Watershed Characterization

San Gregorio Creek Watershed

Area	Hydrologic Units	Calwater Subbasins ---	(Planning Watersheds)
33,301 Acres	18050006	2202300001	La Honda Creek (7327 Acres)
13,476 Hectares	4th Field **HUC**	2202300002	Harrington Creek (8274 Acres)
52 Square Miles		2202300003	El Corte de Madera Creek (6333 Acres)
	2203	2202300004	Clear Creek (5390 Acres)
Location	4th Field **Calwater**	2202300005	Mindego Creek (5977 Acres)
County			

Species Potential	Miles of Streams with Species Present
Central California Coast **Steelhead**	Steelhead
Santa Cruz Mountains Diversity Stratum	40
- Independent Population	NOAA Fisheries, Critical Habitat Redesignation, 2005
Central California Coast **Coho**	Coho
Santa Cruz Mountains Diversity Stratum	0
- Dependent Population	CDFG, Coho Distribution, May 2007

Critical Habitat

Central California Coast Steelhead	40 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		11
Intermittent Stream	70	4 - Impassable
Perennial Stream	46	1 - Not a Barrier
Artificial Path	1	3 - Temporal Barriers
		3 - Unknow Barrier Status

[C]Passage Assessment Database, Pacific States Marine Fisheries Commission, 2005

[A]USGS National Hydrography Dataset, High Resolution, 2004. 1:24,000

USGS Gaging Stations[B]	Number of Barriers[C]
11162570	47
San Gregorio Creek at San Gregorio	11 Dams
	11 Road Crossings (2 Impassable, 7 Temp. &/or Partially Impassable)
	21 Natural Barriers (Chutes, Falls, Log Jams, etc. (11 Impassable))

[C]Passage Assessment Database, Pacific States Marine Fisheries Commission, 2006

EPA Total Maximum Daily Load Classification (**TMDL**)[I]

Low Priority - High Coliform Count Medium Priority - Sediment/Siltation

Sources: Nonpoint Sources

[I]State Water Resources Control Board, 2003

Approriated Waterways[J]

San Gregorio Creek is Fully appropriated (6/1 to 10/31)

[J]California State Water Resources Control Board, 1998.

Average Annual **Precipitation**[E]	Average Annual **Precipitation Range**[E]
31.1"	18 - 45"

[E]California Mean Annual Precipitation Zones, 1900-1960, CA Department of Forestry, 1990

Roads[A]	Miles
Roads in Watershed	
Secondary and connecting road, state highways	22
Local, neighborhood, and rural road, city street, unseparated	99
Vehicular trail, 4WD	12
Driveway or service road	23
Total Miles	

Road Density	
Miles of Roads per SqMi of Watershed	3.0
Miles of Roads per SqMi of 100m Riparian Buffer*	3.2

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

[A]U.S. Census Bureau - Tiger 2000, 2002. 1:24,000

Slope[D]	Acres	Percent of watershed
Lands of 0-2 percent slope	294	1%
Lands of 2-4 percent slope	401	1%
Lands of 4-10 percent slope	1,962	6%
Lands of 10-15 percent slope	2,629	8%
Lands of 15-30 percent slope	10,994	33%
Lands of 30-60 percent slope	14,910	45%
Lands of 60-100 percent slope	2,103	6%
Lands of 100-117 percent slope	9	0%
Elevation Range	0 - 2569 ft.	0 - 783 m

[D]Slope derived from USGS 10 meter Digital Elevation Models (DEM's)

Vegetation[G]	Acres	Percent of watershed
Agriculture	247	1%
Annual grassland	7,665	23%
Conifer Forest		
Douglas Fir	462	1%
Montane Hardwood-Conifer	106	0%
Redwood	8,090	24%
Unknown Conifer	2,192	7%
Hardwood Forest		
Montane Hardwood	2	0%
Hardwood Woodland		
Coastal Oak Woodland	210	1%
Shrub	12,980	39%
Urban	1,366	4%
Water	10	0%

[G]Multi-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 5	33,301	100%

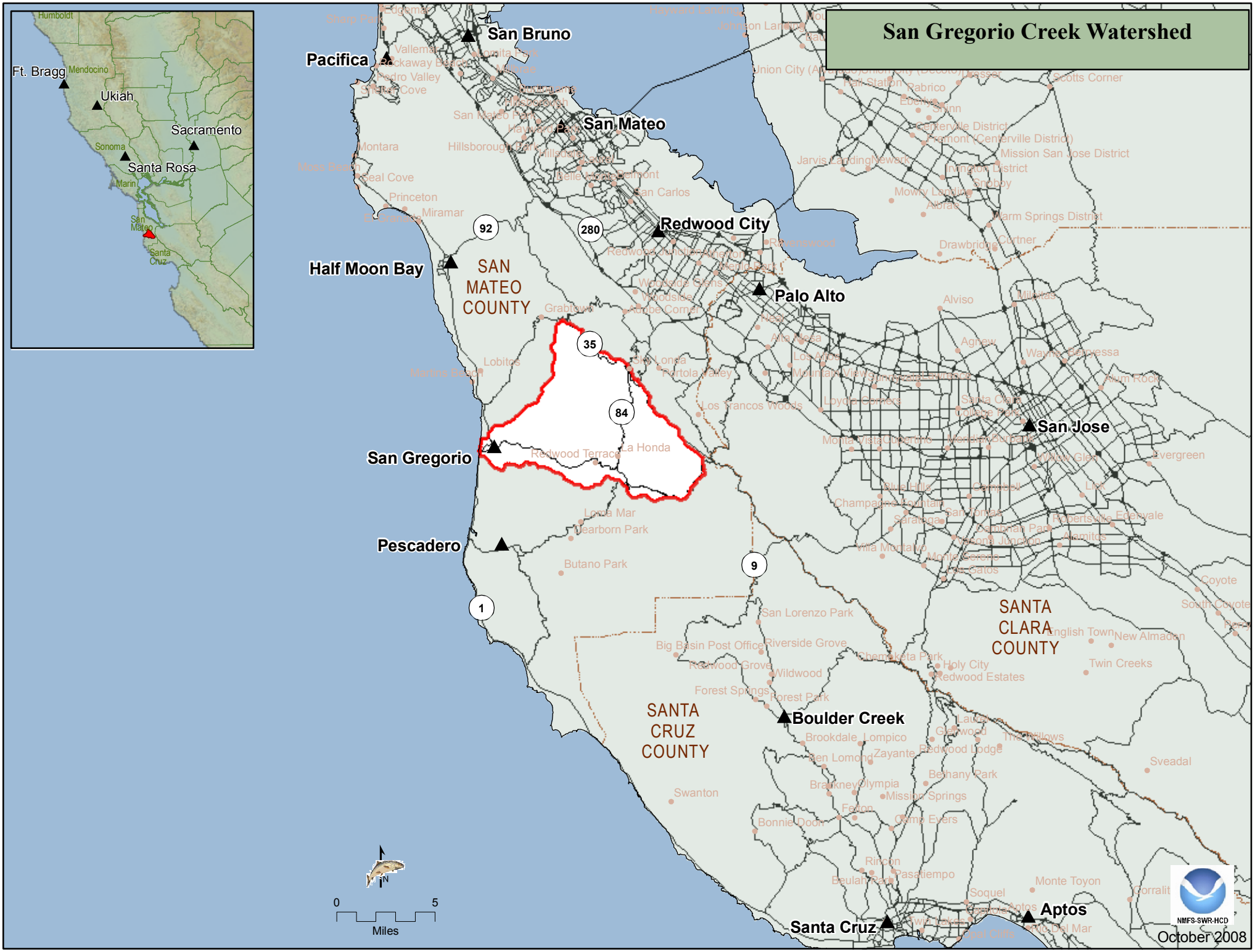
[F]Department of Conservation, Division of Mines and Geology; minimum mapping unit: approx. 8000 acres
Watersheds were rated based on slope, precipitation, and lithologic susceptibility to failure. Total erosion potential is based on a combination of the landslide potential, debris slide potential, and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

Land Ownership[H]	Acres	Percent of watershed
Private	32,526	98%
Local (City / County Park)	672	2%
State (Parks & Recreation)	103	0%

