



Cottoneva Creek Watershed

| Area | Hydrologic Units | Calwater Subbasins --- | (Planning Watersheds) |
|------------------|------------------|------------------------|-------------------------------|
| 10,573 Acres | 18010108 | 1113120101 | Cottoneva Creek (10573 Acres) |
| 4,279 Hectares | 4th Field HUC | | |
| 17 Square Miles | 1113 | | |
| Location | | | |
| Mendocino County | | | |

| Species Potential | Miles of Streams with Species Present |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Northern California Steelhead North-Central Coastal Diversity Stratum - Potentially Independent Population | <u>Steelhead</u> 14 NOAA Fisheries, Critical Habitat Redesignation, 2005 |
| Central California Coast Coho Lost Coast Diversity Stratum - Dependent Population | <u>Coho</u> 10 CDFG, Coho Distribution, May 2007 |

| Critical Habitat | Miles of Stream |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Northern California Steelhead | 14 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 | | 0 |
| Intermittent Stream | 20 | |
| Perennial Stream | 14 | |

^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 ^C |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11468850 Dunn Creek near Rockport, CA | 21 0 Dams 16 Road Crossings (3 Impassable, 2 Temp. &/or Partially Impassable) 5 Natural Barriers (Chutes, Falls, Log Jams, etc. (5 Impassable)) |

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

| Average Annual Precipitation ^E | Average Annual Precipitation Range ^E |
|-------------------------------------------|-------------------------------------------------|
| 49.5" | 45 - 55" |

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

| Roads^A | Miles |
|---------------------------------------------------------------|-----------|
| Roads in Watershed | |
| Primary Road / Highway | |
| Secondary and connecting road, state highways | 10 |
| Local, neighborhood, and rural road, city street, unseparated | 44 |
| Vehicular trail, 4WD | |
| Total Miles | 54 |

| Road Density | |
|--------------------------------------------------|-----|
| Miles of Roads per SqMi of Watershed | 3.3 |
| Miles of Roads per SqMi of 100m Riparian Buffer* | 4.3 |

*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 | 48 | 0% |
| Lands of 2-4 percent slope | 66 | 1% |
| Lands of 4-10 percent slope | 243 | 2% |
| Lands of 10-15 percent slope | 247 | 2% |
| Lands of 15-30 percent slope | 1,271 | 12% |
| Lands of 30-60 percent slope | 6,080 | 58% |
| Lands of 60-100 percent slope | 2,549 | 24% |
| Lands of 100-194 percent slope | 69 | 1% |

| Elevation Range | 0 - 1,975 ft. | 0 - 602 m |
|------------------------|---------------|-----------|
|------------------------|---------------|-----------|

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

| Vegetation^G | Acres | Percent of watershed |
|-------------------------------|-------|----------------------|
| Annual grassland | 86 | 1% |
| Barren | 5 | 0% |
| Conifer Forest | | |
| Montane Hardwood-Conifer | 245 | 2% |
| Redwood | 7,771 | 73% |
| Hardwood Forest | | |
| Montane Hardwood | 1,895 | 18% |
| Montane Riparian | 366 | 3% |
| Shrub | 220 | 2% |
| Urban | 2 | 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 8 | 10,573 | 100% |

^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 | 10,572 | 100% |

^HManagement Landscape, CA Department of Forestry, 2002

| Area Under a Timber Harvest Plan^A past 10 years | Area Under a Timber Harvest Plan^A past 12 years (1994-2005) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 3,894 37% | 4,562 43% of watershed |

^ACalifornia Department of Forestry, Timber Harvest Plans for Cottaneva Watershed, 2006

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

Total Population within
the watershed -- 23 People

Total Housing Units within the watershed -- 15 Houses

Housing Density

0 to Less than 1 Housing Unit / 160 Acres

1 Unit / 160 Acres to 1 Unit / 20 Acres

1 Unit / 20 Acres to 1 Unit / 5 Acres

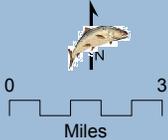
1 Unit / 5 Acres to 2 Units / Acre

2 Units / Acres to Greater than or Equal to 5 Units / Acre

100%

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

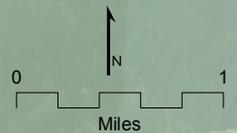
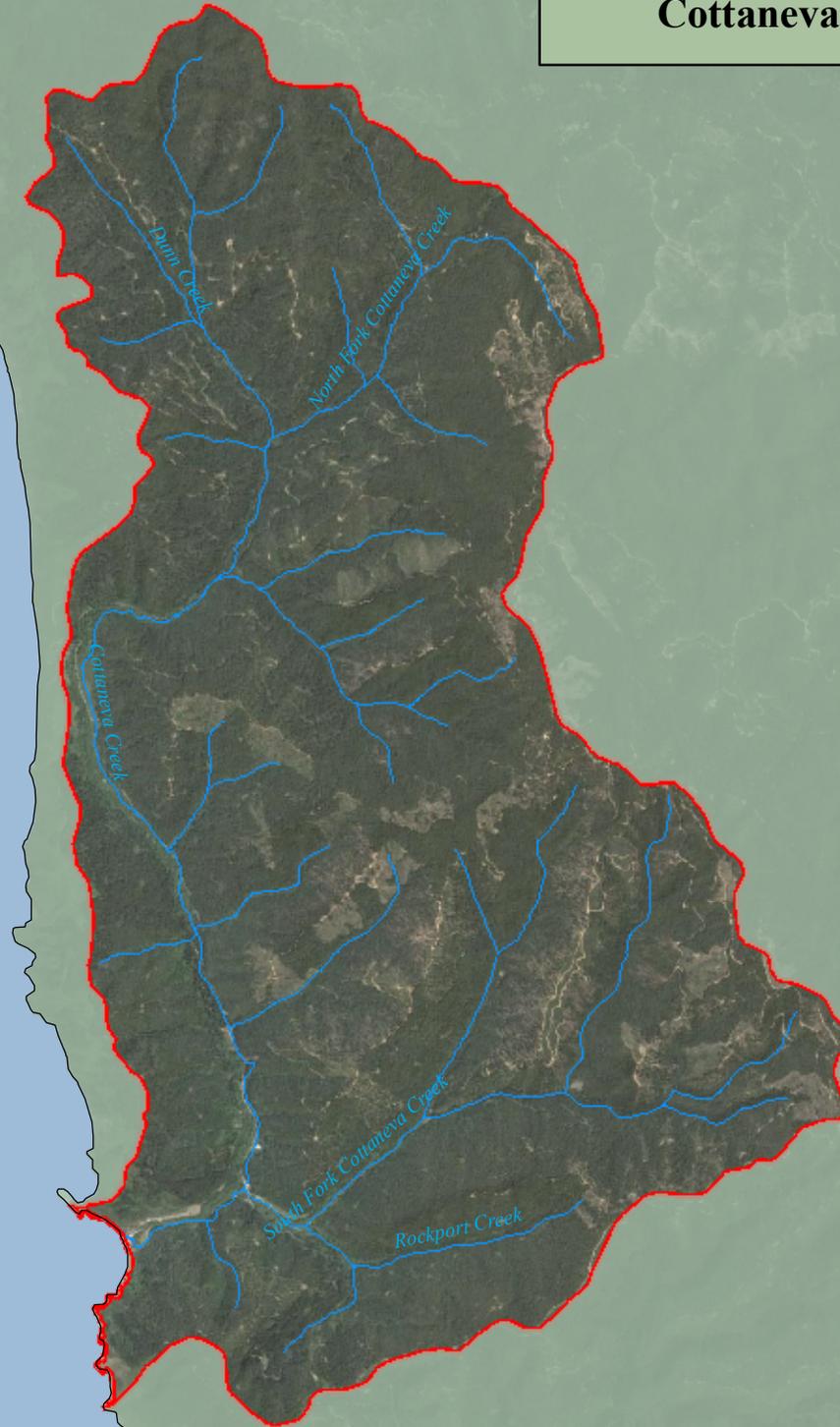
Cottaneva Creek Watershed





