Watershed Characterization

July 2008

NMFS-SWR-HCD

Scott Creek Watershed

Area	Hydrologic Units	Calwater Subbasins ---	(Planning Watersheds)
19,012 Acres	18060001	3304110201	Big Creek (7201 Acres)
7694 Hectares	4th Field **HUC**	3304110202	Little Creek (3013 Acres)
30 Square Miles		3304110204	Scott Creek (8798 Acres)
	3304		
	4th Field **Calwater**		

Location

Santa Cruz County

Species Potential	Miles of Streams with Species Present
Central California Coast **Steelhead**	Steelhead
Santa Cruz Mountains Diversity Stratum	16
- Potentially Independent	NOAA Fisheries, Critical Habitat Redesignation, 2005
Central California Coast **Coho**	Coho
Santa Cruz Mountains Diversity Stratum	13
- Dependent Population	CDFG, Coho Distribution, May 2007

Critical Habitat

Central California Coast Steelhead	16 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		2
Intermittent Stream	10	1 - Impassable
Perennial Stream	45	1 - Not a Barrier
Canal / Ditch	2	
Artificial Path	1	

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

[C]Passage Assessment Database, Pacific States Marine Fisheries Commission, 2008

USGS **Gaging Stations**[B]	Number of **Barriers**[C]
11161900	23
Scott Creek above creek near Davenport	2 Dams
11162000	6 Road Crossings (1 Impassable, 2 Temp. &/or Partially Impassable)
Scott Creek near Davenport	9 Natural Barriers (Chutes, Falls, Log Jams, etc. (6 Impassable))

[C]Passage Assessment Database, Pacific States Marine Fisheries Commission, 2008

Average Annual **Precipitation**[E]	Average Annual **Precipitation Range**[E]
41.8"	27.5 - 65"

[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	0
Local, neighborhood, and rural road, city street, unseparated	26
Driveway or service road	3
Total Miles	29

Road Density	
Miles of Roads per SqMi of Watershed	1.0
Miles of Roads per SqMi of 100m Riparian Buffer*	1.5

*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	132	1%
Lands of 2-4 percent slope	278	1%
Lands of 4-10 percent slope	1,287	7%
Lands of 10-15 percent slope	1,311	7%
Lands of 15-30 percent slope	4,362	23%
Lands of 30-60 percent slope	8,740	46%
Lands of 60-100 percent slope	2,842	15%
Lands of 100-117 percent slope	58	0%
Elevation Range	0 - 2618 ft.	0 - 798 m

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

Vegetation[G]	Acres	Percent of watershed
Agriculture	257	1%
Annual grassland	578	3%
Conifer Forest		
Closed Cone-Pine-Cypress	7	0%
Redwood	7,386	39%
Unknown Conifer	5,953	31%
Hardwood Forest		
Montane Hardwood	141	1%
Hardwood Woodland		
Coastal Oak Woodland	161	1%
Shrub	4,394	23%
Urban	121	1%
Water	12	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 7		

[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**]

Area Under a **Timber Harvest Plan**[A] past **10** years		Area Under a **Timber Harvest Plan**[A] past **13** years (1994-2006)	
1,156	6% of watershed	2,339	12% of watershed

[A]California Department of Forestry, Timber Harvest Plans for Scott Watershed, 2006

Land Ownership[H]	Acres	Percent of watershed
Private	18124	95%
State (Parks & Recreation)	661	3%
Federal (Military)	226	1%

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

Population[I]

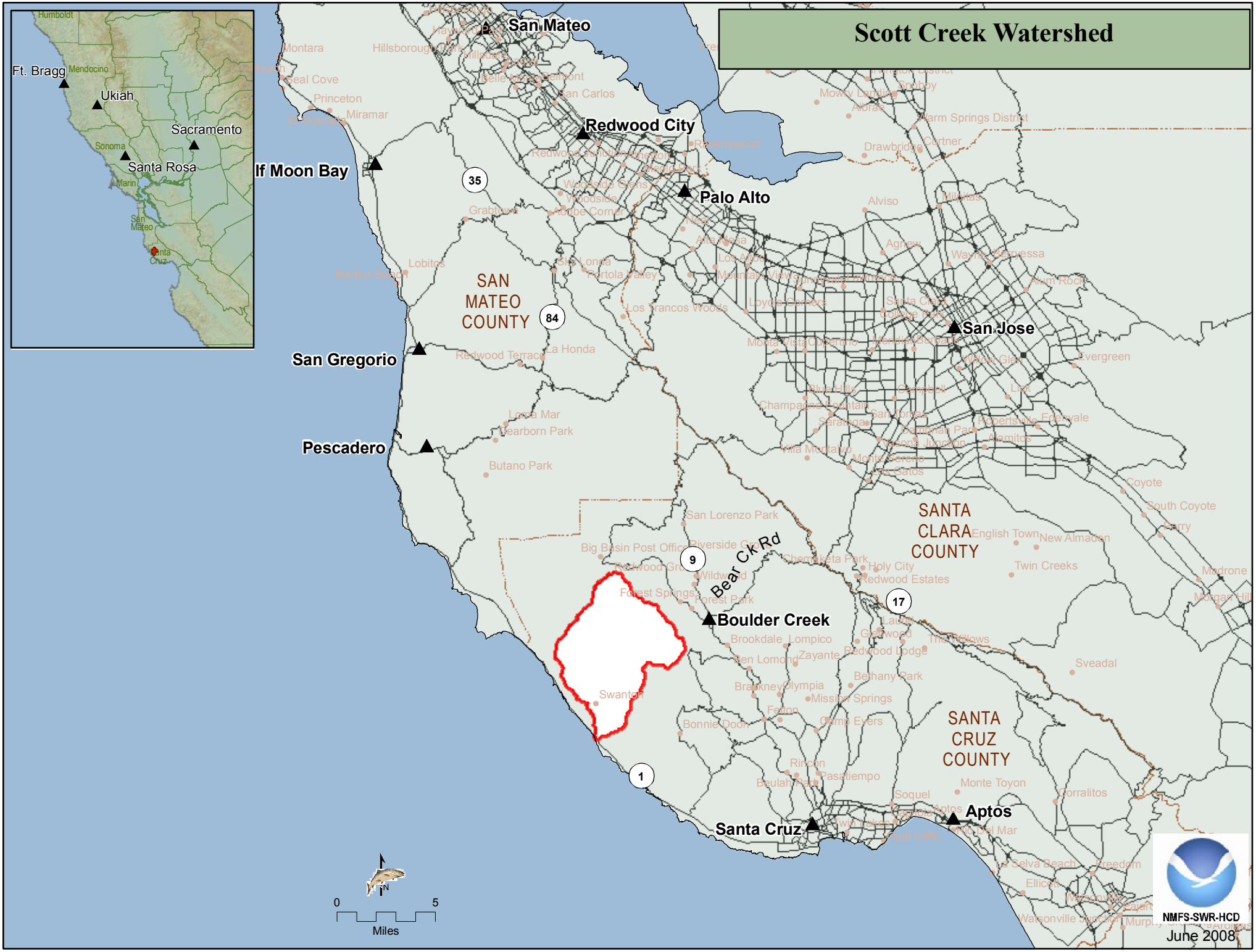
Total Population within the watershed -- 294 People