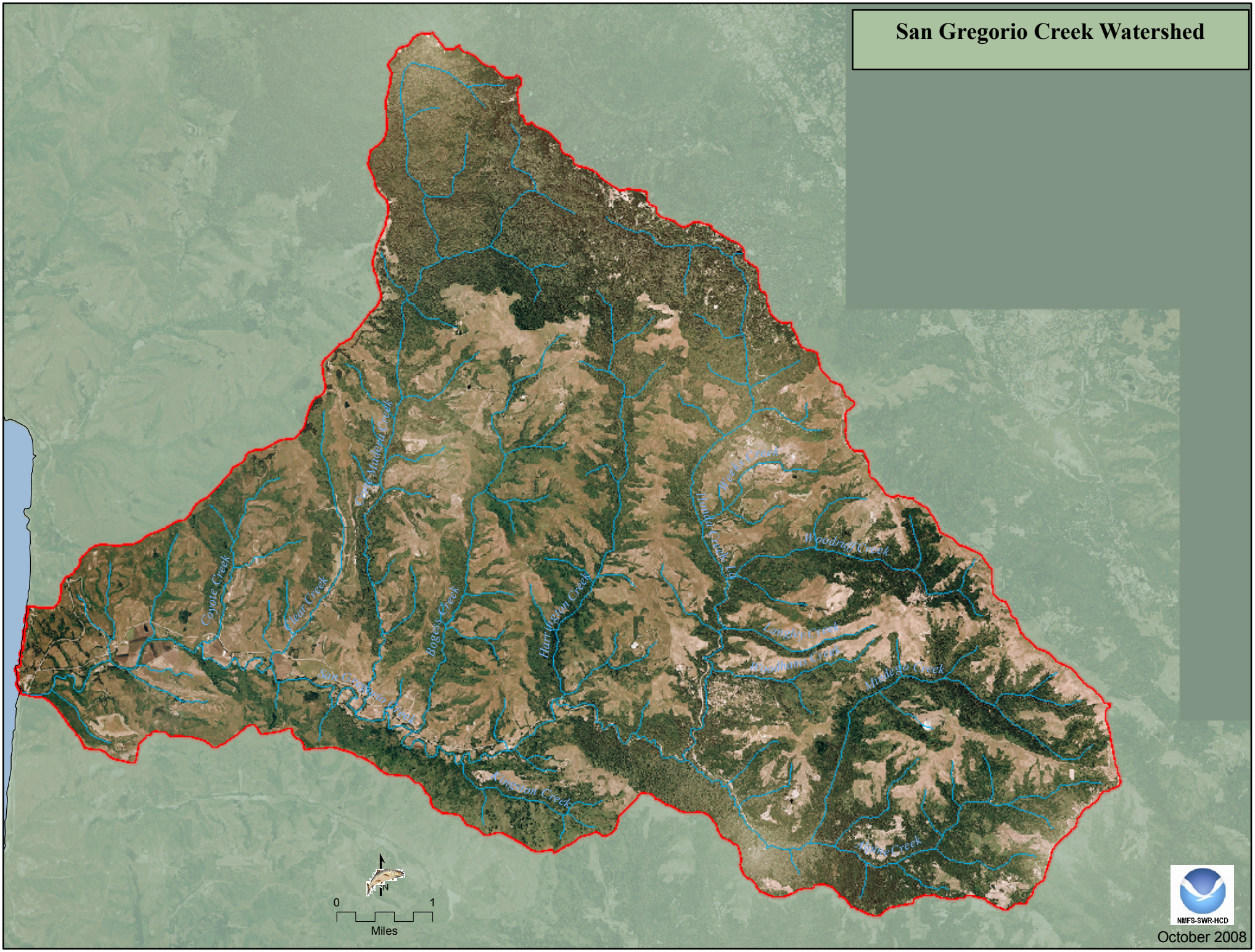
[H]Management Landscape, CA Department of Forestry, 2002

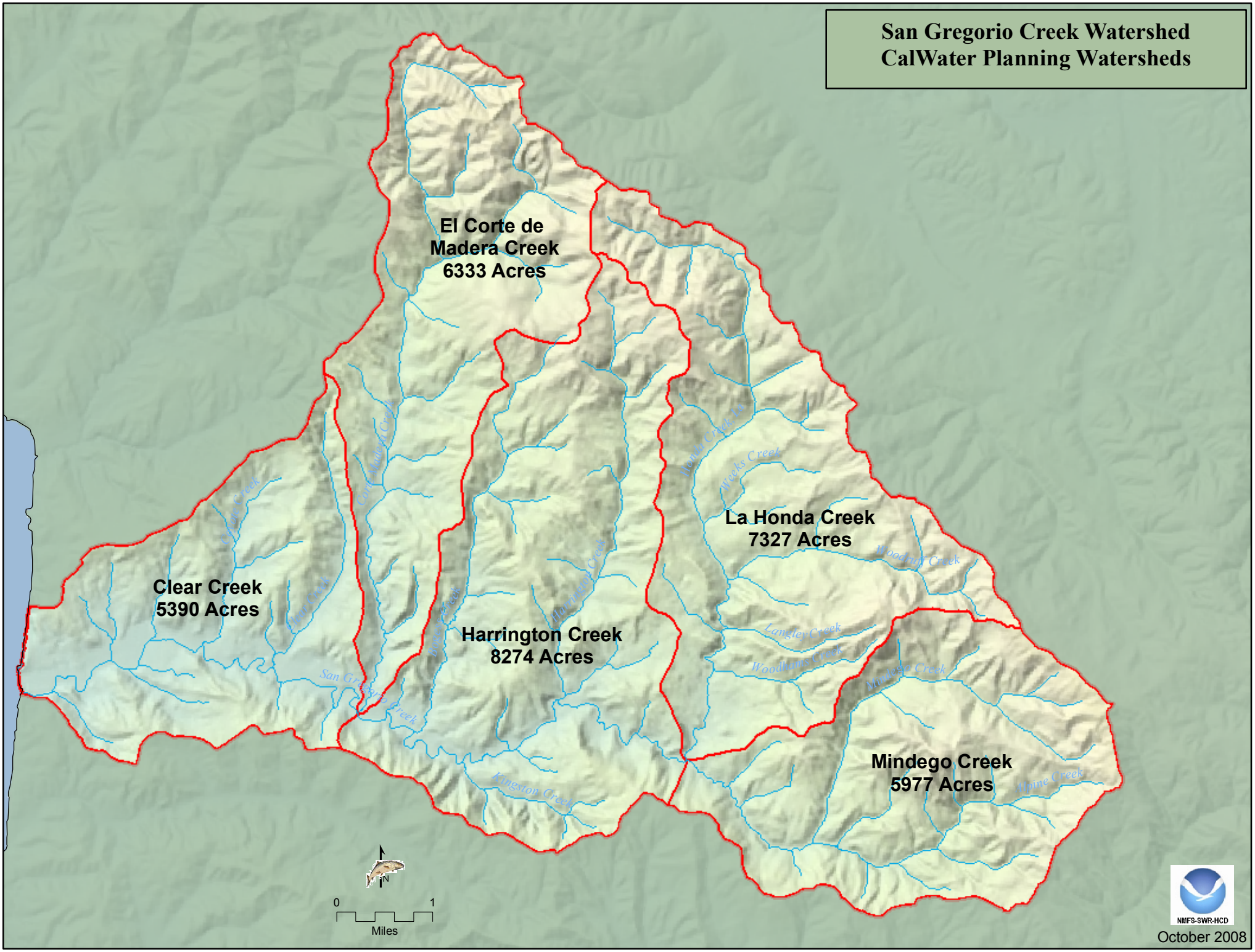
Population[I]	Housing[I]	
Total Population within the watershed -- 2,458 People	Total Housing Units within the watershed -- 1,007 Houses	
	Housing Density	
	0 to Less than 1 Housing Unit / 160 Acres	40%
	1 Unit / 160 Acres to 1 Unit / 20 Acres	54%
	1 Unit / 20 Acres to 1 Unit / 5 Acres	4%
	1 Unit / 5 Acres to 2 Units / Acre	2%
	2 Units / Acres to Greater than or Equal to 5 Units / Acre	

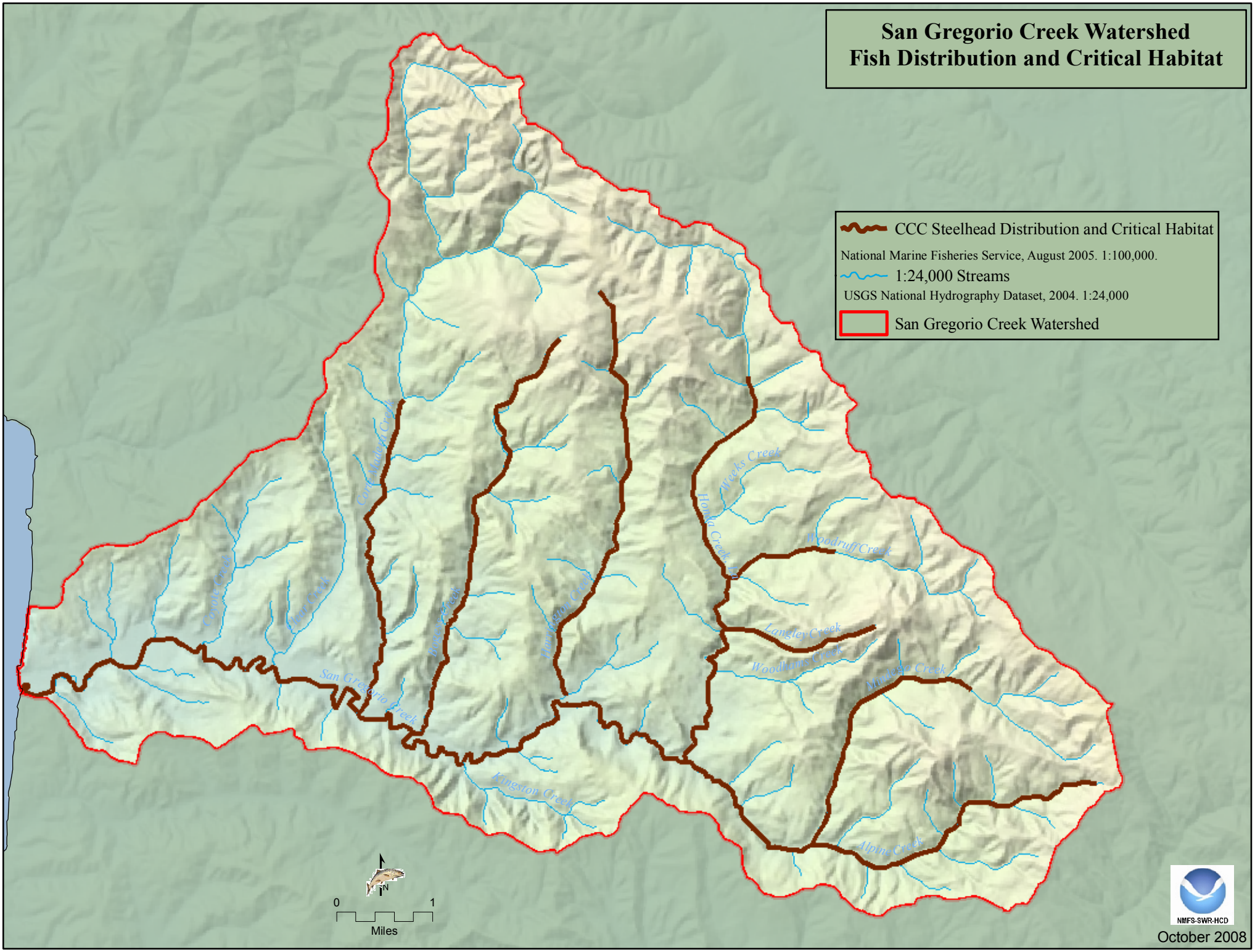
[I]Census 2000 Block Data (Migrated), CA Department of Forestry, 2003