NMFS-SWR-HCD
March 2009

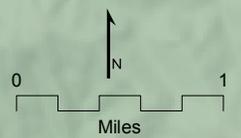
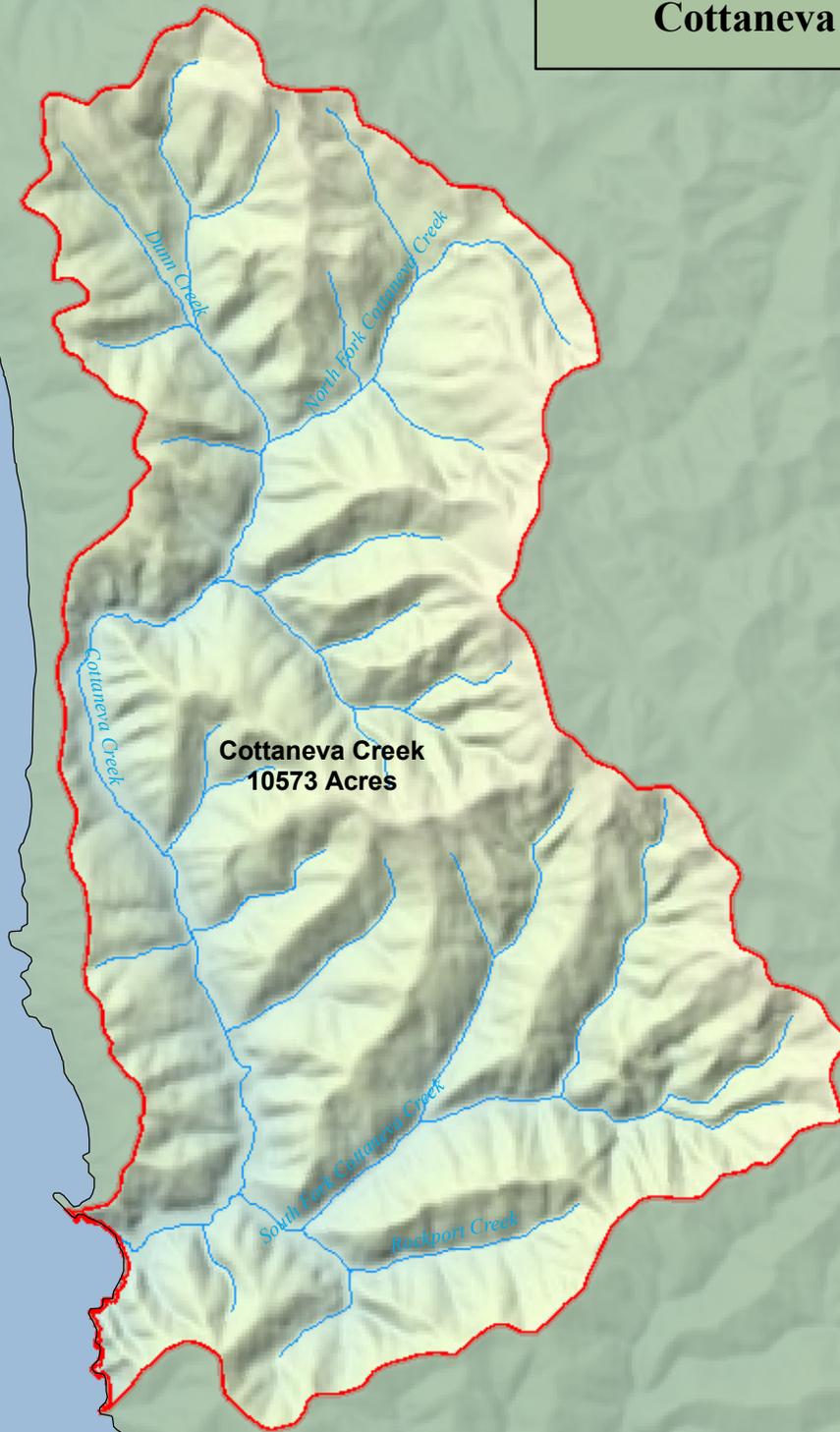
Cottaneva Creek Watershed





NMFS-SWR-HCD
March 2009

Cottaneva Creek Watershed

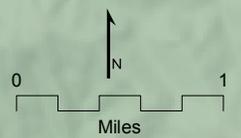
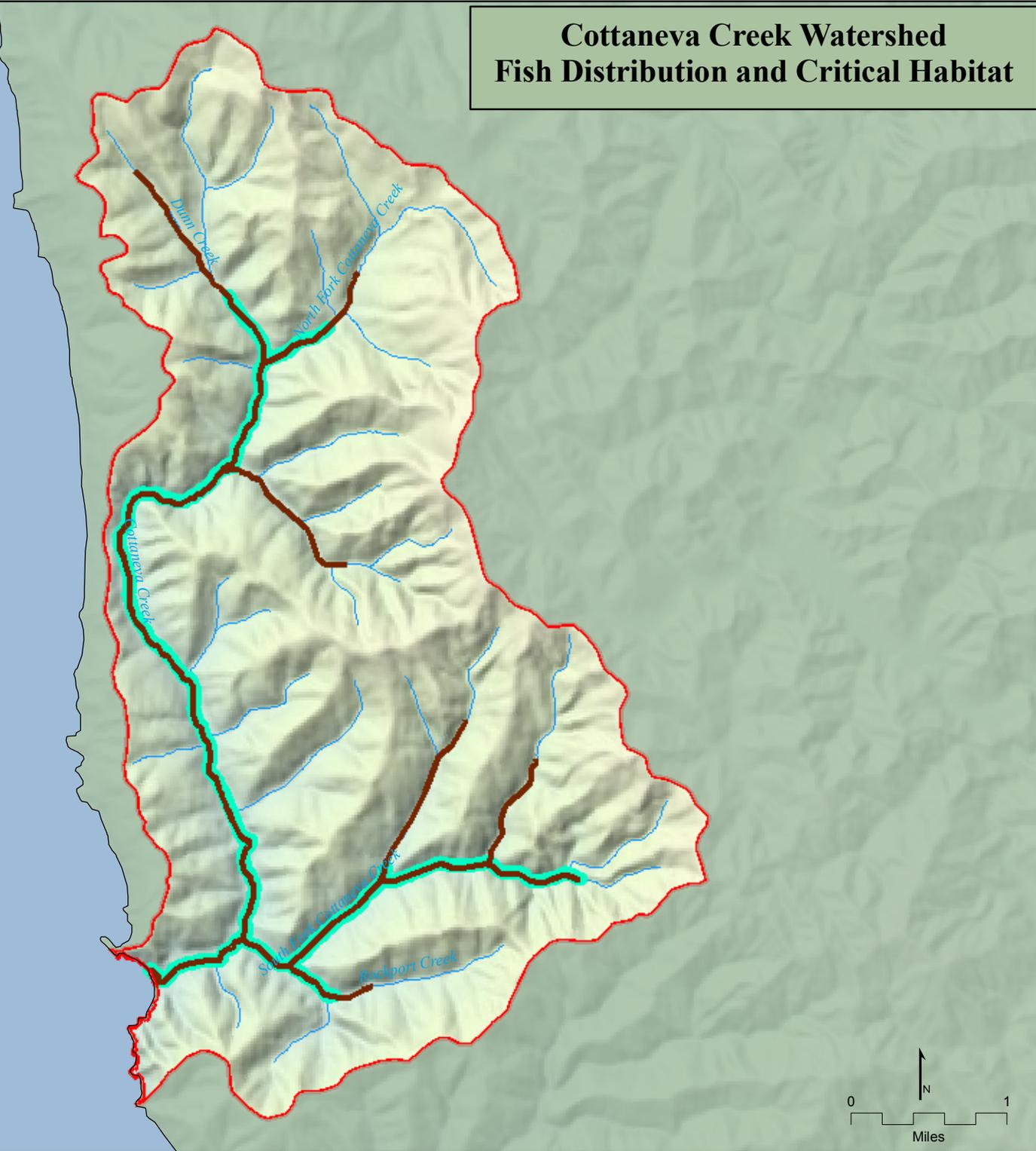




NMFS-SWR-HCD
March 2009

Cottaneva Creek Watershed Fish Distribution and Critical Habitat

-  NC 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
-  Cottaneva Creek Watershed





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Cottaneva Creek Watershed Steelhead Current vs. Historical