Housing[I]

Total Housing Units within the watershed -- 113 Houses

Housing Density	
0 to Less than 1 Housing Unit / 160 Acre	71%
1 Unit / 160 Acres to 1 Unit / 20 Acres	29%
1 Unit / 20 Acres to 1 Unit / 5 Acres	
1 Unit / 5 Acres to 2 Units / Acre	
2 Units / Acres to Greater than or Equal to 5 Units / Acre	

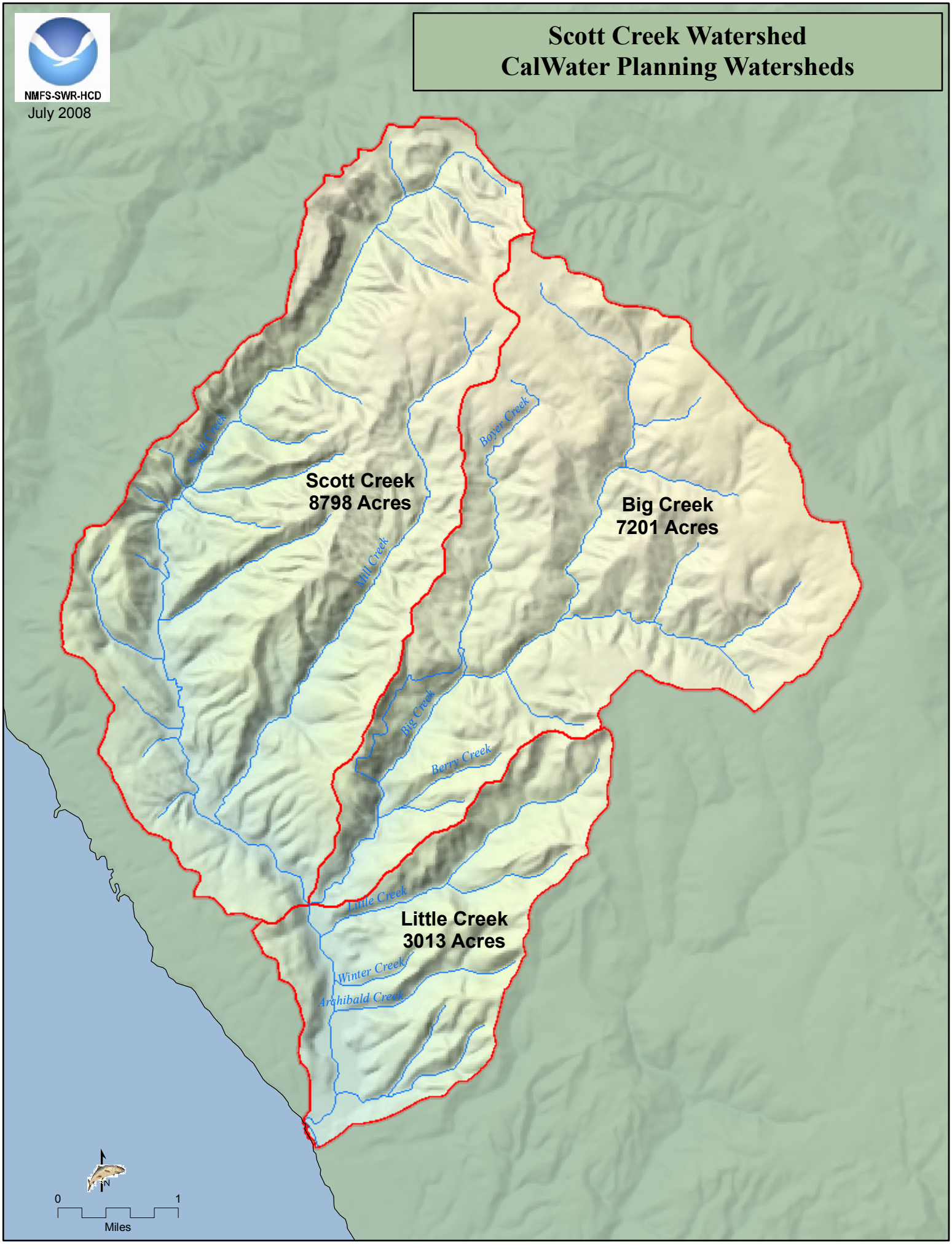
[I]Census 2000 Block Data (Migrated), CA Department of Forestry, 2003


Scott Creek Watershed
Humboldt
Ft. Bragg
Mendocino
Ukiah
Sacramento
Sonoma
Santa Rosa
Marin
San Mateo
Santa Cruz
San Mateo
Redwood City
If Moon Bay
Palo Alto
San Jose
San Gregorio
Pescadero
Boulder Creek
Santa Cruz
Aptos
SAN MATEO COUNTY
SANTA CLARA COUNTY
SANTA CRUZ COUNTY
Bear Ck Rd
35
84
9
17
1
N
0
5
Miles
NMFS-SWR-HCD
June 2008