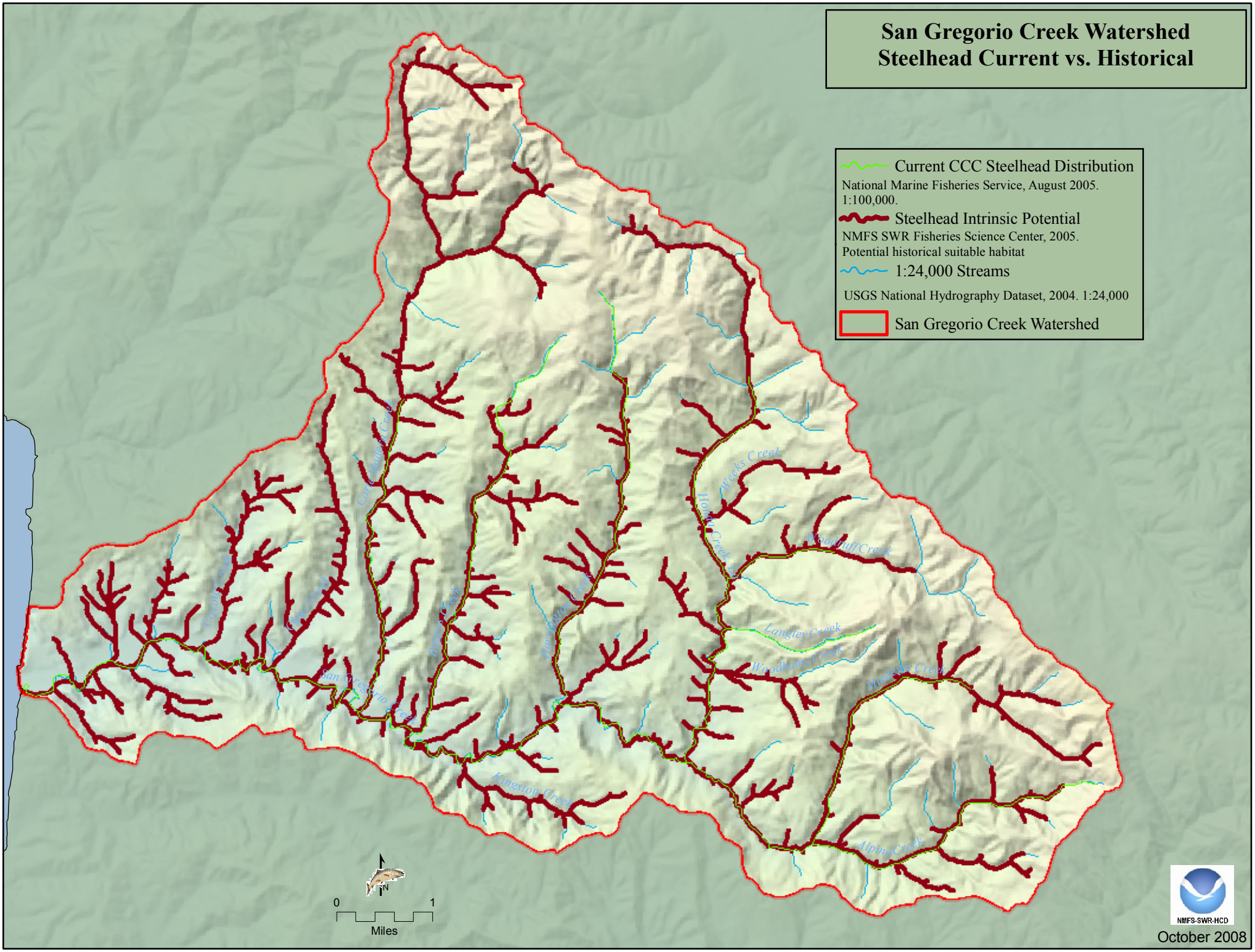

San Gregorio Creek Watershed
Humboldt
Ft. Bragg
Mendocino
Ukiah
Sacramento
Sonoma
Santa Rosa
Marin
San Mateo
Santa Cruz
San Bruno
Pacifica
San Mateo
Redwood City
Half Moon Bay
SAN MATEO COUNTY
Palo Alto
San Jose
San Gregorio
Pescadero
Boulder Creek
SANTA CRUZ COUNTY
SANTA CLARA COUNTY
Santa Cruz
Aptos
92
280
35
84
9
1
0
5
Miles
N
NMFS-SWR-HCD
October 2008