Current NC 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

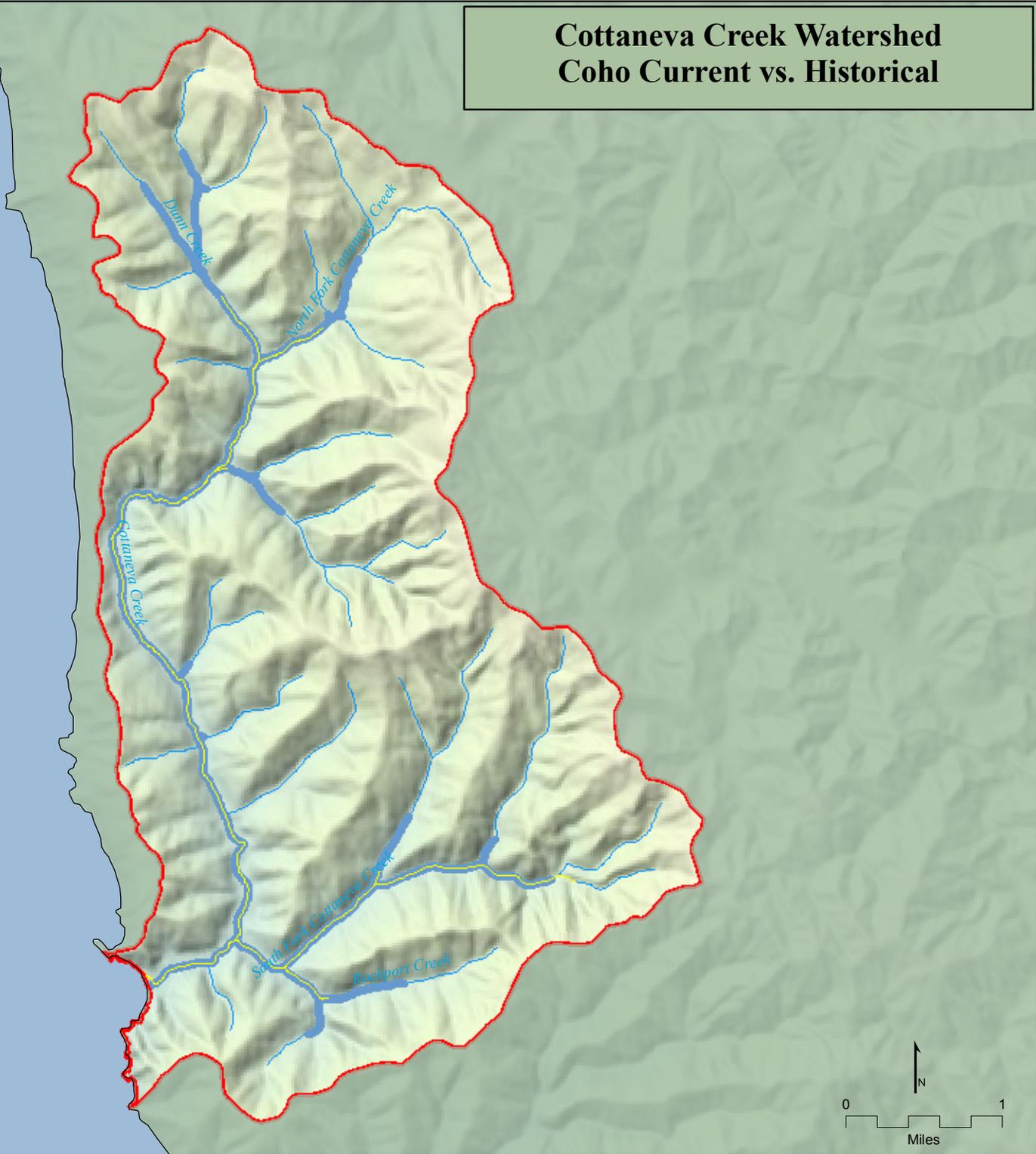
Cottaneva Creek Watershed



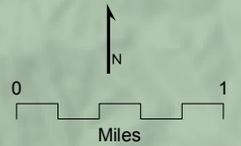


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Cottaneva Creek Watershed Coho Current vs. Historical



- 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
- Cottaneva Creek Watershed

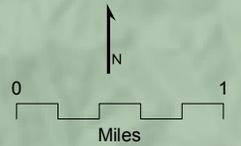
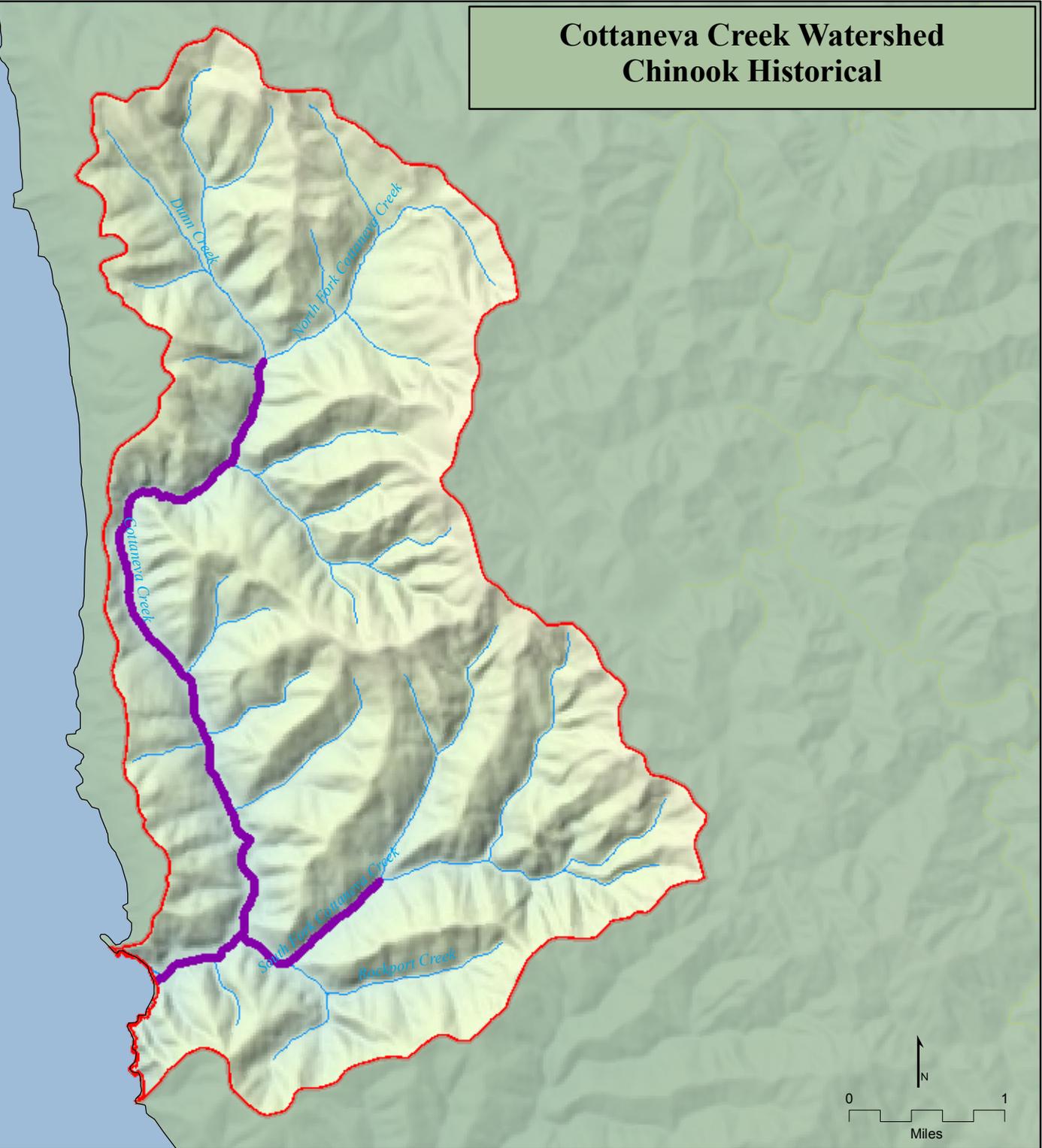




NMFS-SWR-HCD
March 2009

Cottaneva Creek Watershed Chinook Historical

-  Chinook Intrinsic Potential
NMFS SWR Fisheries Science Center, 2005.
Potential historical suitable habitat
-  1:24,000 Streams
USGS National Hydrography Dataset,
2004. 1:24,000
-  Cottaneva Creek Watershed



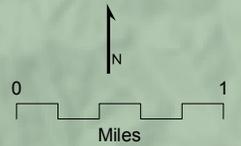


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Cottaneva Creek Watershed Elevation



Cottaneva Creek Elevation (Meters)