Scott Creek Watershed

NMFS-SWR-HCD

July 2008


Scott Creek Watershed
CalWater Planning Watersheds
NMFS-SWR-HCD
July 2008
Scott Creek
8798 Acres
Big Creek
7201 Acres
Little Creek
3013 Acres
Scott Creek
Mill Creek
Boyer Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles

Scott Creek Watershed
Fish Distribution and Critical Habitat
NMFS-SWR-HCD
July 2008
Scott Creek
Boyer Creek
Mill Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles
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
Scott Creek Watershed

Scott Creek Watershed
Steelhead Current vs. Historical

NMFS-SWR-HCD

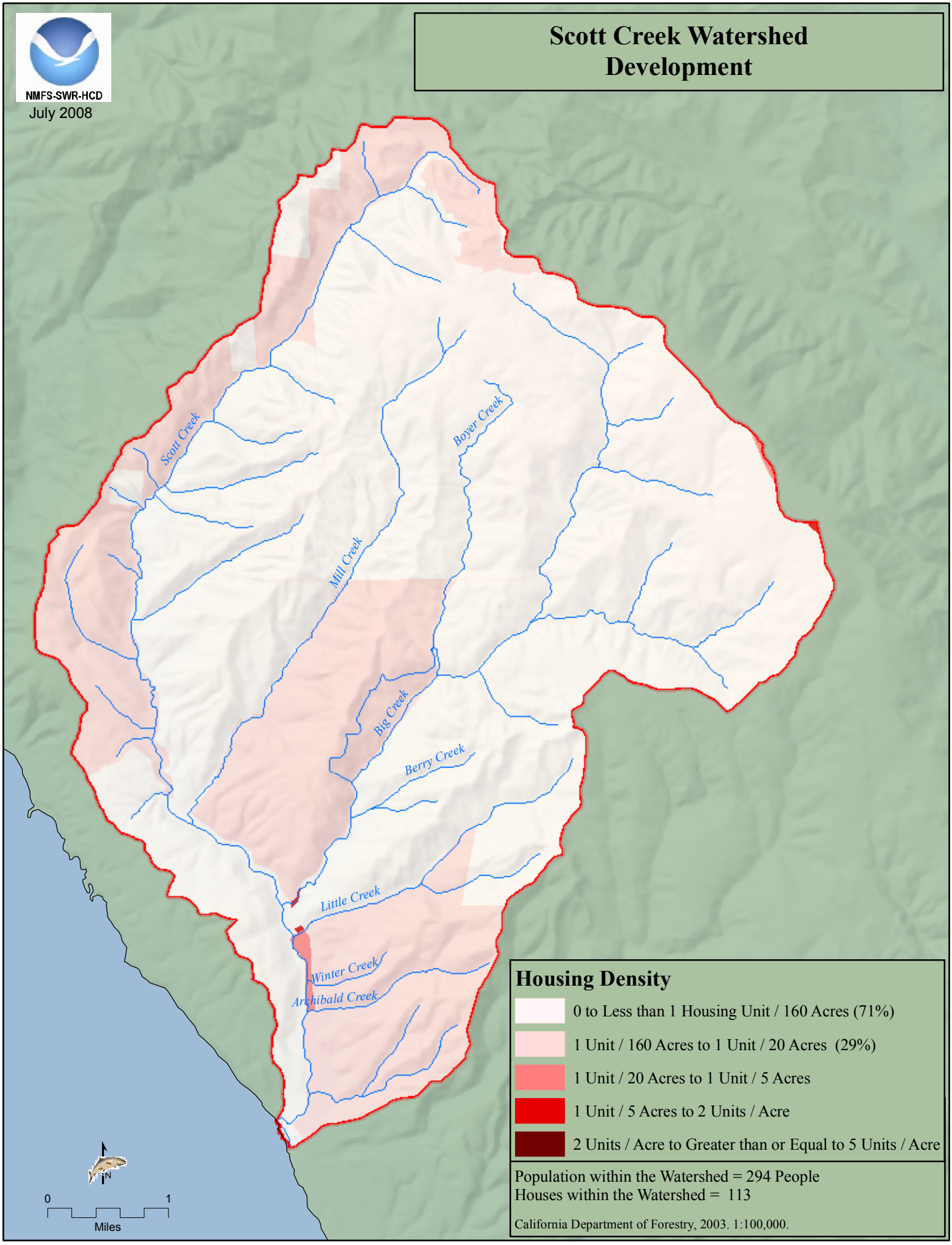
July 2008

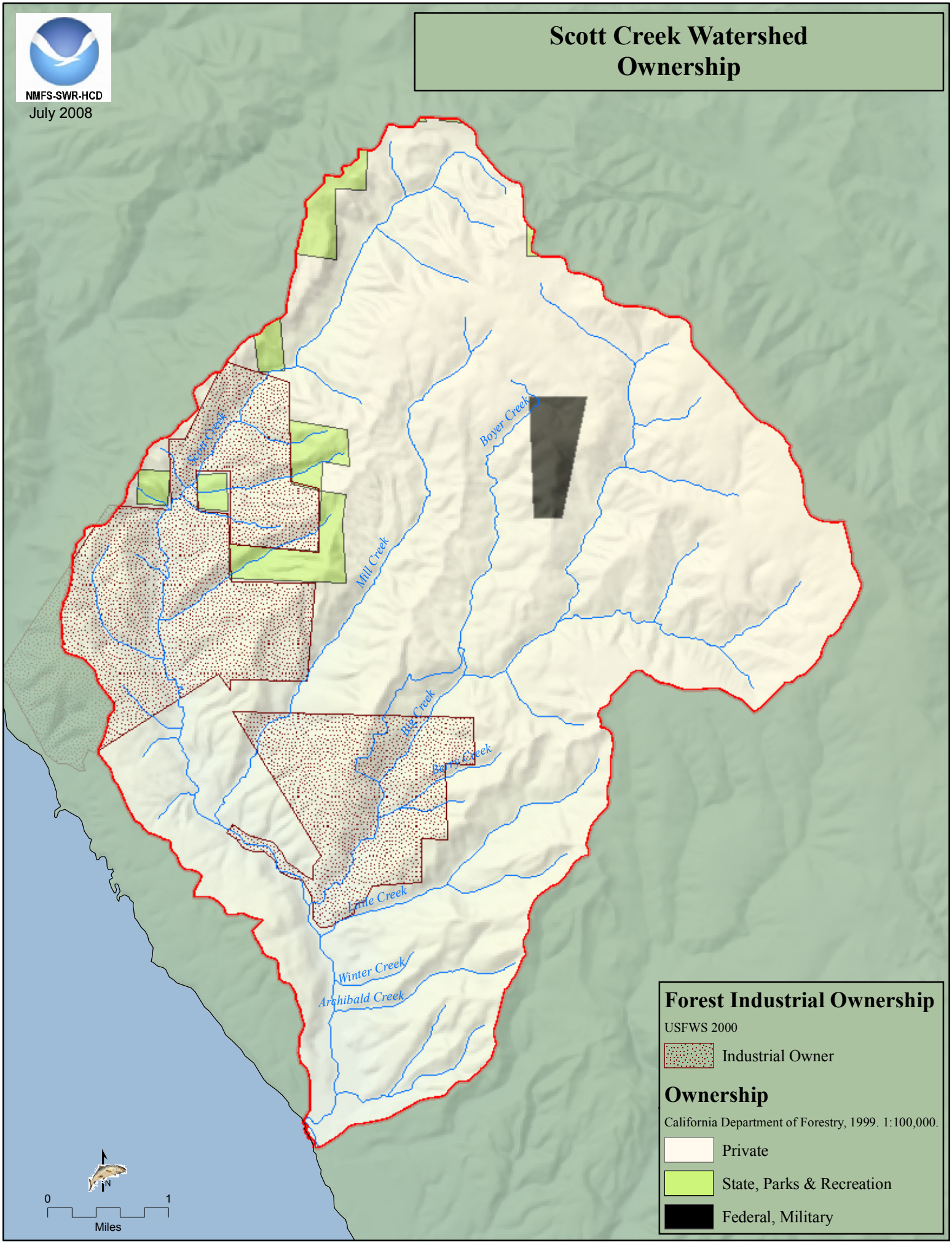
NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Coho Current vs. Historical
Scott Creek
Mill Creek
Boyer Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles
Current Coho Distribution
CDFG - NCNCR-ISB, 2007. 1:100,000.
Coho Intrinsic Potential
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat
1:24,000 Streams
USGS National Hydrography Dataset, 2004.
1:24,000
Scott Creek Watershed

Scott Creek Watershed Elevation

NMFS-SWR-HCD

July 2008


NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Development