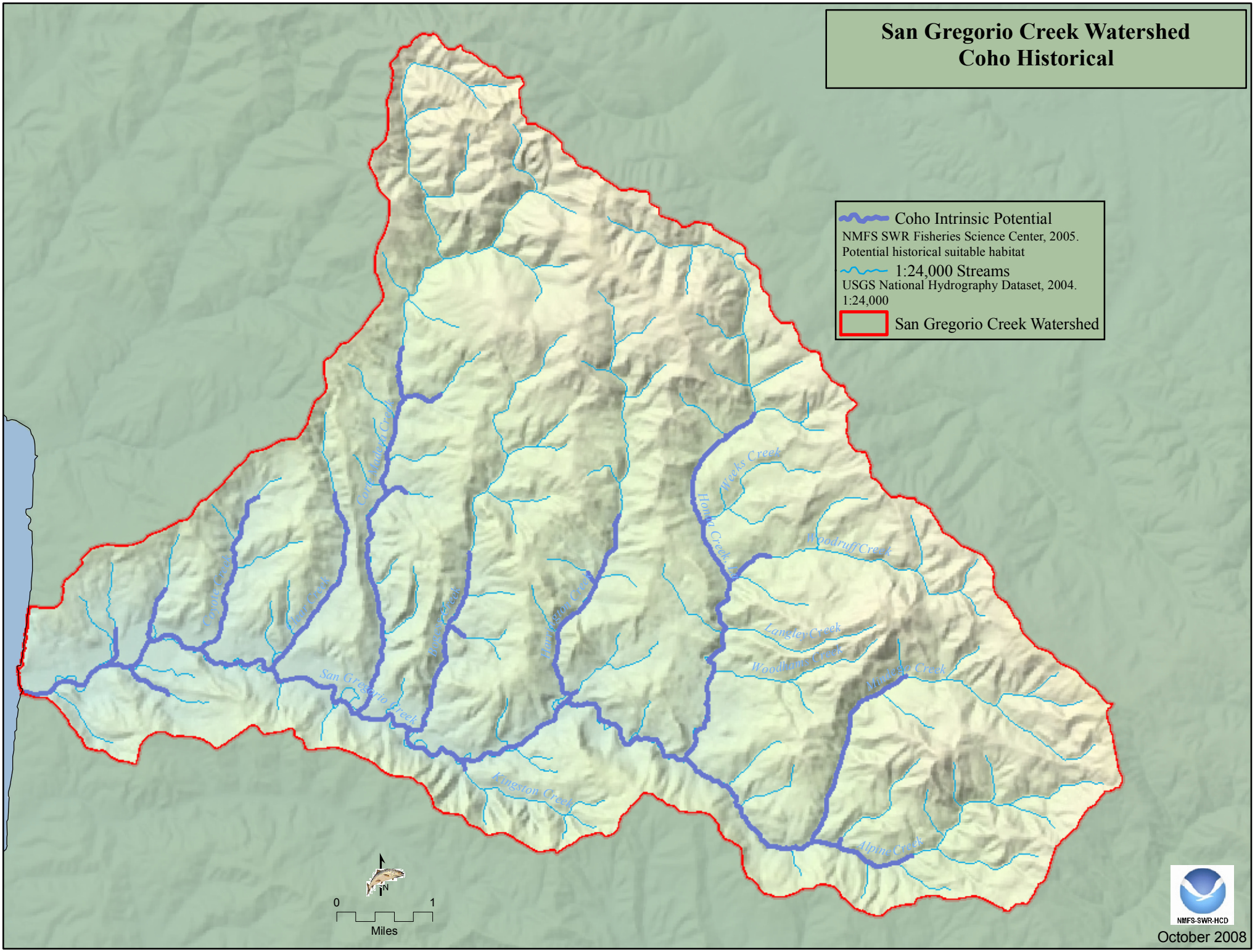
San Gregorio Creek Watershed



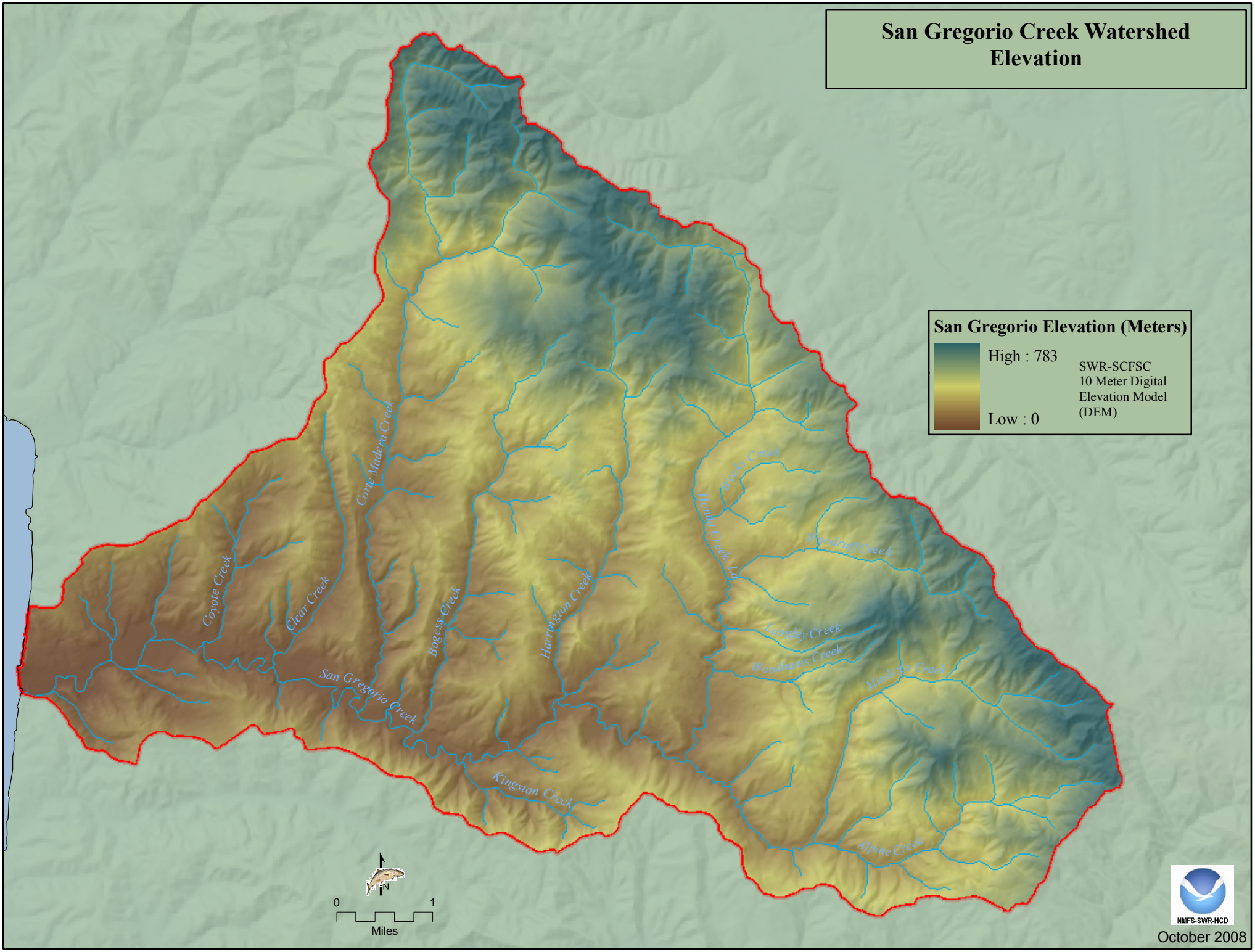

San Gregorio Creek Watershed
CalWater Planning Watersheds
El Corte de Madera Creek
6333 Acres
Clear Creek
5390 Acres
Harrington Creek
8274 Acres
La Honda Creek
7327 Acres
Mindego Creek
5977 Acres
Clear Creek
Corte Madera Creek
Pomponio Creek
Harrington Creek
Honda Creek
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
San Gregorio Creek
Kingston Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008


San Gregorio Creek Watershed
Fish Distribution and Critical Habitat
CCC Steelhead Distribution and Critical Habitat
National Marine Fisheries Service, August 2005. 1:100,000.
1:24,000 Streams
USGS National Hydrography Dataset, 2004. 1:24,000
San Gregorio Creek Watershed
Corte Madera Creek
Weeks Creek
Honda Creek
Woodruff Creek
Coyote Creek
Bear Creek
Brook Creek
Harrington Creek
Langley Creek
Woodhams Creek
Mindego Creek
San Gregorio Creek
Kingston Creek
Alpine Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008

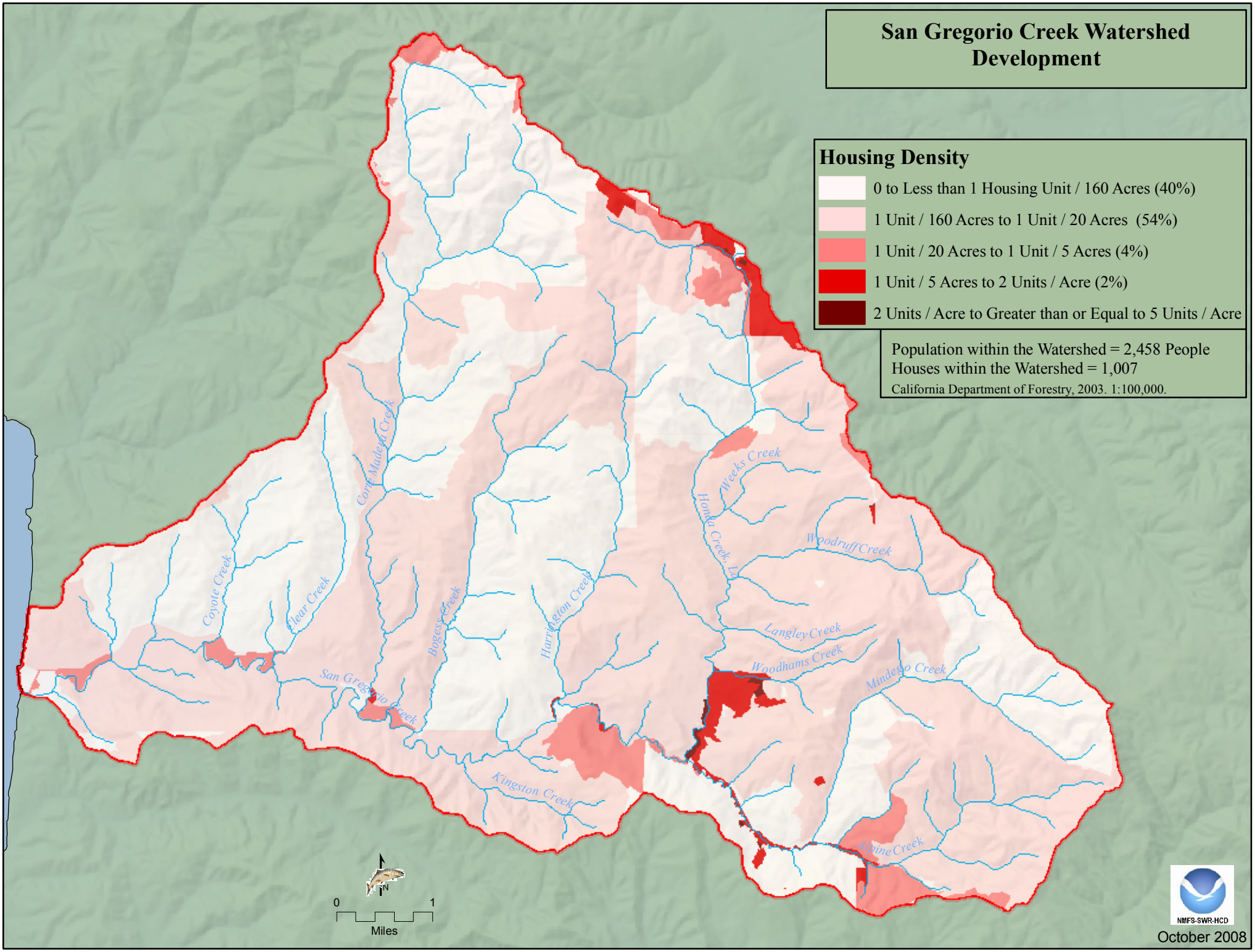

San Gregorio Creek Watershed
Steelhead Current vs. Historical
Current CCC Steelhead Distribution
National Marine Fisheries Service, August 2005.
1:100,000.
Steelhead Intrinsic Potential
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat
1:24,000 Streams
USGS National Hydrography Dataset, 2004. 1:24,000
San Gregorio Creek Watershed
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
Kingston Creek
San Gregorio Creek
Harrington Creek
Brown Creek
Cortez Gulch Creek
Cotton Creek
Cloverdale Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008

