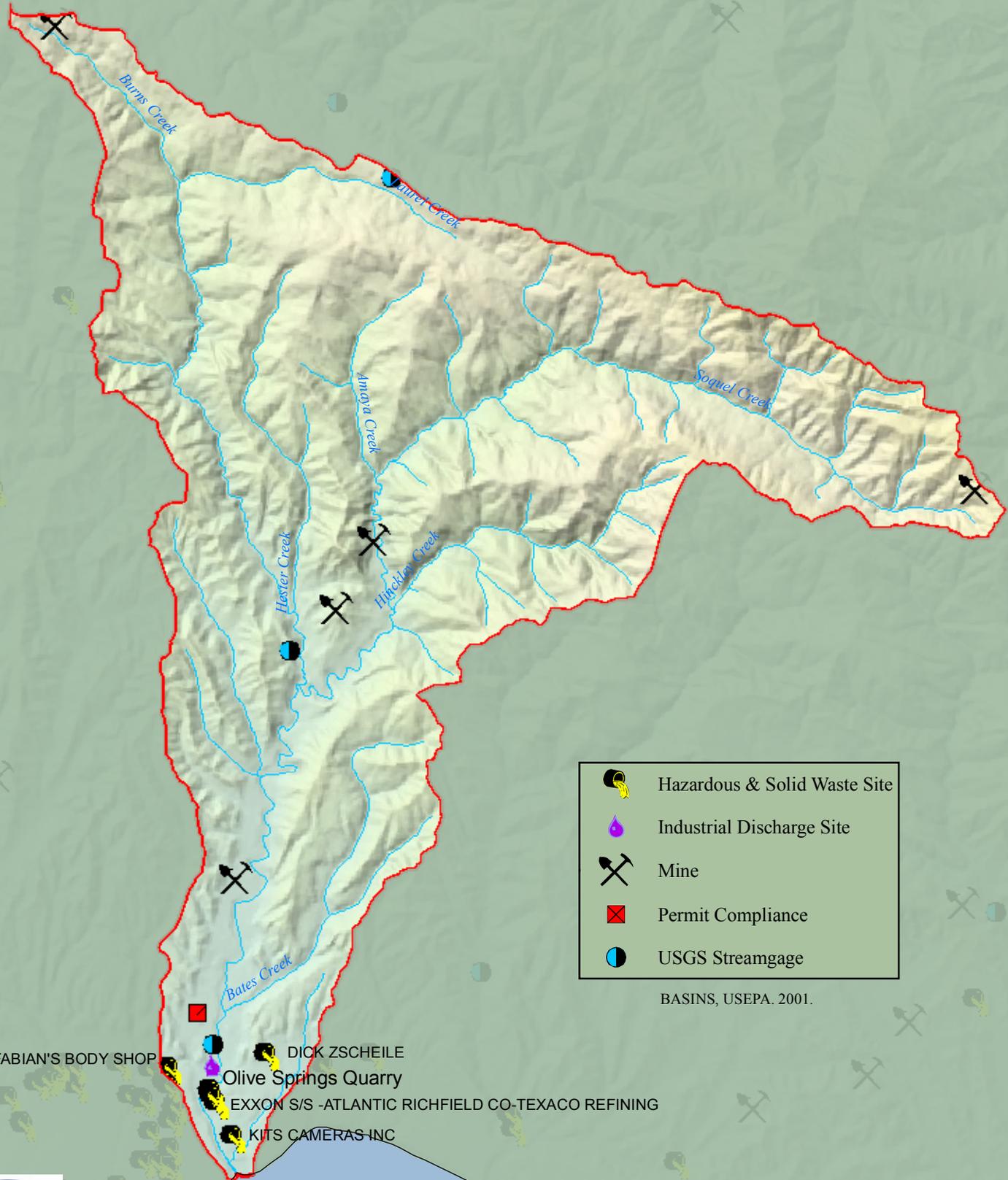
Natural Structure = Log Jam, Falls, Bedrock Chutes, Critical Riffles



June 2008



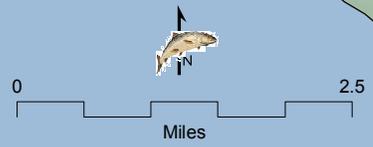
Soquel Creek Watershed Industrial Hazards