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March 2009

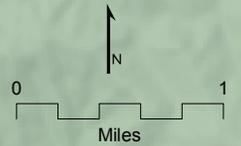
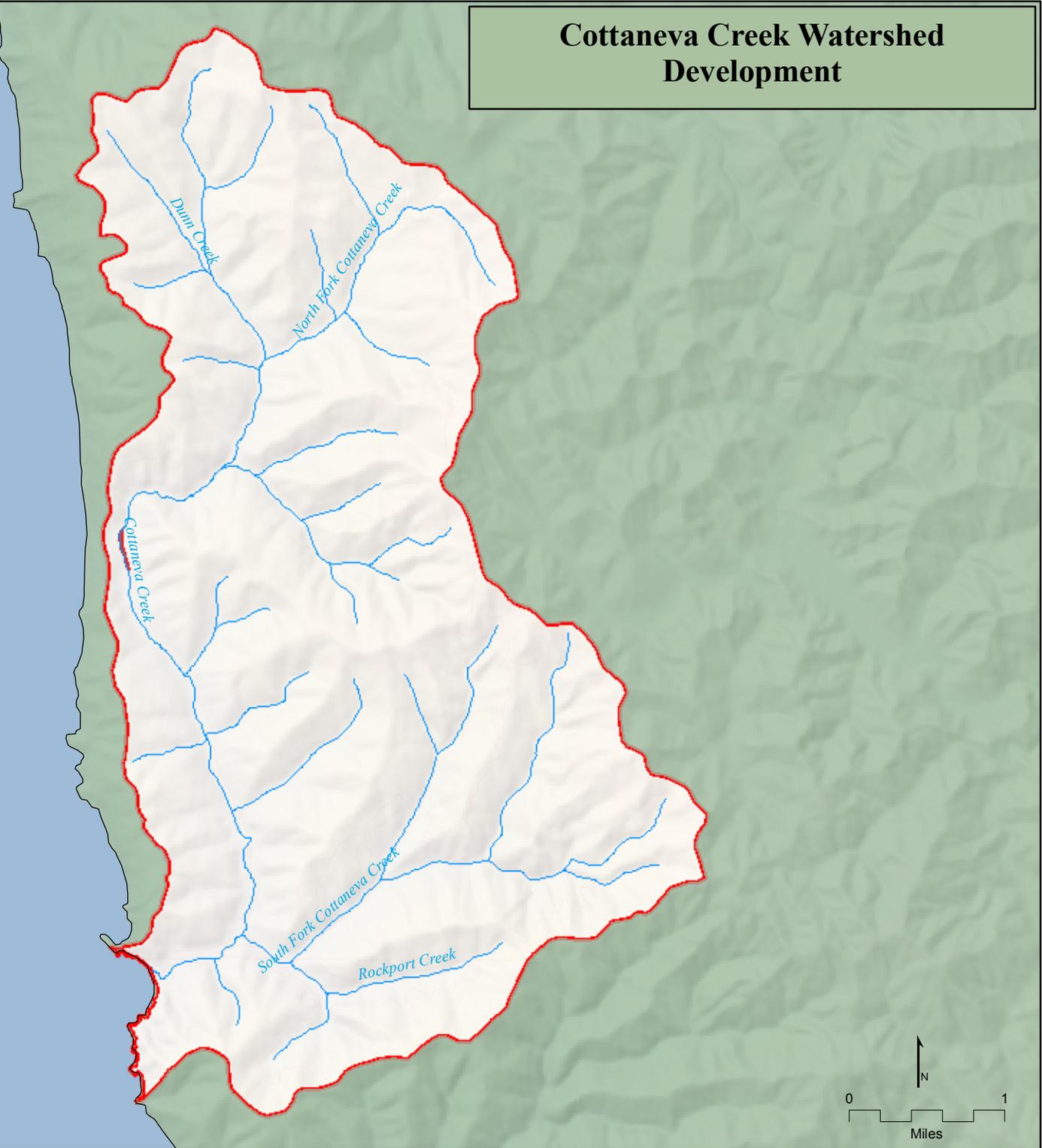
Cottaneva Creek Watershed Development

Housing Density

- 0 to < 1 Housing Unit / 160 Acres (100%)
- 1 Unit / 160 Acres to 1 Unit / 20 Acres
- 1 Unit / 20 Acres to 1 Unit / 5 Acres
- 1 Unit / 5 Acres to 2 Units / Acre
- 2 Units / Acre to \geq to 5 Units / Acre

Population within the Watershed = 23 People
Houses within the Watershed = 15

California Department of Forestry, 2003. 1:100,000.





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Cottaneva Creek Watershed Ownership

Forest Industrial Ownership

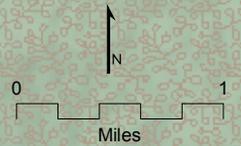
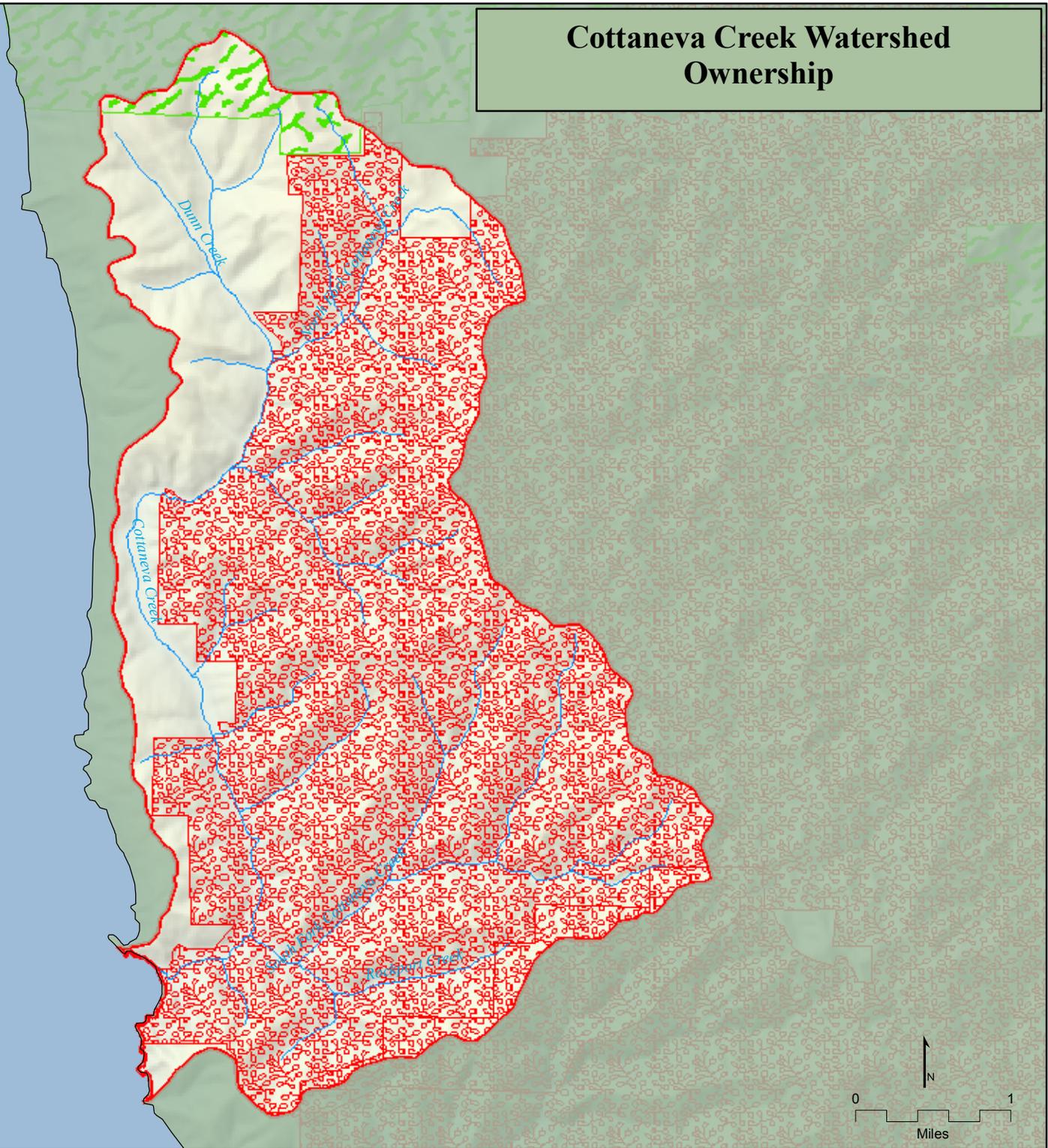
USFWS 2000

-  Mendocino Redwoods
-  Georgia Pacific

Ownership

California Depart. of Forestry, 1999. 1:100,000.

-  Private





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Cottaneva Creek Watershed Road Density