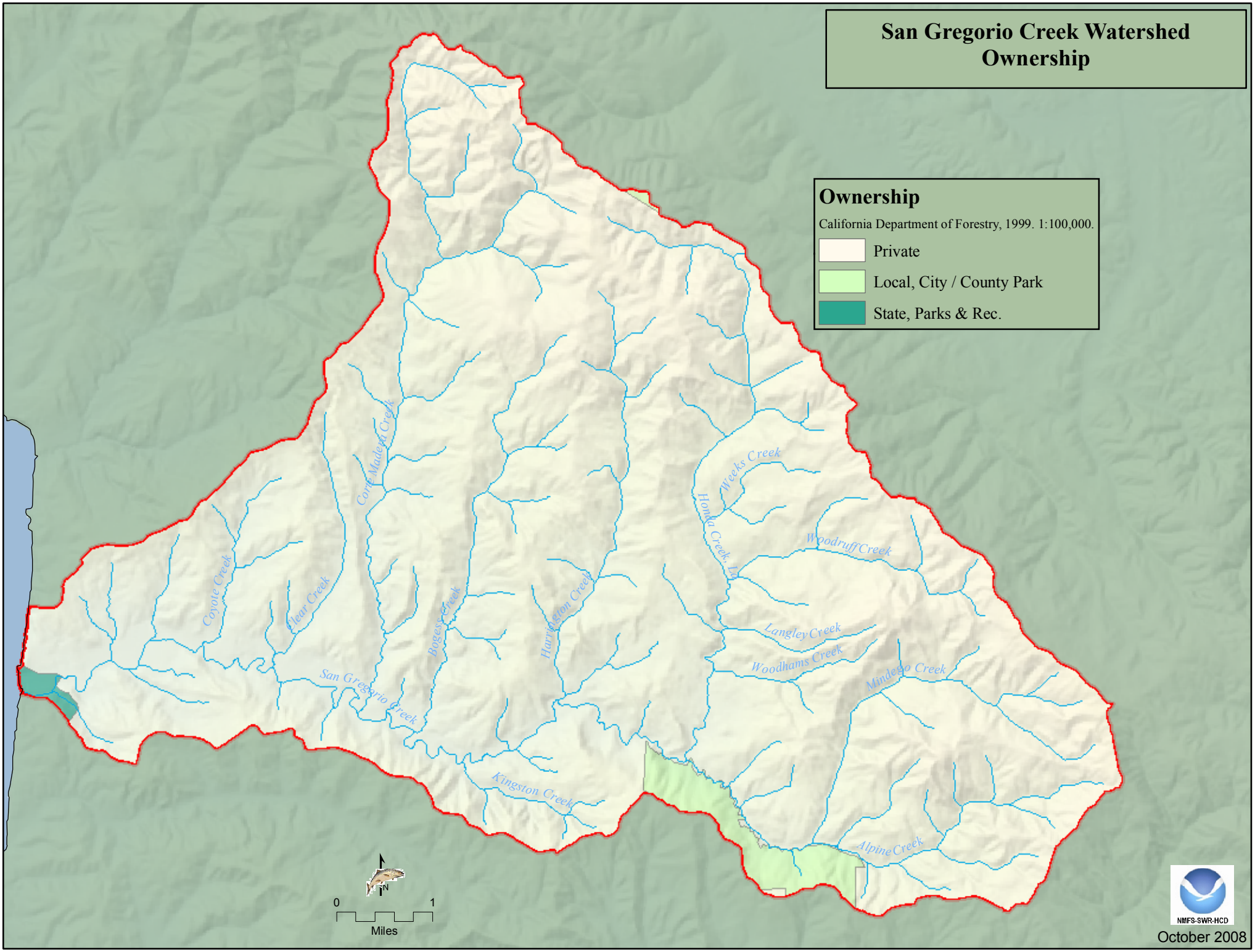

San Gregorio Creek Watershed
Coho Historical
Coho Intrinsic Potential
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat
1:24,000 Streams
USGS National Hydrography Dataset, 2004.
1:24,000
San Gregorio Creek Watershed
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
Kingston Creek
San Gregorio Creek
0
1
Miles
N
NMFS-SWR-HCD
October 2008

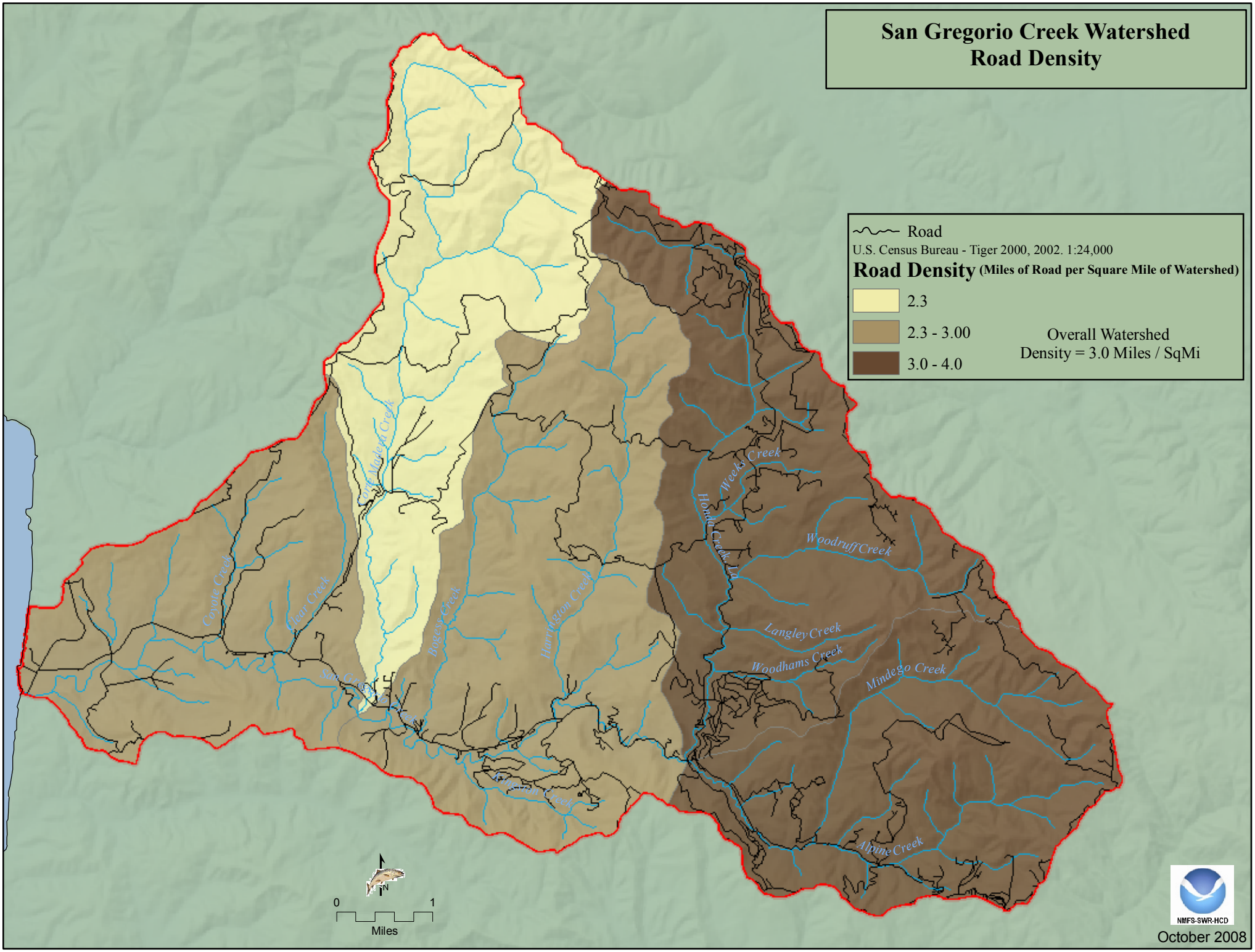
San Gregorio Creek Watershed Elevation



October 2008


San Gregorio Creek Watershed
Development
Housing Density
0 to Less than 1 Housing Unit / 160 Acres (40%)
1 Unit / 160 Acres to 1 Unit / 20 Acres (54%)
1 Unit / 20 Acres to 1 Unit / 5 Acres (4%)
1 Unit / 5 Acres to 2 Units / Acre (2%)
2 Units / Acre to Greater than or Equal to 5 Units / Acre
Population within the Watershed = 2,458 People
Houses within the Watershed = 1,007
California Department of Forestry, 2003. 1:100,000.
Corte Madera Creek
Coyote Creek
Alear Creek
Bogess Creek
Harrington Creek
Honka Creek
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
San Gregorio Creek
Kingston Creek
Alpine Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008


San Gregorio Creek Watershed
Ownership
Ownership
California Department of Forestry, 1999. 1:100,000.
Private
Local, City / County Park
State, Parks & Rec.
Coyote Creek
Clear Creek
Corte Madera Creek
Bogess Creek
Harrington Creek
Honda Creek
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
Kingston Creek
San Gregorio Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008


San Gregorio 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)
2.3
2.3 - 3.00
3.0 - 4.0
Overall Watershed
Density = 3.0 Miles / SqMi
Corte Madera Creek
Coyote Creek
Clear Creek
San Gregorio Creek
Bogess Creek
Harrington Creek
Weeks Creek
Honda Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008