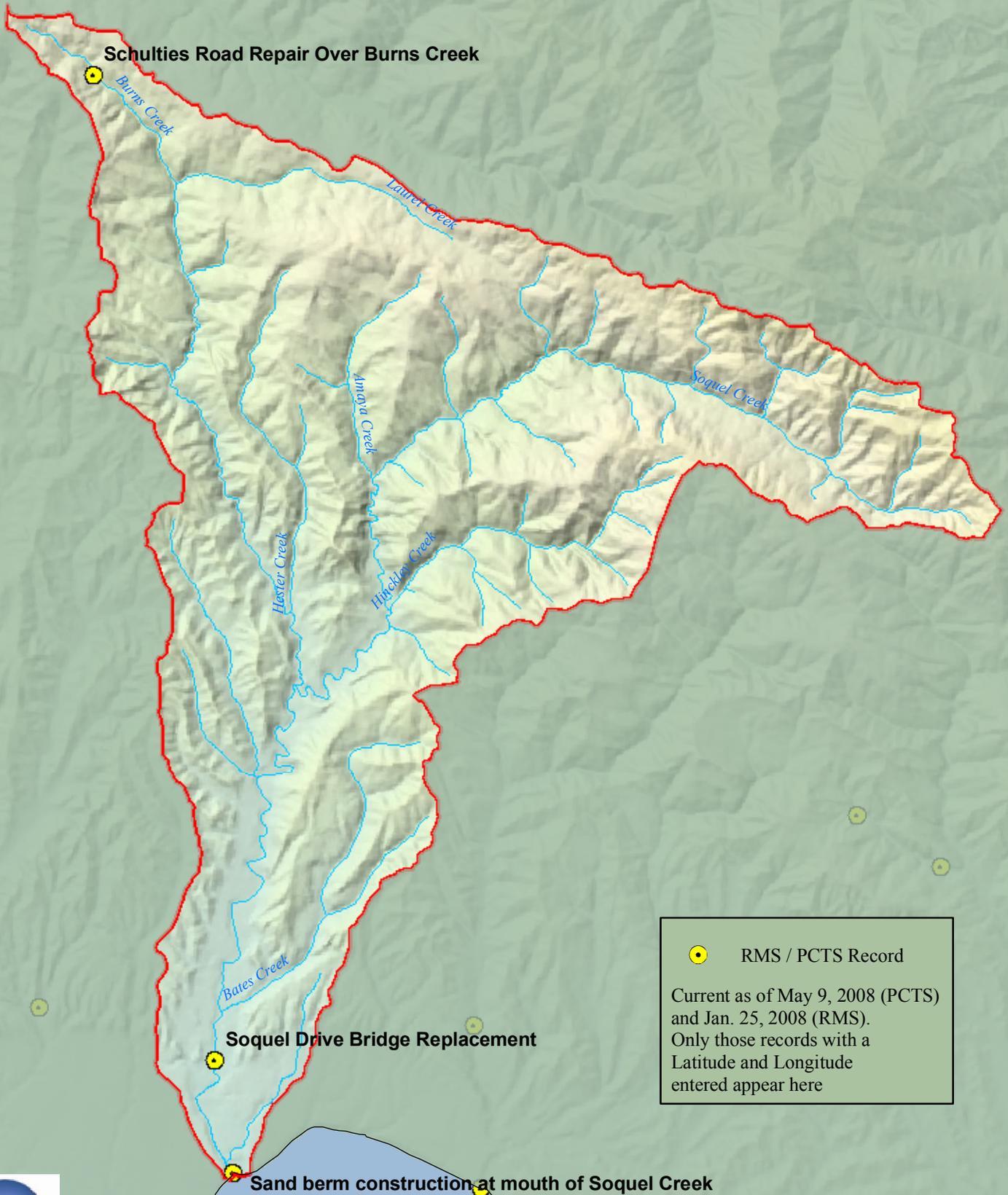
	Hazardous & Solid Waste Site
	Industrial Discharge Site
	Mine
	Permit Compliance
	USGS Streamgage

BASINS, USEPA. 2001.