Scott Creek
Boyer Creek
Mill Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles
Housing Density
0 to Less than 1 Housing Unit / 160 Acres (71%)
1 Unit / 160 Acres to 1 Unit / 20 Acres (29%)
1 Unit / 20 Acres to 1 Unit / 5 Acres
1 Unit / 5 Acres to 2 Units / Acre
2 Units / Acre to Greater than or Equal to 5 Units / Acre
Population within the Watershed = 294 People
Houses within the Watershed = 113
California Department of Forestry, 2003. 1:100,000.


NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Ownership
Boyer Creek
Scott Creek
Mill Creek
Big Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles
Forest Industrial Ownership
USFWS 2000
Industrial Owner
Ownership
California Department of Forestry, 1999. 1:100,000.
Private
State, Parks & Recreation
Federal, Military

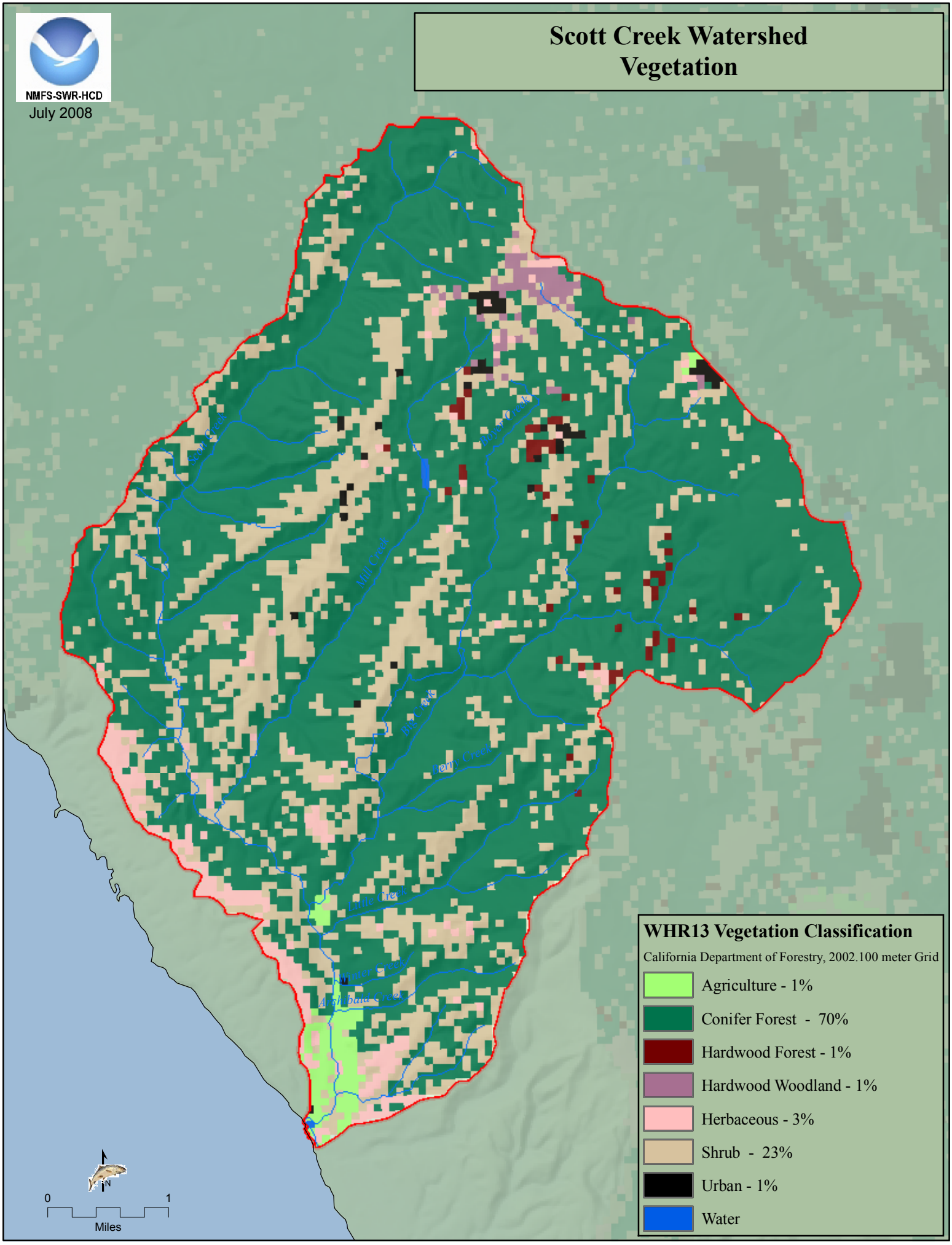
NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Road Density
Scott Creek
Mill Creek
Boyer Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
N
0
1
Miles
Road
U.S. Census Bureau - Tiger 2000, 2002. 1:24,000
Road Density (Miles of Road per Square Mile of Watershed)
0.6
0.6 - 1.25
Overall Watershed
Density = 1.0 Miles / SqMi

NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Road Density in the Riparian Corridor
Scott Creek
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 = 1.5 Miles / SqMi of Corridor
N
0
1
Miles

Scott Creek Watershed Vegetation

NMFS-SWR-HCD

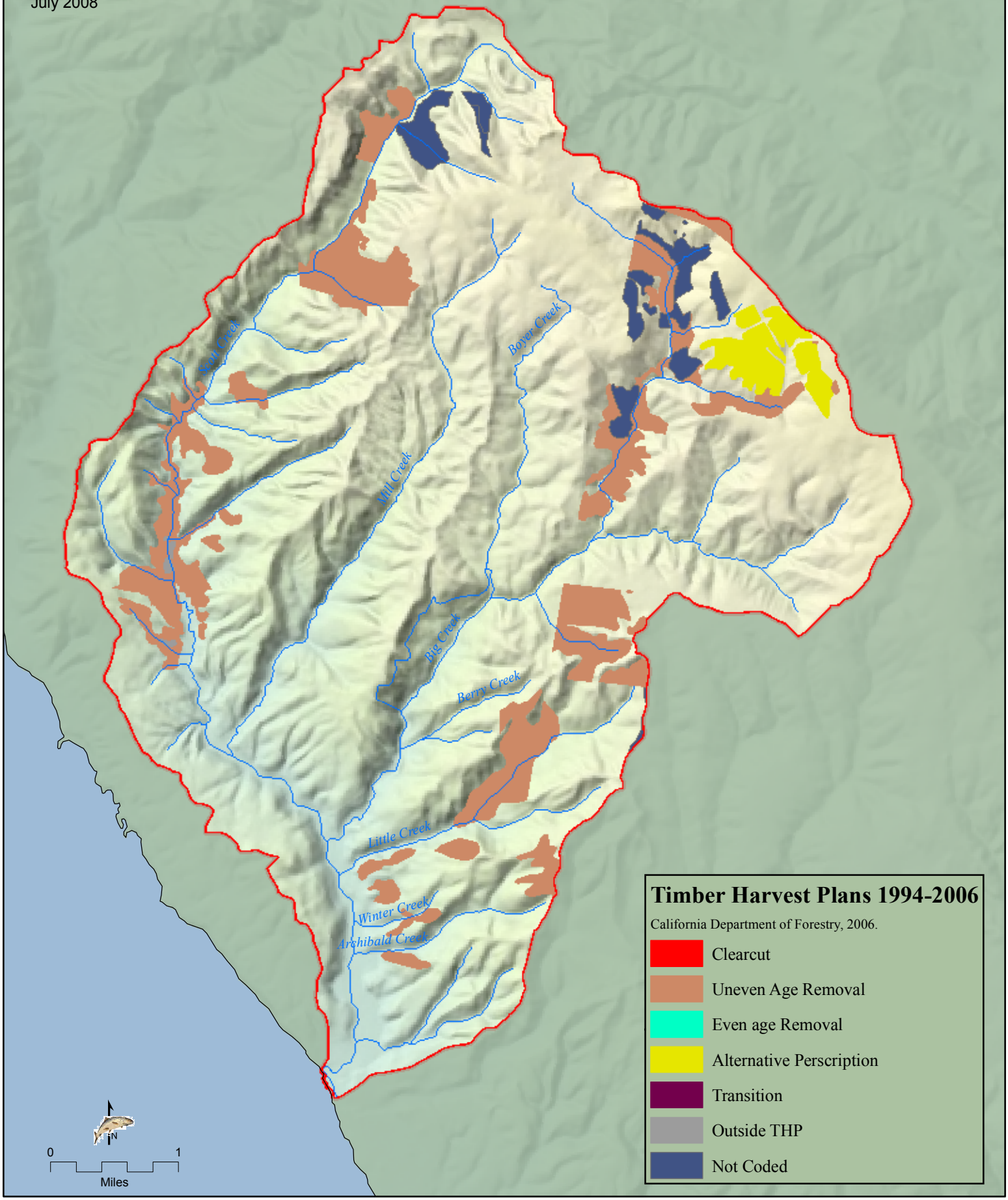
July 2008



Scott Creek Watershed
Timber Harvesting 1994-2006

NMFS-SWR-HCD

July 2008



Timber Harvest Plans 1994-2006

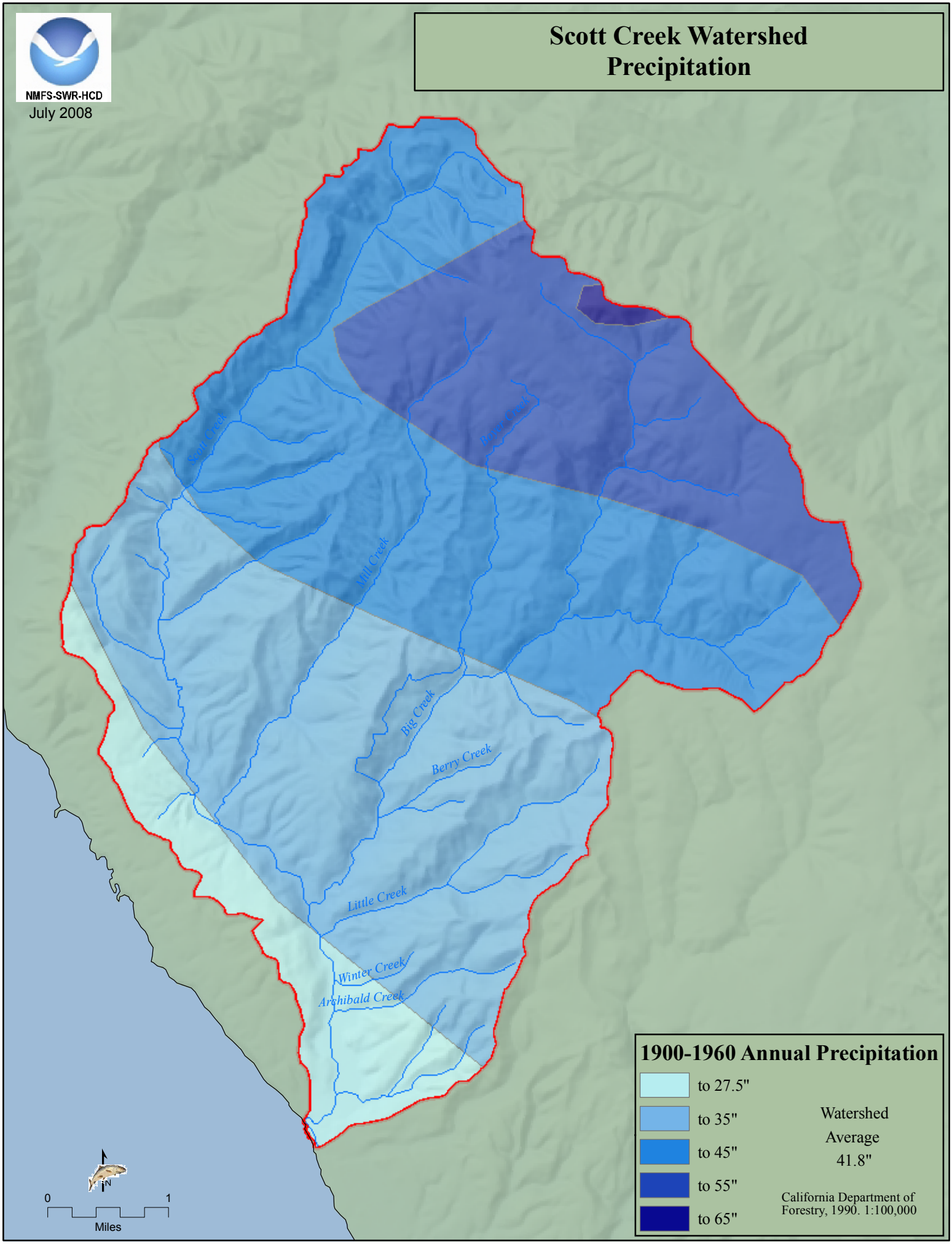