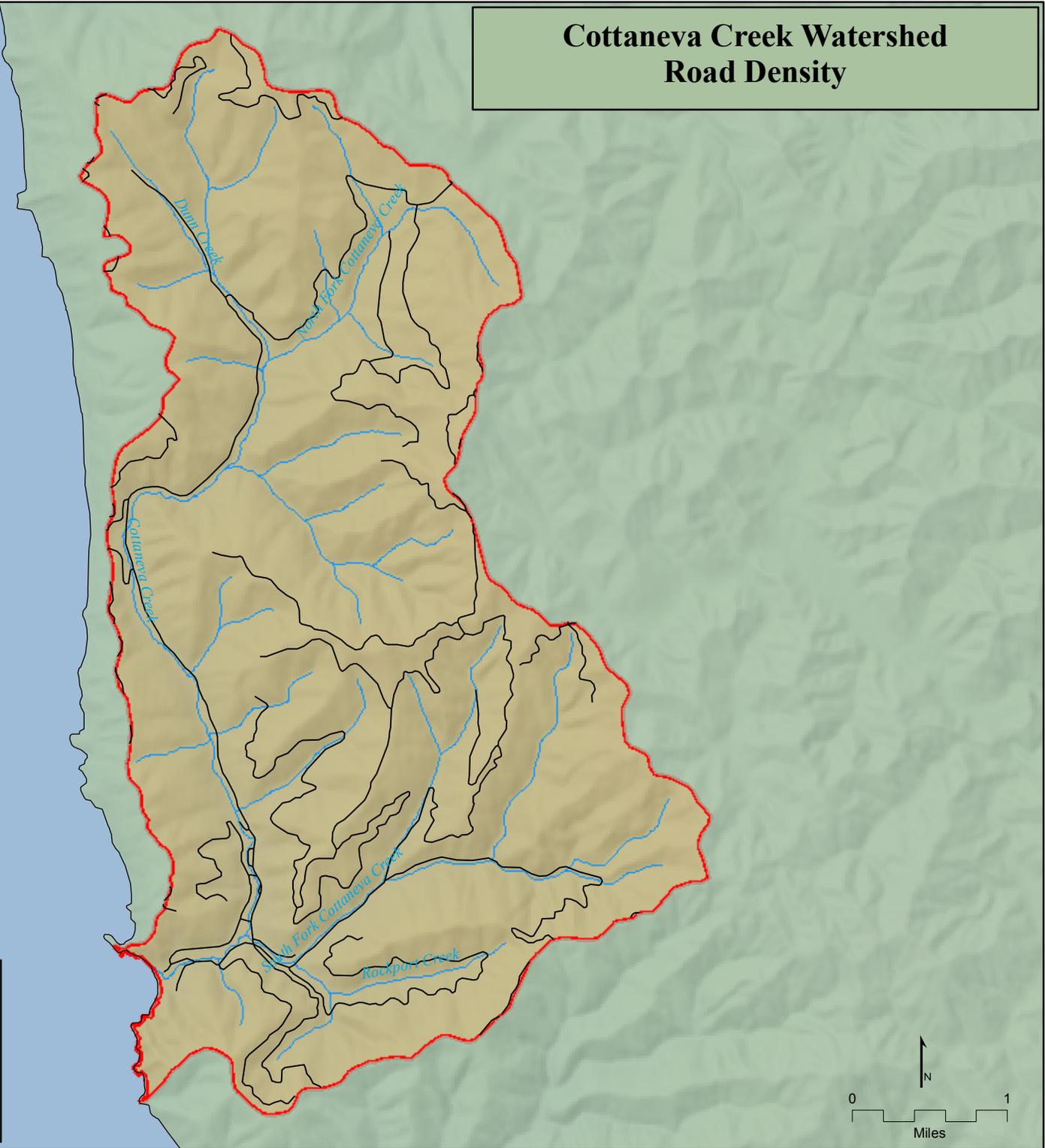
Road

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

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

3.3

Overall Watershed
Density = 3.3 Miles / SqMi

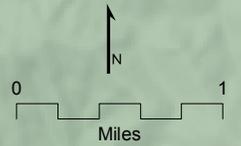




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March 2009

Cottaneva 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 =
4.3 Miles / SqMi
of Corridor





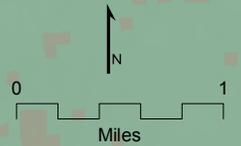
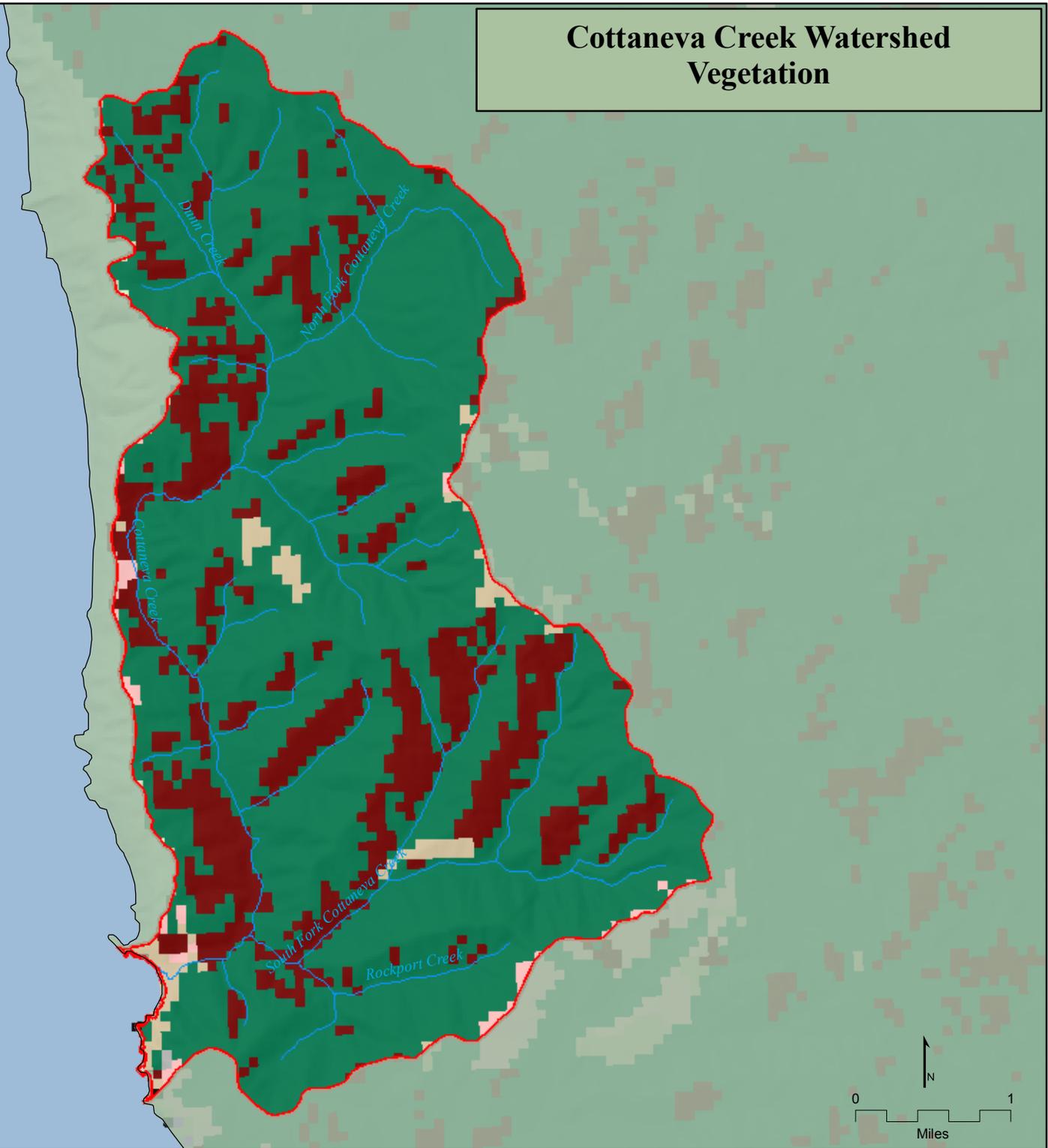
NMFS-SWR-HCD
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Cottaneva Creek Watershed Vegetation

WHR13 Vegetation Classification

CA Department of Forestry, 2002.100 meter Grid

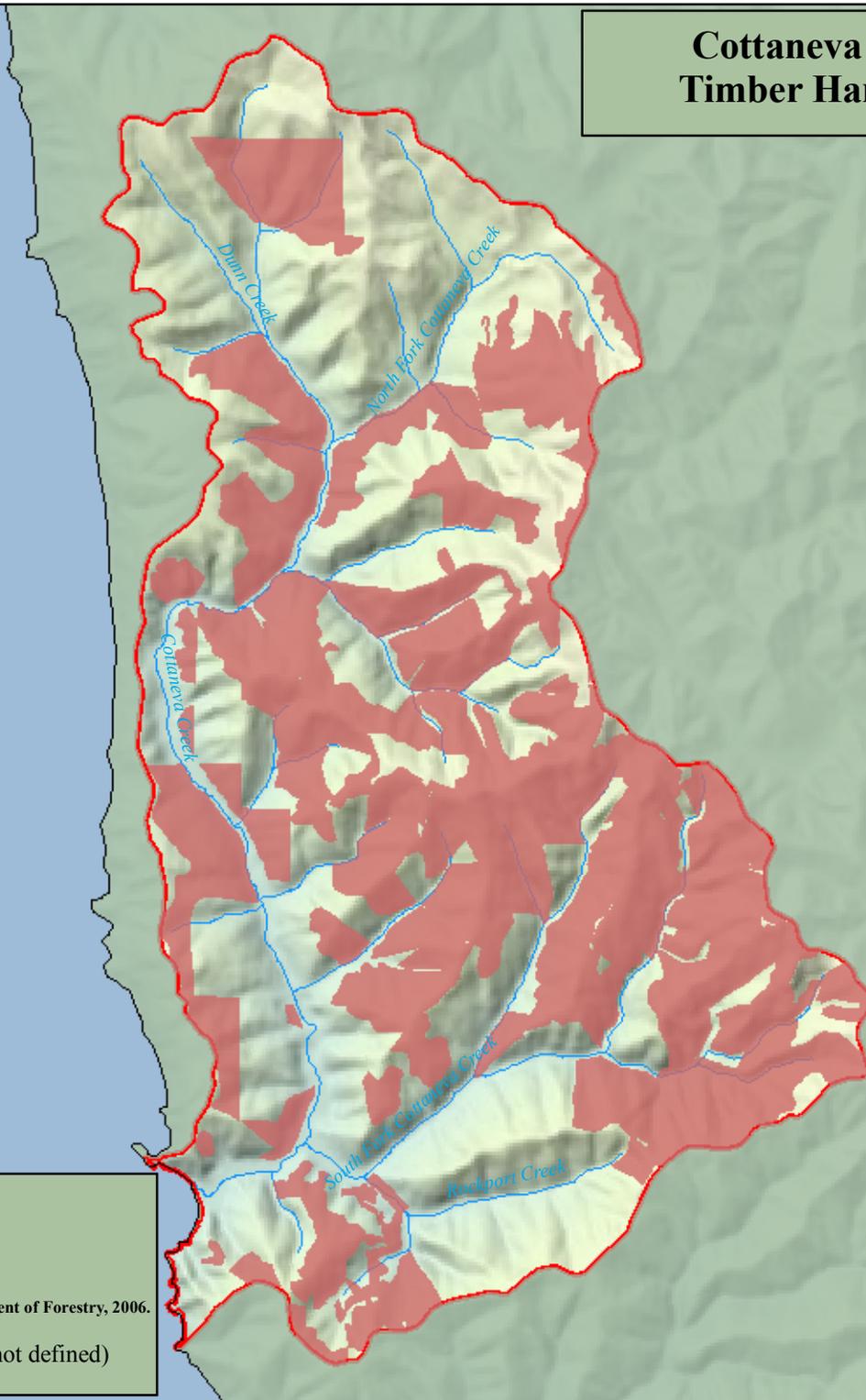
- Barren/Other
- Conifer Forest - 75%
- Hardwood Forest - 21%
- Hardwood Woodland
- Herbaceous - 1%
- Shrub - 2%
- Urban
- Water
- Wetland