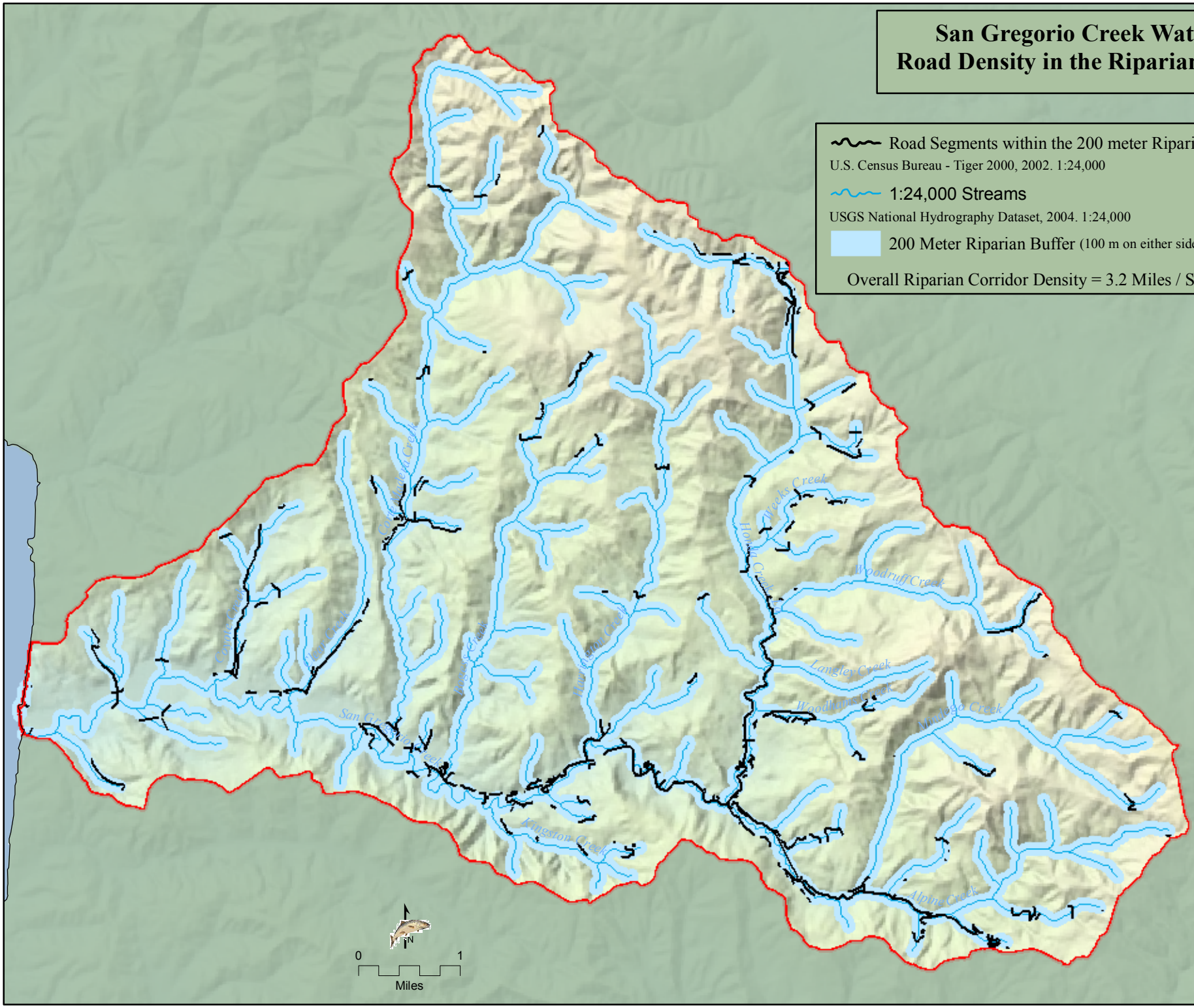
San Gregorio Creek Watershed
Road Density in the Riparian Corridor

Road Segments within the 200 meter Riparian Corridor
U.S. Census Bureau - Tiger 2000, 2002. 1:24,000

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

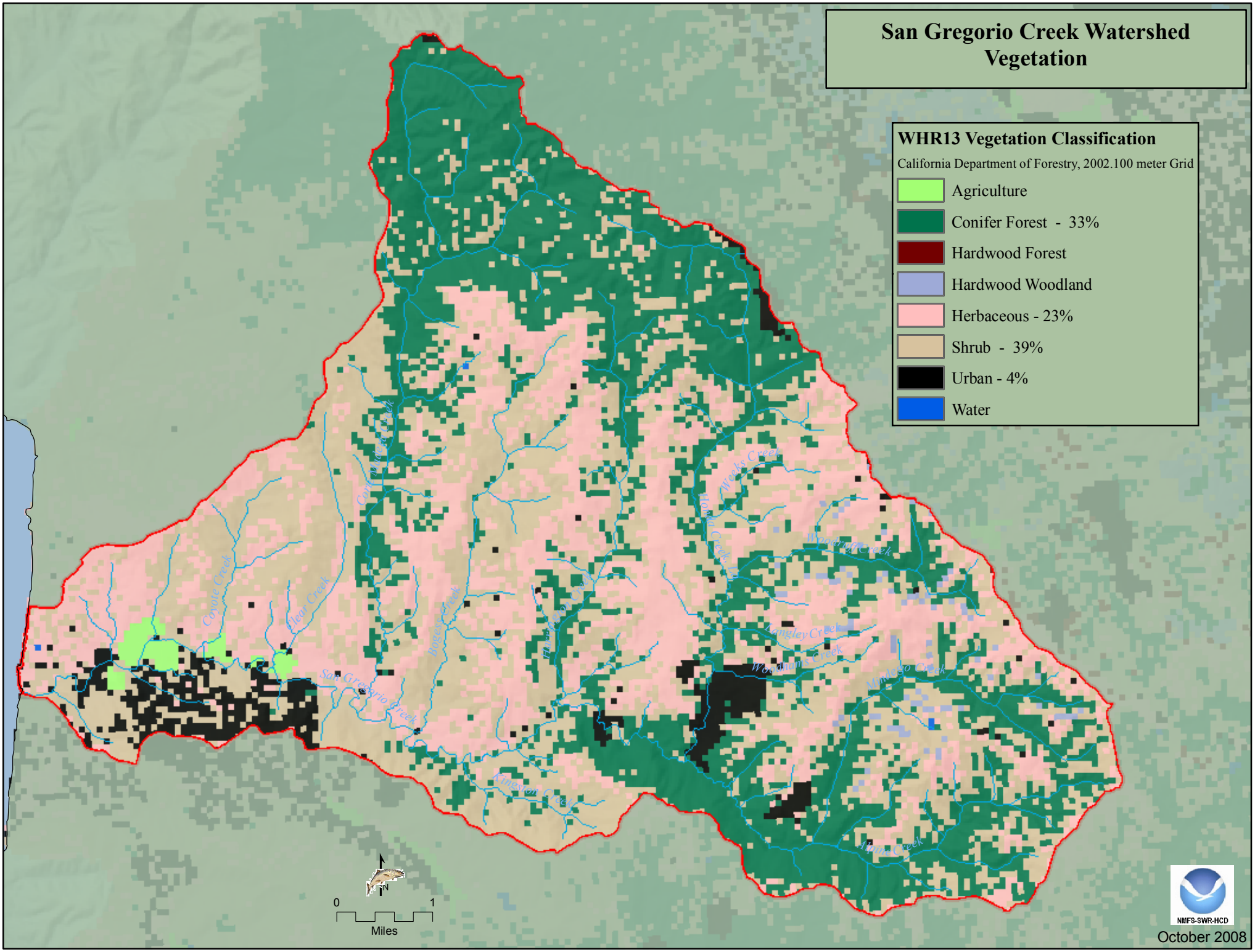
200 Meter Riparian Buffer (100 m on either side of stream centerline)

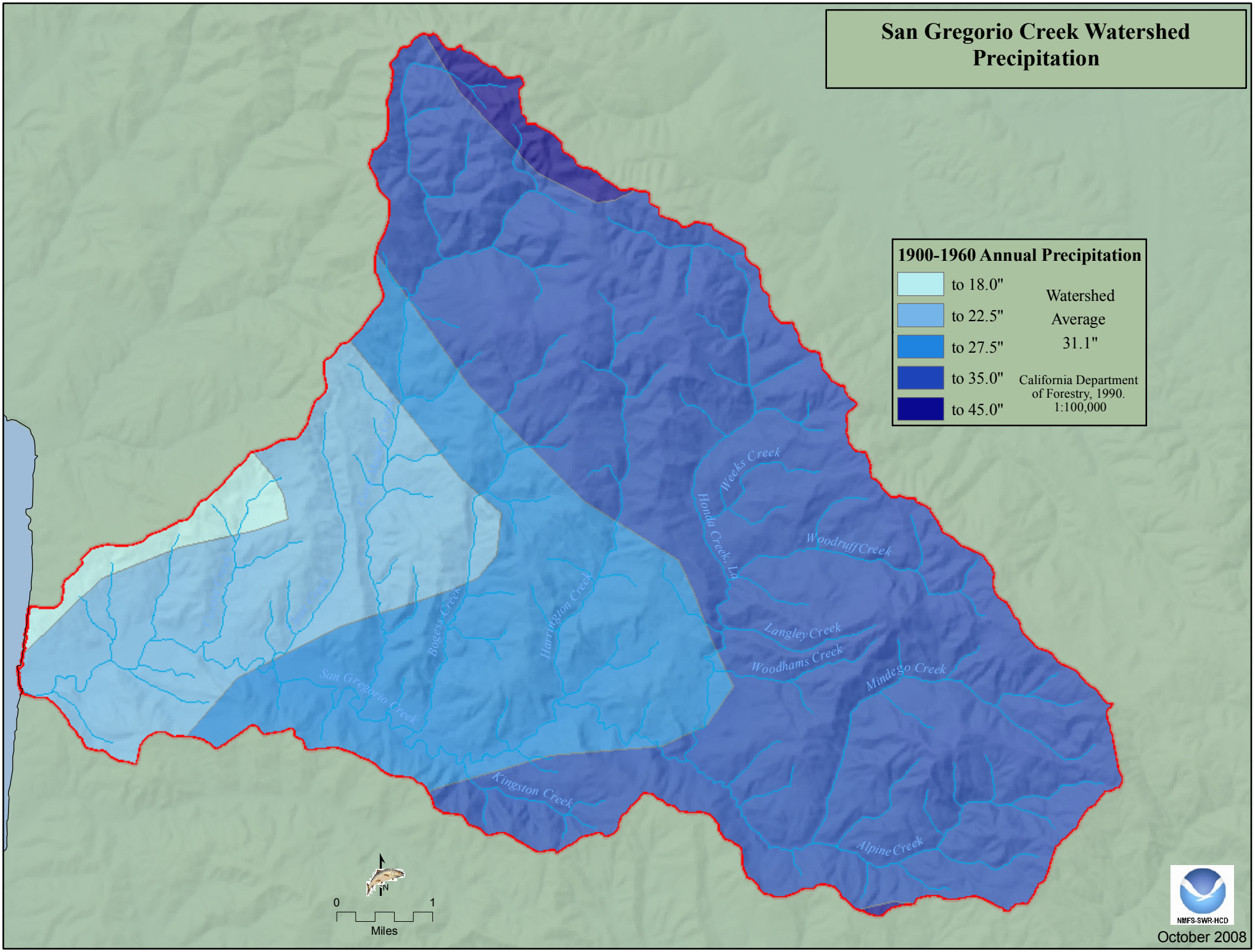
Overall Riparian Corridor Density = 3.2 Miles / SqMi of Corridor