California Department of Forestry, 2006.

- Clearcut
- Uneven Age Removal
- Even age Removal
- Alternative Perscription
- Transition
- Outside THP
- Not Coded

Scott Creek Watershed Precipitation

NMFS-SWR-HCD

July 2008



1900-1960 Annual Precipitation

- to 27.5"
- to 35"
- to 45"
- to 55"
- to 65"

Watershed Average 41.8"

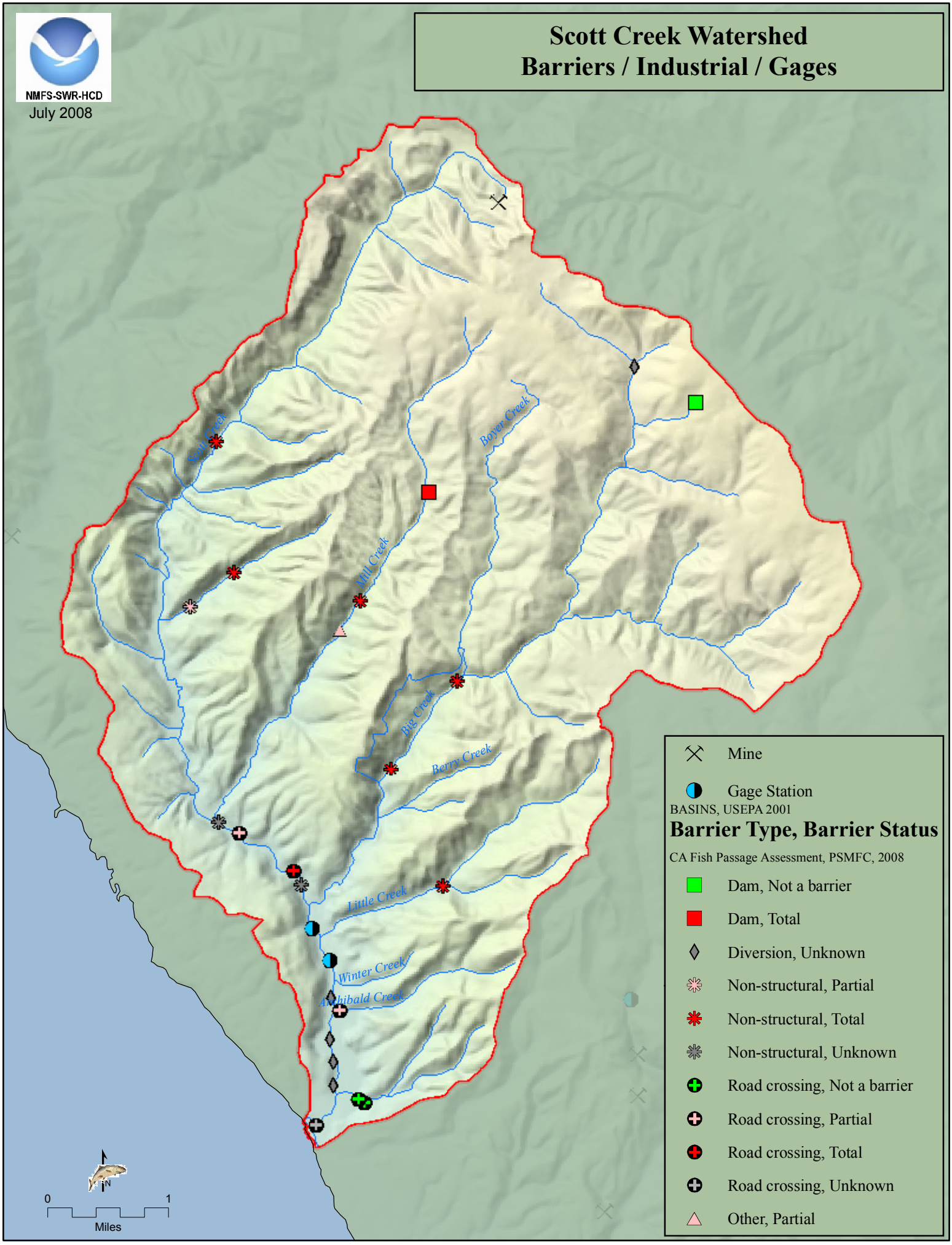
California Department of Forestry, 1990. 1:100,000