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Cottaneva Creek Watershed Timber Harvesting 1994-2006

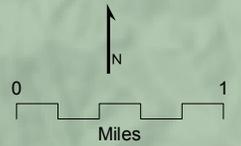


 1:24,000 Streams

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

Timber Harvest Plans 1994-2004 California Department of Forestry, 2006.

 Harvest Plans Footprint (Silviculture method not defined)





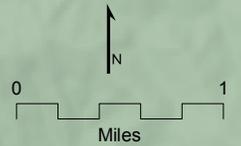
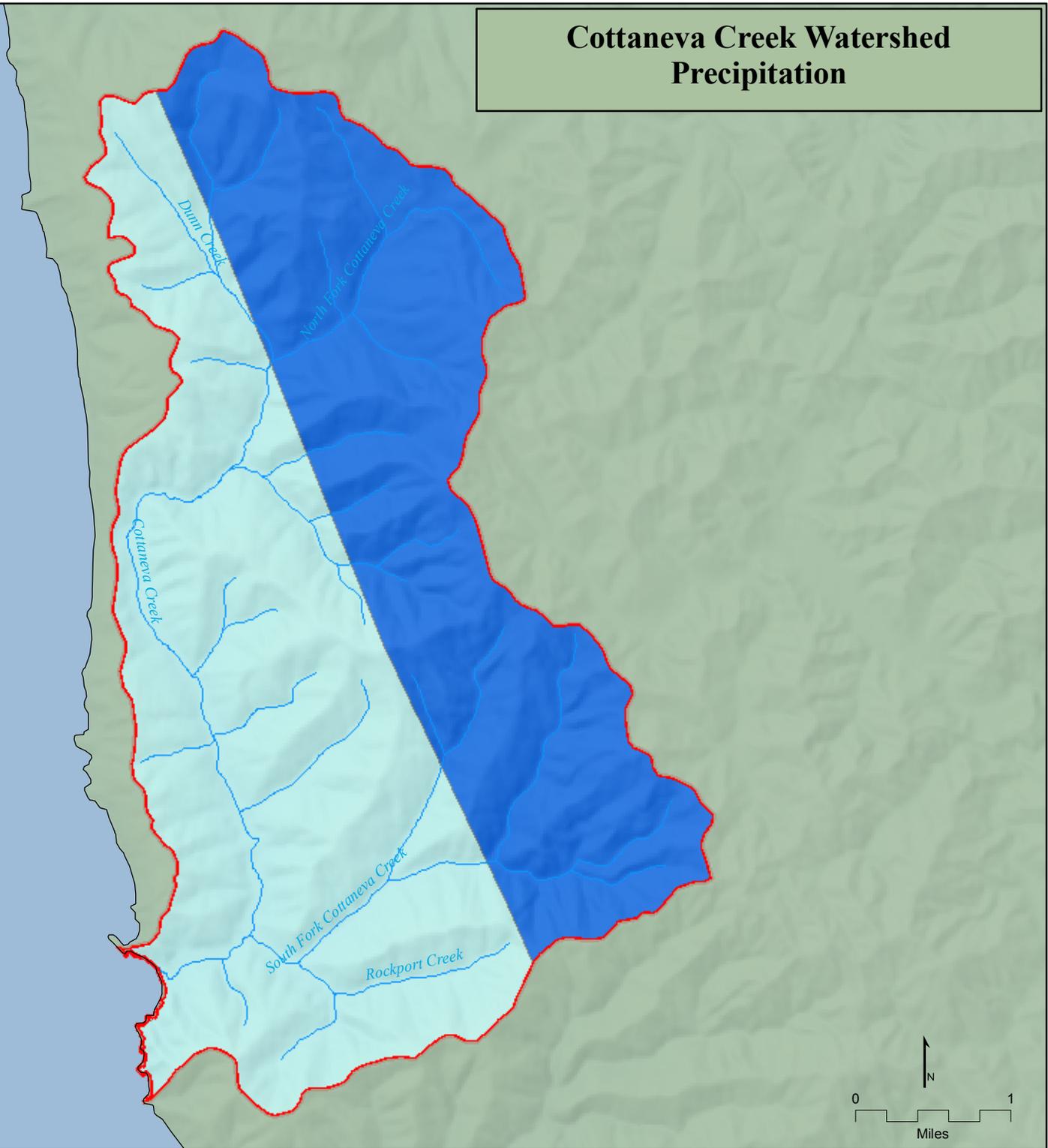
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Cottaneva Creek Watershed Precipitation

1900-1960 Annual Precipitation

| | | |
|------------------------------------------------------------------------------------|--------|-----------|
|  | to 45" | Watershed |
|  | to 55" | Average |
| | | 49.5" |

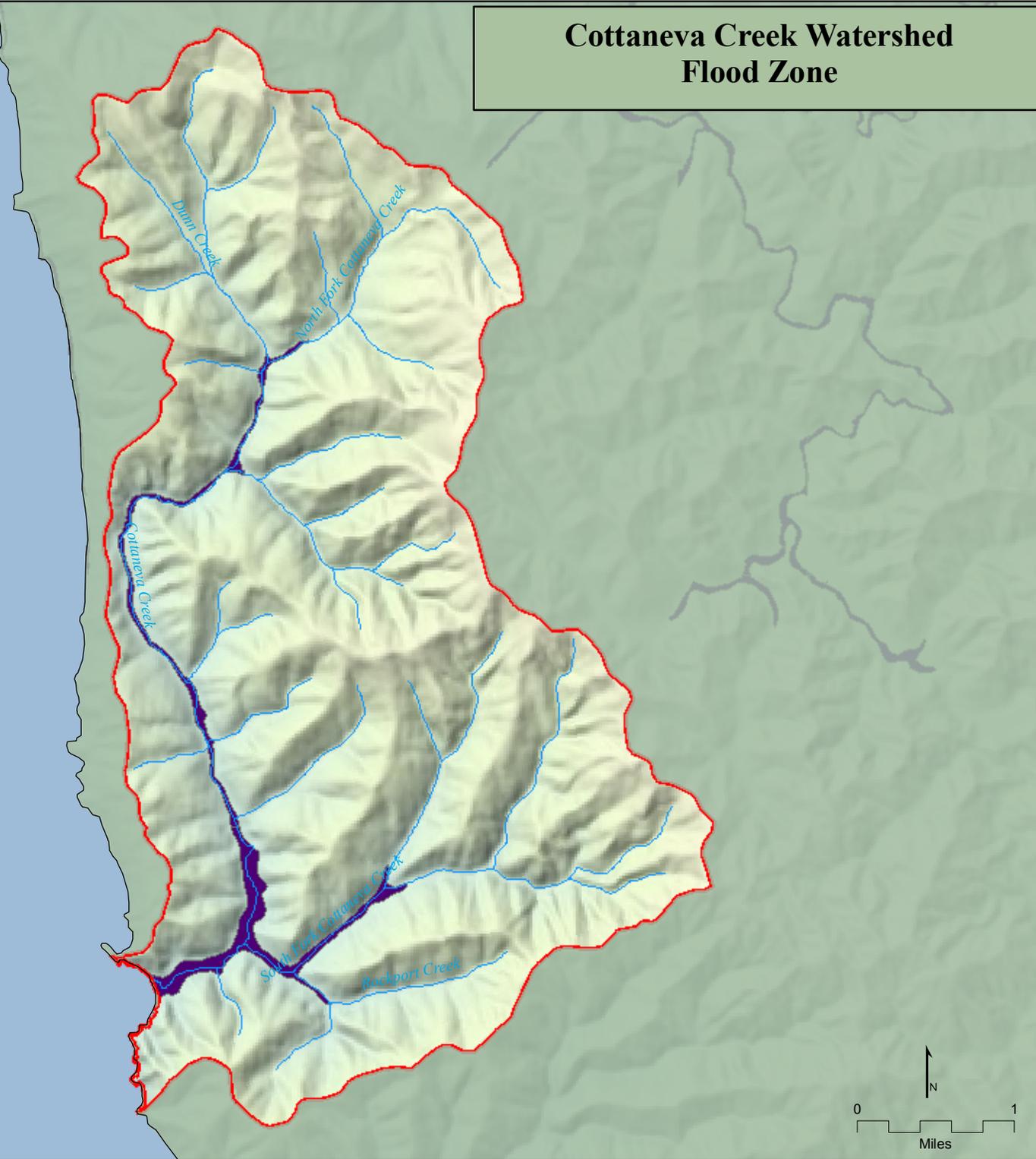
California Department of
Forestry, 1990. 1:100,000