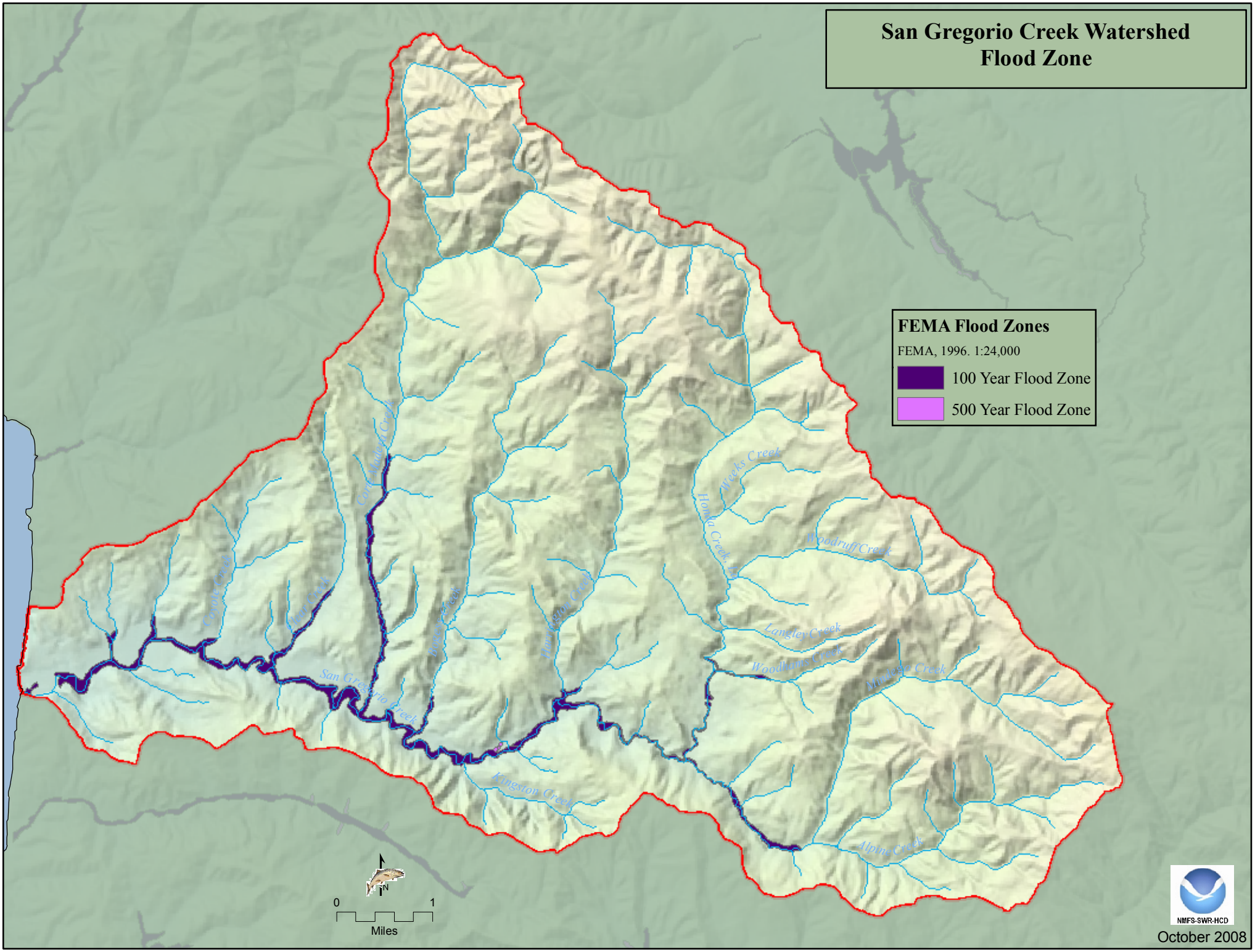
NMFS-SWR-HCD

October 2008

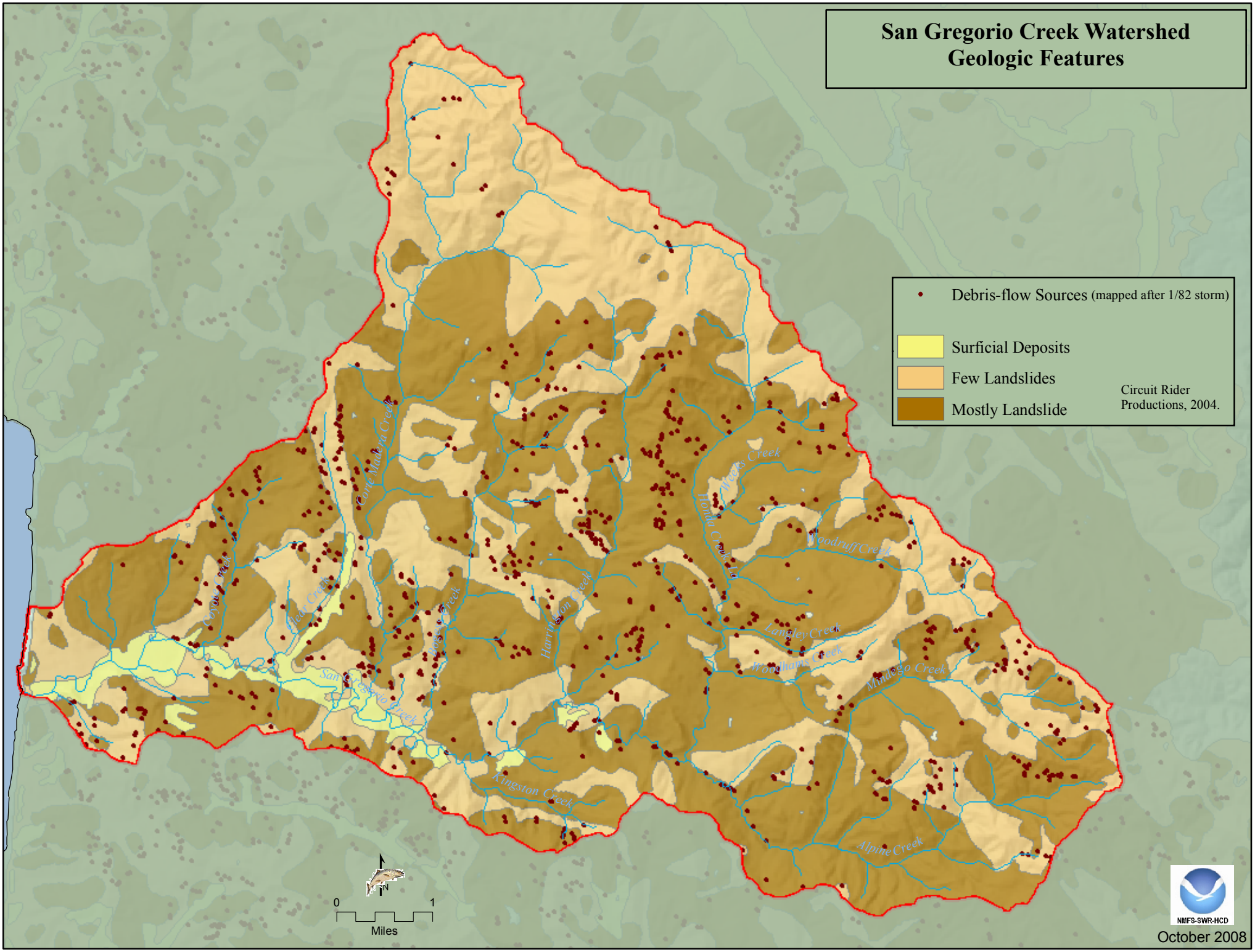

San Gregorio Creek Watershed
Vegetation
WHR13 Vegetation Classification
California Department of Forestry, 2002.100 meter Grid
Agriculture
Conifer Forest - 33%
Hardwood Forest
Hardwood Woodland
Herbaceous - 23%
Shrub - 39%
Urban - 4%
Water
Coyote Creek
Clear Creek
Bogess Creek
San Gregorio Creek
Kingston Creek
Weeks Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008