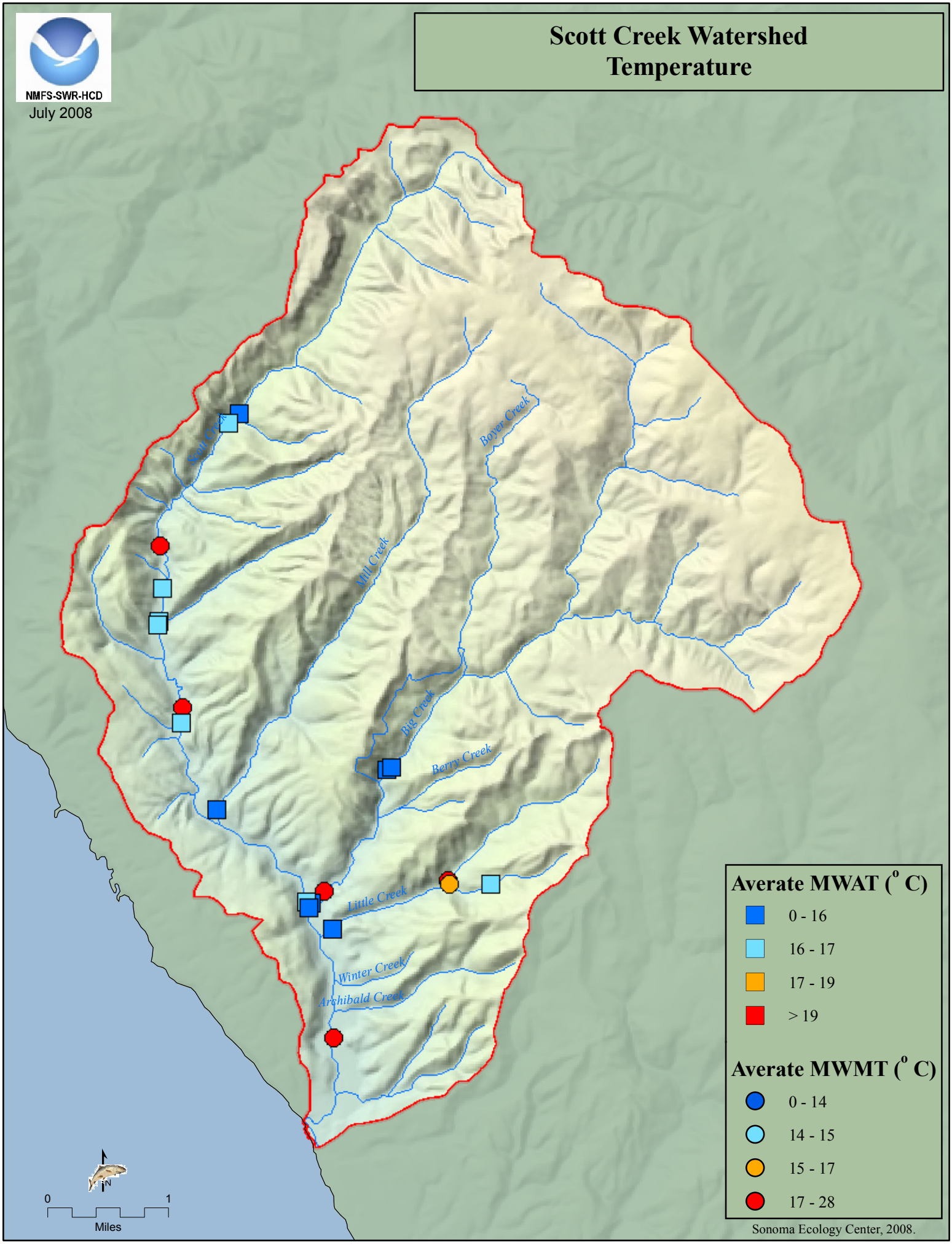
Scott Creek Watershed
Flood Zone

NMFS-SWR-HCD

July 2008

Scott Creek Watershed
Geologic Features
NMFS-SWR-HCD
July 2008
Scott Creek
Boyer Creek
Mill Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
Debris-flow Sources (mapped after 1/82 storm)
Surficial Deposits
Few Landslides
Mostly Landslide
Circuit Rider Productions, 2004.
N
0
1
Miles