NMFS-SWR-HCD
March 2009

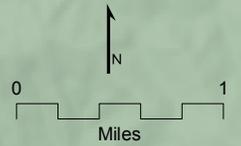
Cottaneva Creek Watershed Flood Zone



FEMA Flood Zones

FEMA, 1996. 1:24,000

-  100 Year Flood Zone
-  500 Year Flood Zone





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March 2009

Cottaneva Creek Watershed Geologic Features

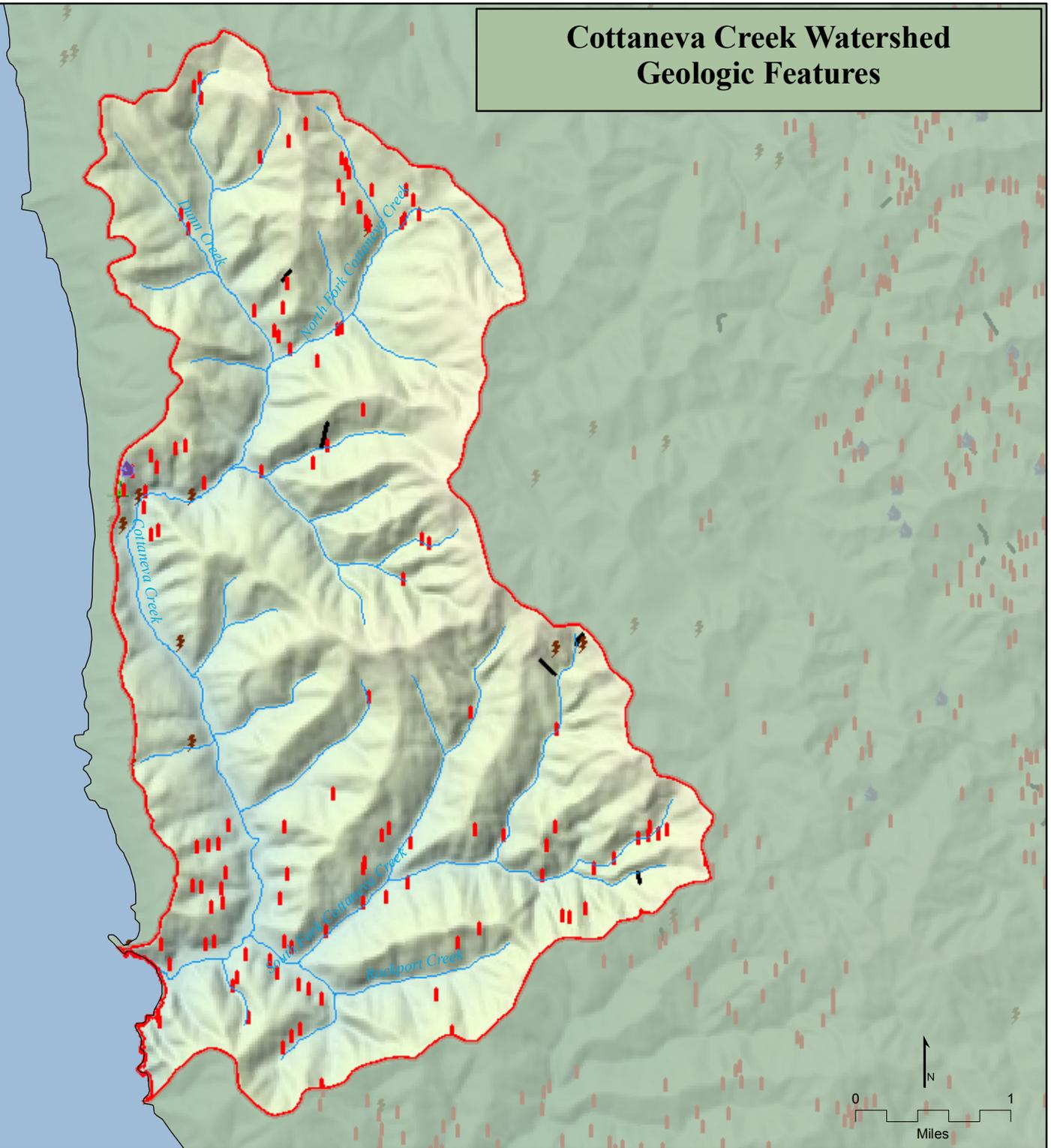
Geologic Feature

CA Geologic Survey

-  Dipbed
-  Marsh
-  Slide
-  Spring

 Gorge

 Torrent track





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March 2009

Cottaneva Creek Watershed Barriers / Gages

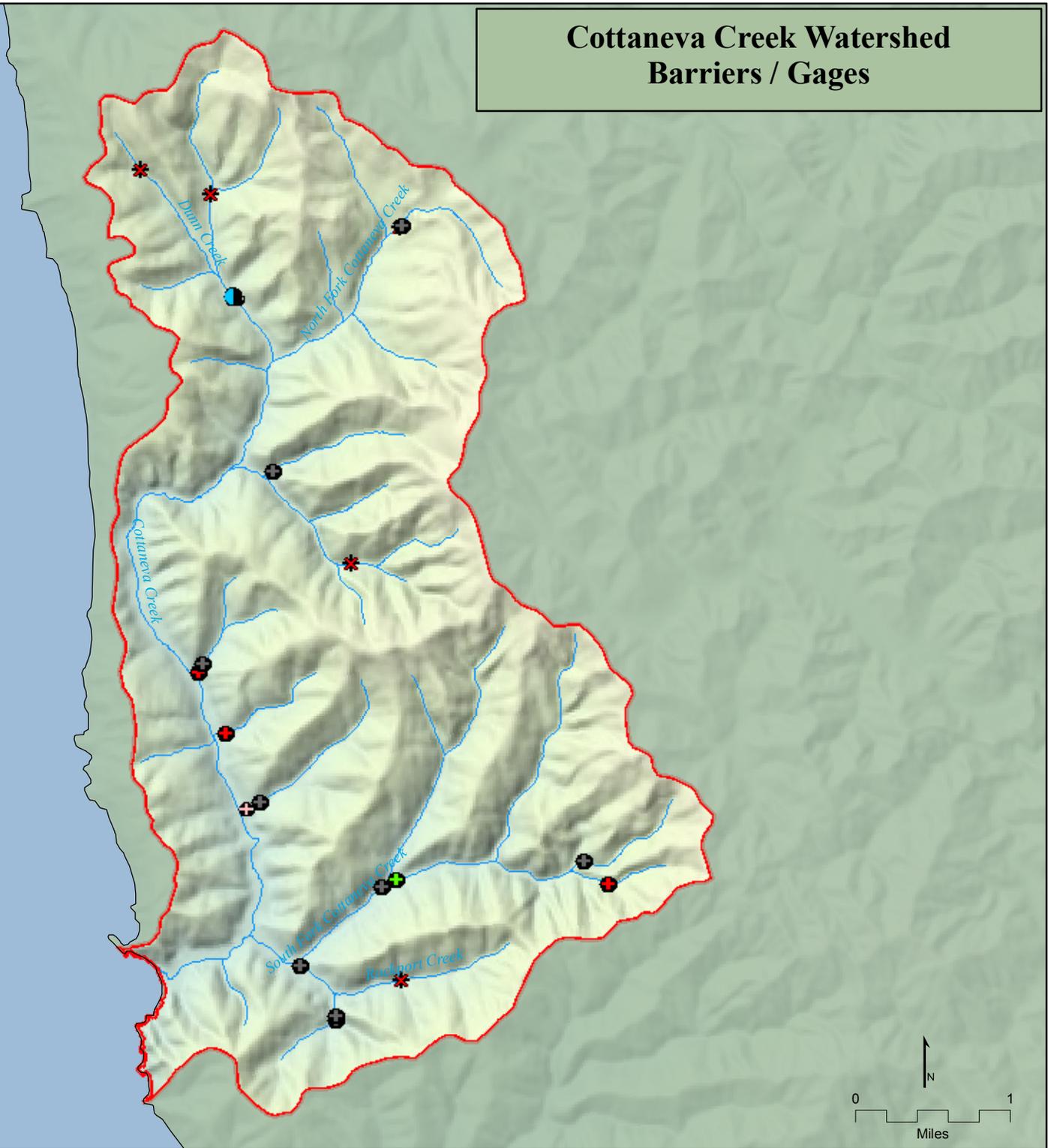
 Gage Station

USGS 2006

Barrier Type, Barrier Status

CA Fish Passage Assessment, PSMFC, 2008

-  Road crossing, Not a barrier
-  Road crossing, Partial
-  Road crossing, Total
-  Road crossing, Unknown
-  Non-structural, Total