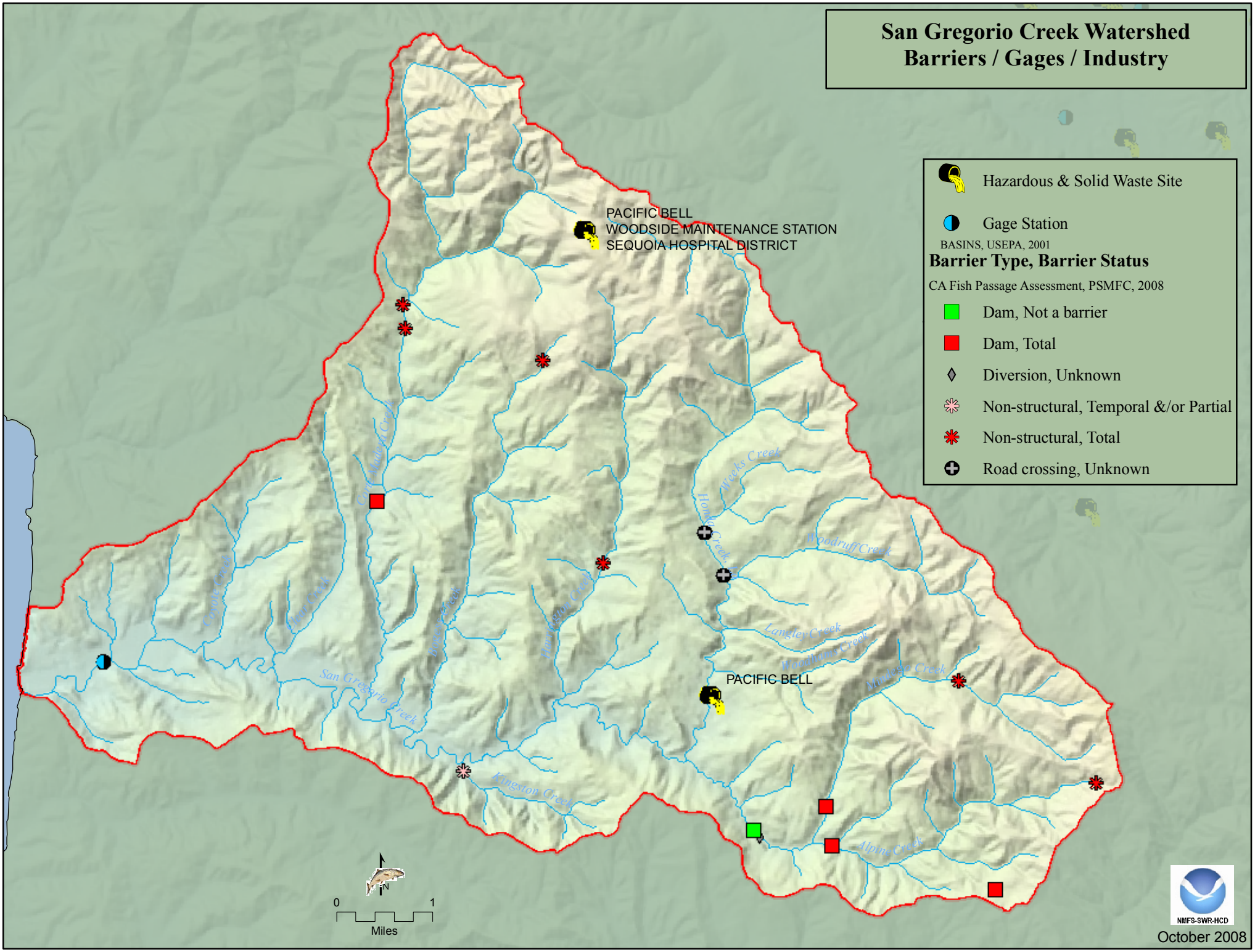

San Gregorio Creek Watershed
Precipitation
1900-1960 Annual Precipitation
to 18.0"
to 22.5"
to 27.5"
to 35.0"
to 45.0"
Watershed
Average
31.1"
California Department
of Forestry, 1990.
1:100,000
Weeks Creek
Honda Creek, La
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
Alpine Creek
Harrington Creek
Bogess Creek
San Gregorio Creek
Kingston Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008

San Gregorio Creek Watershed Flood Zone

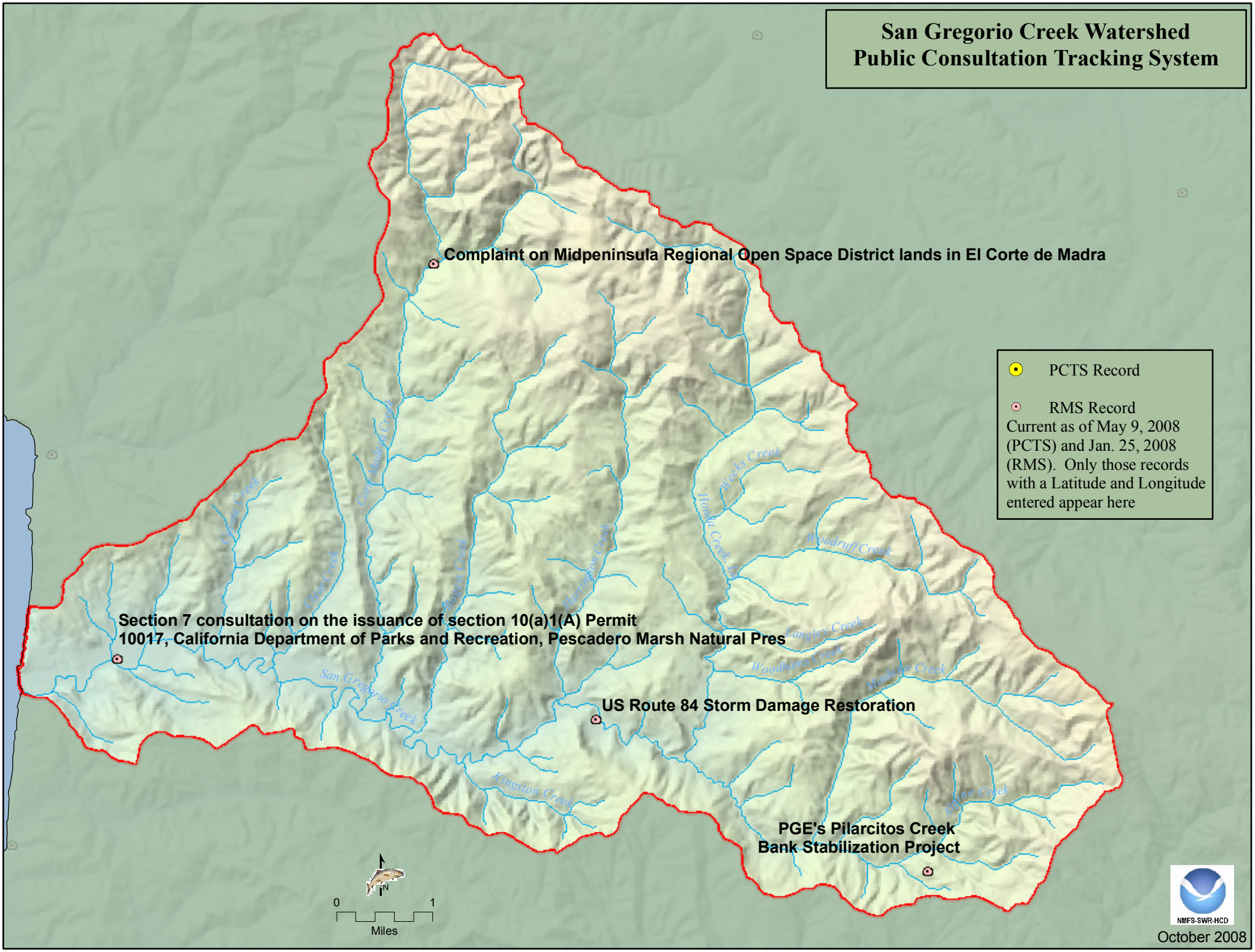


October 2008


San Gregorio Creek Watershed
Geologic Features
Debris-flow Sources (mapped after 1/82 storm)
Surficial Deposits
Few Landslides
Mostly Landslide
Circuit Rider Productions, 2004.
Corte Madera Creek
Coyote Creek
Pear Creek
Harrington Creek
Weeks Creek
Honda Creek
Woodruff Creek
Langley Creek
Woodhams Creek
Mindego Creek
San Gregorio Creek
Kingston Creek
Alpine Creek
N
0
1
Miles
NMFS-SWR-HCD
October 2008


San Gregorio Creek Watershed
Barriers / Gages / Industry
Hazardous & Solid Waste Site
Gage Station
BASINS, USEPA, 2001
Barrier Type, Barrier Status
CA Fish Passage Assessment, PSMFC, 2008
Dam, Not a barrier
Dam, Total
Diversion, Unknown
Non-structural, Temporal &/or Partial
Non-structural, Total
Road crossing, Unknown
PACIFIC BELL
WOODSIDE MAINTENANCE STATION
SEQUOIA HOSPITAL DISTRICT
PACIFIC BELL
Weeks Creek
Honda Creek
Woodruff Creek
Langley Creek
Woodhills Creek
Mindego Creek
Alpine Creek
Kingston Creek
San Gregorio Creek
Coyote Creek
Corte Madera Creek
Bear Creek
Hawkins Creek
0
1
Miles
N
NMFS-SWR-HCD
October 2008

San Gregorio Creek Watershed
Public Consultation Tracking System



October 2008

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
1805 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_september2008
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 Protection1990
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_02
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

Erodabilty
Srp_landslide
Landslide Areas
Vector digital data
Circuit Rider Productions, Inc.
2004

Srp_82_debrisfl_Source
Debris Flow Sources
Vector digital data
Circuit Rider Productions, Inc.
2004

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
naip_1-1_2n_s_ca081_2004_1 (San Mateo)
remote-sensing image
raster digital data
National Agriculture Imagery Program (NAIP)
USDA-FSA Aerial Photography Field Office
Salt Lake City, Utah
2006
http://datagateway.nrcs.usda.gov/GatewayHome.html

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

Fully Appropriated Streams
Declaration of Fully Appropriated Stream Systems
State Water Resources Control Board
State of California
November 19, 1998
http://www.waterrights.ca.gov/html/faslist.htm

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