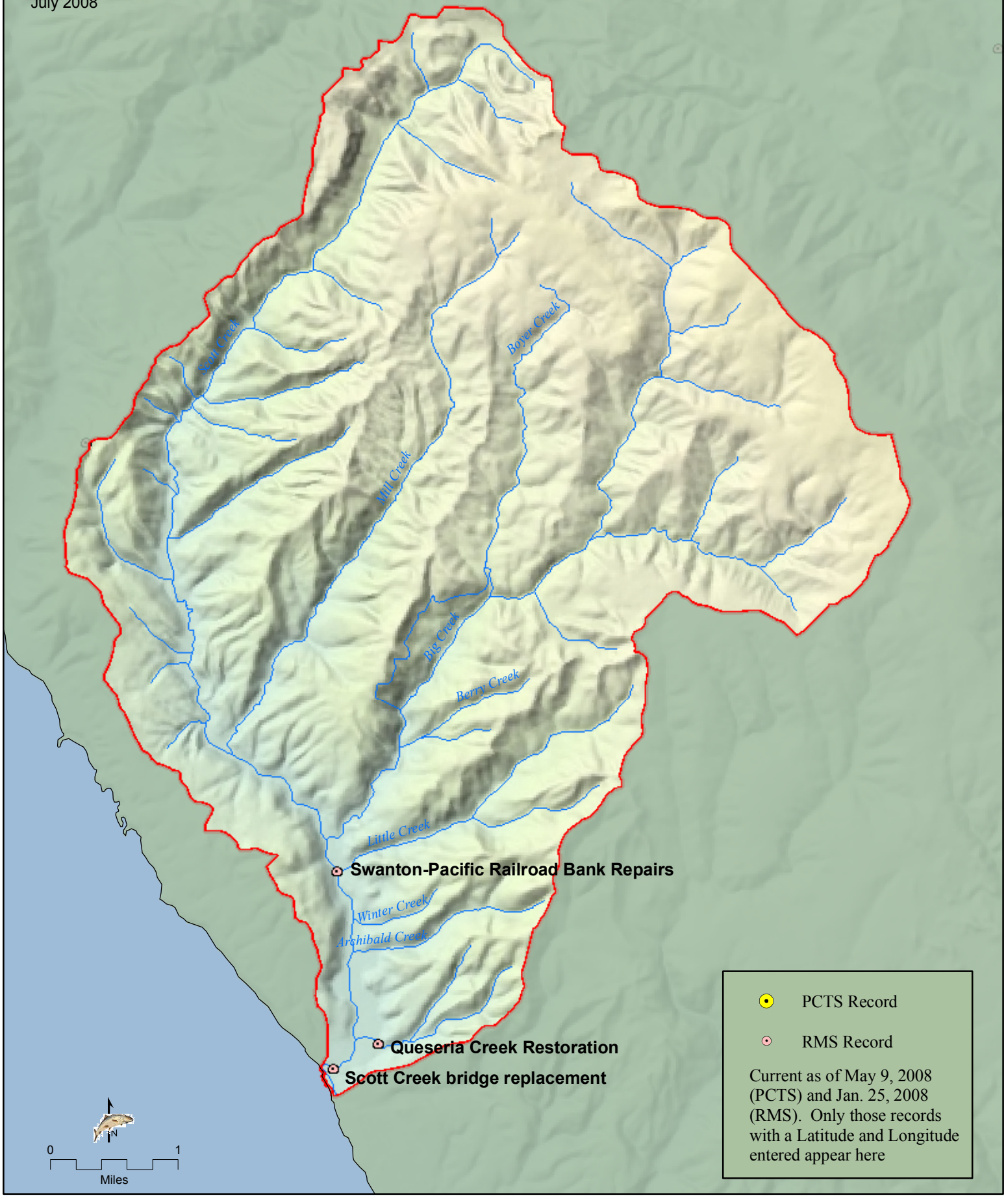

NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Barriers / Industrial / Gages
Scott Creek
Boyer Creek
Mill Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
Mine
Gage Station
BASINS, USEPA 2001
Barrier Type, Barrier Status
CA Fish Passage Assessment, PSMFC, 2008
Dam, Not a barrier
Dam, Total
Diversion, Unknown
Non-structural, Partial
Non-structural, Total
Non-structural, Unknown
Road crossing, Not a barrier
Road crossing, Partial
Road crossing, Total
Road crossing, Unknown
Other, Partial
N
0
1
Miles


NMFS-SWR-HCD
July 2008
Scott Creek Watershed
Temperature
Boyer Creek
Mill Creek
Big Creek
Berry Creek
Little Creek
Winter Creek
Archibald Creek
Averate MWAT (° C)
0 - 16
16 - 17
17 - 19
> 19
Averate MWMT (° C)
0 - 14
14 - 15
15 - 17
17 - 28
N
0
1
Miles
Sonoma Ecology Center, 2008.

Scott Creek Watershed
Public Consultation Tracking System

NMFS-SWR-HCD

July 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
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_september2008
vector digital data
California Fish Passage Assessment Database
Pacific States Marine Fisheries Commission
September 2006
http://www.calfish.org/

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
Spline2
Spline6
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
Highly Erodible Watersheds
vector digital data
Department of Conservation, Division of Mines and 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/

Timber Harvesting
thp_(year)
Annual Timber Harvest Plans
vector digital data
California Department of Forestry and Fire Protection
Santa Rosa, CA
1983-2001

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_ca087_2006_1 (Santa Sruz)
remote-sensing image
raster digital data
National Agriculture Imagery Program (NAIP)
USDA-FSA Aerial Photography Field Office
Salt Lake City, Utah
2004
http://datagateway.nrcs.usda.gov/GatewayHome.html

Historic Suitable Habitat (Coho, Chinook, Steelhead)
Intrinsic Potential Model
vector digital data
NOAA Fisheries
Santa Cruz Laboratory, Santa Cruz, CA
2005
http://swfsc.noaa.gov/

Forest Industrial Ownership
nwca_own
vector digital data
United States Fish and Wildlife Service
Arcata, CA
2000

Temperature
MWMT_20080117_selected_watersheds
Vector digital data
Sonoma Ecology Center
2008

MWAT_20080117_selected_watersheds
Vector digital data
Sonoma Ecology Center
2008

Geologic Features
Geopoint
vector digital data
Department of Conservation, Division of Mines and Geology
Minimum Mapping Unit: Approximately 8000 Acres (20,000 Hectares)
1994

Gorge
vector digital data
Department of Conservation, Division of Mines and Geology
Minimum Mapping Unit: Approximately 8000 Acres (20,000 Hectares)
1994

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