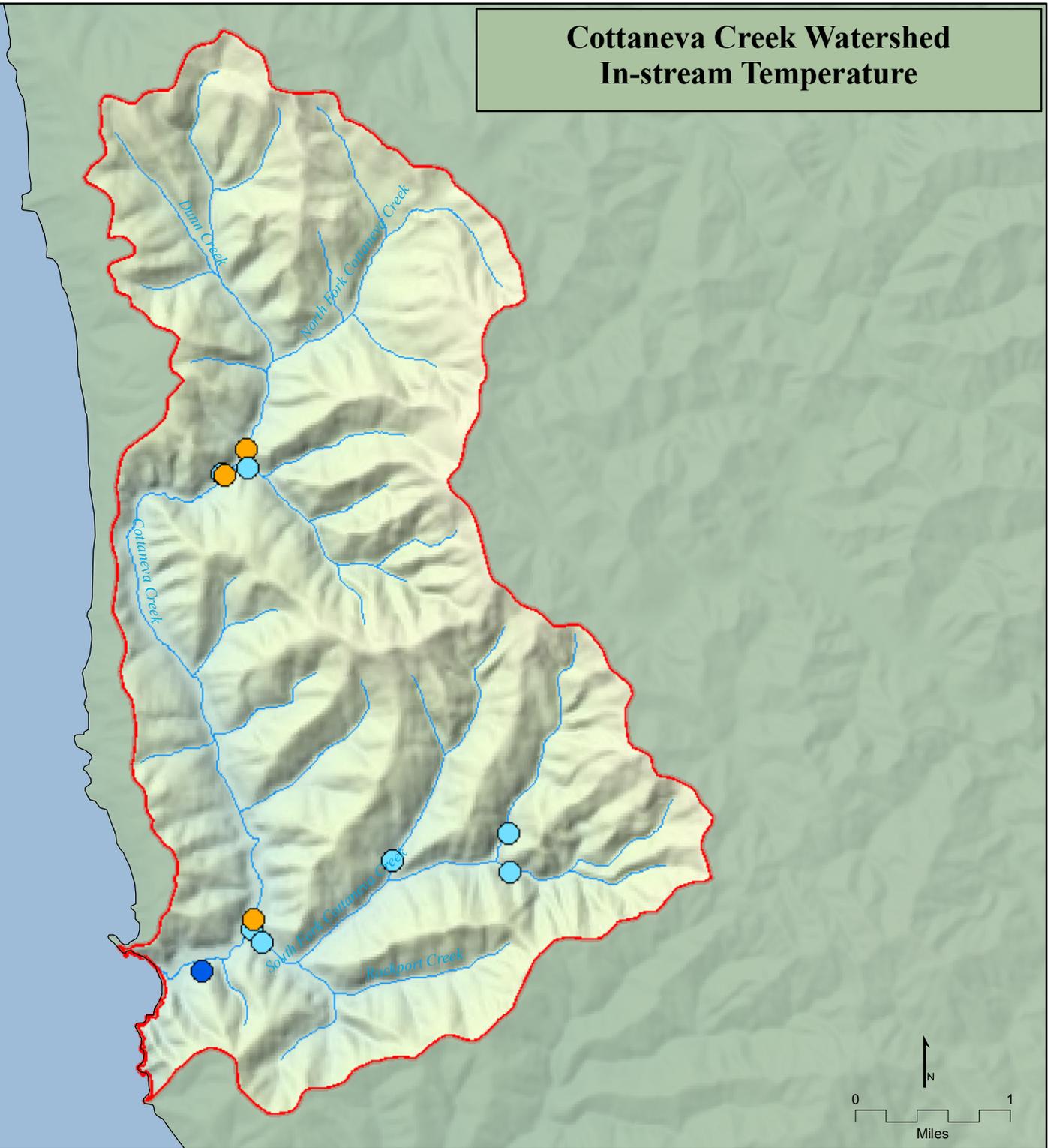
NMFS-SWR-HCD
March 2009

Cottaneva Creek Watershed In-stream Temperature

Average MWMT (°C)

-  0 - 14
-  14 - 15
-  15 - 17
-  17 - 28

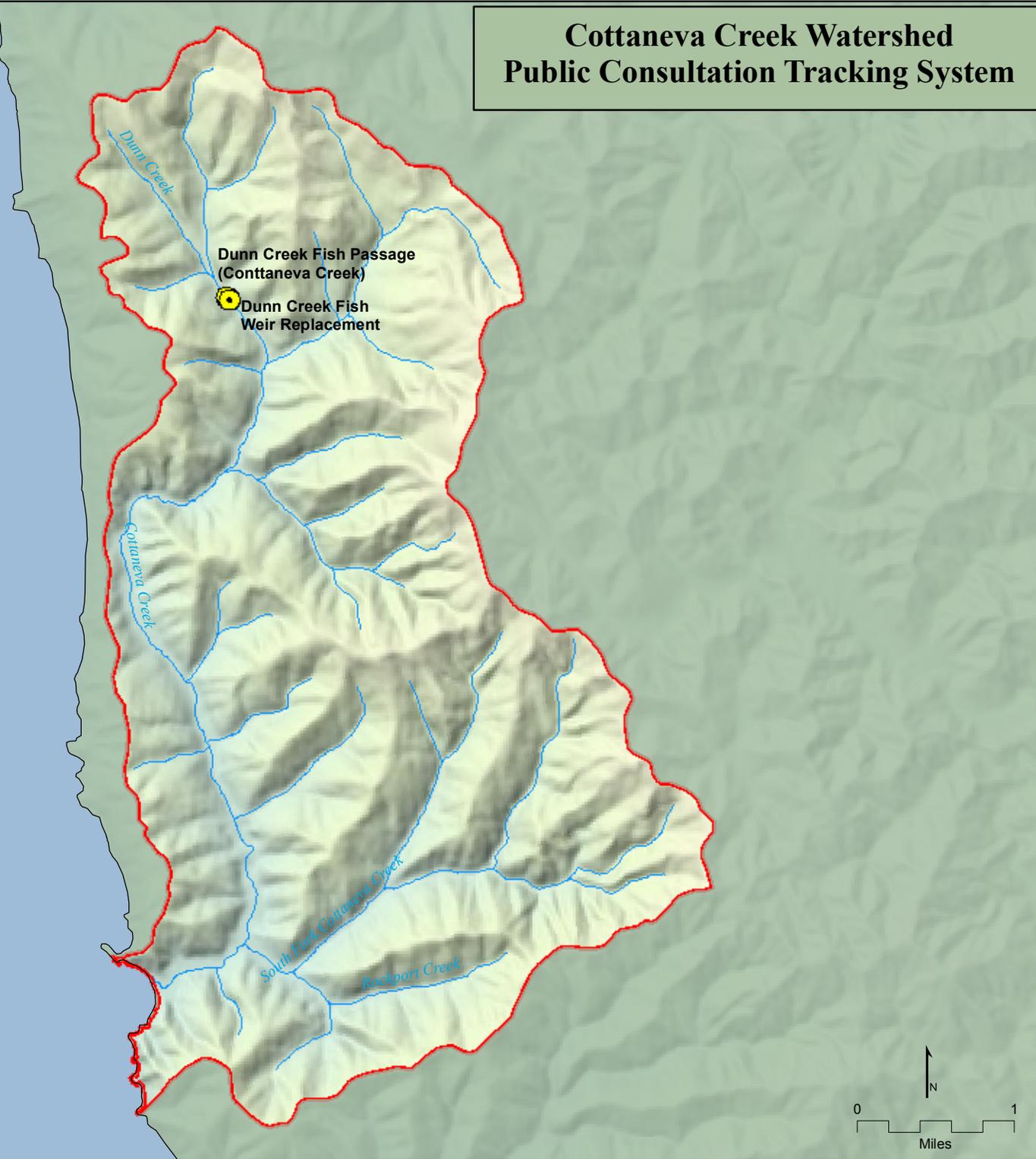
Sonoma
Ecology
Center,
2008.





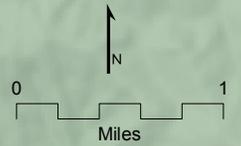
NMFS-SWR-HCD
March 2009

Cottaneva Creek Watershed Public Consultation Tracking System



 PCTS Record

Current as of January 2009.
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/>

NC_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

NC_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>

CC_Chinook_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

1801 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

USGS Streamgages
vector digital data
U.S. Geological Survey
Reston, Va
2006
http://water.usgs.gov/GIS/dsdl/USGS_Streamgages-NHD_Locations_Shape.zip

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

Dem_1_utm_f

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
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

Google Maps
remote-sensing image
raster digital data
2008
<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

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

Toxins

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/>