FABIAN'S BODY SHOP
 DICK ZSCHEILE
 Olive Springs Quarry
 EXXON S/S -ATLANTIC RICHFIELD CO-TEXACO REFINING
 KITS CAMERAS INC



Soquel Creek Watershed Public Consultation Tracking System



● RMS / PCTS Record
Current as of May 9, 2008 (PCTS)
and Jan. 25, 2008 (RMS).
Only those records with a
Latitude and Longitude
entered appear here

References

Watersheds

calwater_ver2_2
vector digital data
California Watersheds (CALWATER 2.2)
California Department of Forestry and Fire
Protection
1:24,000
1999
<http://www.ca.nrcs.usda.gov/features/calwater/>

Distribution

Coho_Distribution
vector digital data
Eric Haney - CDFG - NCNCR-ISB
1:100,000
2006
Draft
<http://www.calfish.org/>

CCC_Steelhead_Distribution_06_2005
vector digital data
National Marine Fisheries Service (NOAA
Fisheries)
1:100,000
August 2005
<http://swr.nmfs.noaa.gov/salmon/layers/finalgis.htm>

Critical Habitat

CCC_Steelhead_ch_06_2005
vector digital data
National Marine Fisheries Service (NOAA
Fisheries)
1:100,000
August 2005
<http://swr.nmfs.noaa.gov/salmon/layers/finalgis.htm>

Hydrology

1806 NHD Flowline
vector digital data
National Hydrography Dataset High Resolution
United States Geological Survey
1:24,000
2004

Dams

Dams_2005
vector digital data

Goslin, M.,
Santa Cruz Fishery Science Center
National Marine Fisheries Service
2005
<http://swfsc.noaa.gov/>

Barriers and Diversions

pad_september2006
vector digital data
California Fish Passage Assessment Database
Pacific States Marine Fisheries Commission
September 2006
<http://www.calfish.org/>

Gaging Stations

gages
vector digital data
Better Assessment Science Integrating point and
Nonpoint Sources (BASINS)
United States Environmental Protection Agency
2001
<http://www.epa.gov/waterscience/basins/>

Total Maximum Daily Load (TMDL)

R2_rivers_2002 303d
vector digital data
State Water Resources Control Board (SWRCB)
California Environmental Protection Agency
2002

Precipitation

California Mean Annual Precipitation Zones, 1900-
1960
Vector digital data
California Department of Forestry and Fire
Protection 1990
1:100,000
<http://frap.cdf.ca.gov/data/frapgisdata/select.asp>

Roads

TGRR00
vector digital data
Roads
United States Census Bureau
1:100000
2000
<http://www.census.gov/geo/www/tiger/>

Elevation

Spln_mos_06
10 Meter Digital Elevation Model (DEM)
NOAA Fisheries, Santa Cruz Laboratory
2003

Vegetation

fveg02_2
raster digital data
Multi-source Land Cover Data
California Department of Forestry and Fire
Protection
100 meter Grid
2002
<http://frap.cdf.ca.gov/data/frapgisdata/select.asp>

Erodability

Highly Erodible Watersheds
vector digital data
Dept. of Conservation, Division of Mines &
Geology
Minimum Mapping Unit: Approximately 8000
Acres (20,000 Hectares)
1994
<http://gis.ca.gov/catalog/BrowseRecord.epl?id=380>

Land Ownership

GOVTOWNA
vector digital data
California Department of Forestry Forest and
Rangeland Resources Assessment Program
Bureau of Land Management Surface Management
1:100,000
September 1999
<http://old.casil.ucdavis.edu/casil/gis.ca.gov/teale/govtowna/>

Developed Area and Population

Census 2000 Block Data (Migrated)
vector digital data
California and the Department of Forestry and Fire
Protection, FRAP
2003
1:100,000
<http://frap.cdf.ca.gov/data/frapgisdata/select.asp>

Imagery

Google Maps
remote-sensing image
raster digital data
2008

Historic Suitable Habitat (Coho, Steelhead)

Intrinsic Potential Model
vector digital data
NOAA Fisheries
Santa Cruz Laboratory, Santa Cruz, CA
2005
<http://swfsc.noaa.gov/>

Toxins

Hazardous_&_solid_waste_sites
Better Assessment Science Integrating point and
Nonpoint Sources (BASINS)
vector digital data
United States Environmental Protection Agency
2001
<http://www.epa.gov/waterscience/basins/>

mines
vector digital data
Better Assessment Science Integrating point and
Nonpoint Sources (BASINS)
United States Environmental Protection Agency
2001
<http://www.epa.gov/waterscience/basins/>

Records Management System (RMS)

Public Consultation Tracking System (PCTS)
National Marine Fisheries Service
Oracle Databases
2008

Flood Zones

FEMA Flood Insurance Maps 1996
Vector digital data
Federal Emergency Management Agency
Q3 Flood Data Program
1996
<http://www.fema.gov/>