



Wages Creek Watershed

Area	Hydrologic Units	Calwater Subbasins ---	(Planning Watersheds)
8,584 Acres 3474 Hectares 13 Square Miles	18010108 4th Field HUC 1113	1113120202	Rider Gulch (8584 Acres)
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> 9 NOAA Fisheries, Critical Habitat Redesignation, 2005
Central California Coast Coho Lost Coast Diversity Stratum - Dependent Population	<u>Coho</u> 6 CDFG, Coho Distribution, May 2007
California Coastal Chinook Diversity Stratum - Dependent Population	<u>Chinook</u> 5 NOAA Fisheries, Critical Habitat Redesignation, 2005

Critical Habitat	Miles of Stream
Northern California Steelhead	9 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)
California Coastal Chinook	5 Miles of Stream

Miles of Waterway ^A	Miles	Number of Dams ^C
Naturally Occurring Waterways		0
Intermittent Stream	15	
Perennial Stream	11	

^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
None	7
	0 Dams 3 Diversions (Unknown Passage Status) 2 Natural Barriers (Chutes, Falls, Log Jams, etc. (1 Impassable))

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

Average Annual Precipitation ^E	Average Annual Precipitation Range ^E
52.5"	45 - 75"

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

Roads^A	(US Census Bureau (TIGER))	Miles
Roads in Watershed		
Secondary and connecting road, state highways		2
Local, neighborhood, and rural road, city street, unseparated		50
Vehicular trail, 4WD		1
Total Miles		53

Road Density	(US Census Bureau (TIGER))	
Miles of Roads per SqMi of Watershed		4.1
Miles of Roads per SqMi of 100m Riparian Buffer*		5.3

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

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

Roads^{A1}	(Timber Harvest Plans)	Miles
Roads in Watershed		
Abandoned Seasonal		
Bridge		
Existing Permanent (rocked)		7
Existing Seasonal		66
Existing Temporary & 4WD		1
Proposed Permanent (rocked)		
Proposed Seasonal		0
Proposed Temporary & 4WD		2
Reconstructed Seasonal		
Secondary Road (2-3 lanes)		

Road Density	(Timber Harvest Plans)	
Miles of Roads per SqMi of Watershed		5.9
Miles of Roads per SqMi of 100m Riparian Buffer*		5.7

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

^{A1}California Department of Forestry, Timber Harvest Plans for Ten Mile Watershed, 2006

Slope^D	Acres	Percent of watershed
Lands of 0-2 percent slope	41	0%
Lands of 2-4 percent slope	60	1%
Lands of 4-10 percent slope	269	3%
Lands of 10-15 percent slope	194	2%
Lands of 15-30 percent slope	1,141	13%
Lands of 30-60 percent slope	4,647	54%
Lands of 60-100 percent slope	2,167	25%
Lands of 100-117 percent slope	66	1%

Elevation Range	0 - 2692 ft.	0 - 821 m
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^DSlope derived from USGS 10 meter Digital Elevation Models (DEM's)

Vegetation^G	Acres	Percent of watershed
Annual grassland	222	3%
Barren	67	1%
Conifer Forest		
Closed Cone-Pine-Cypress	5	0%
Douglas Fir	242	3%
Montane Hardwood-Conifer	27	0%
Redwood	6,781	79%
Hardwood Forest		
Montane Hardwood	1,102	13%
Montane Riparian	17	0%
Hardwood Woodland		
Blue Oak Woodland	2	0%
Coastal Oak Woodland	7	0%
Eucalytus	5	0%
Shrub	62	1%
Urban	59	1%

^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	8,584	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	8,561	100%
State (Parks & Recreation)	21	0%

^HManagement Landscape, CA Department of Forestry, 2002

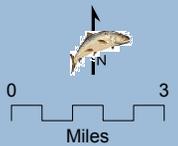
Area Under a Timber Harvest Plan^A past 10 years	Area Under a Timber Harvest Plan^A past 12 years (1994-2006)
2,511 29% of watershed	2,835 33% of watershed

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

Population^I	Housing^I
Total Population within the watershed -- 130 People	Total Housing Units within the watershed -- 87 Houses
	Housing Density
	0 to Less than 1 Housing Unit / 160 Acres 68%
	1 Unit / 160 Acres to 1 Unit / 20 Acres 31%
	1 Unit / 20 Acres to 1 Unit / 5 Acres 1%
	1 Unit / 5 Acres to 2 Units / Acre
	2 Units / Acres to Greater than or Equal to 5 Units / Acre

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

Wages Creek Watershed

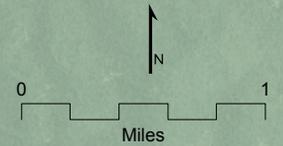




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Wages Creek Watershed





NMFS-SWR-HCD

February 2009

Wages Creek Watershed

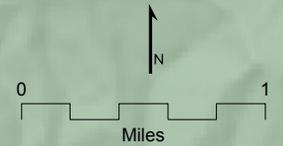
**Rider Gulch
8584 Acres**

Rider Creek

North Fork Wages Creek

Wages Creek

South Fork Wages Creek

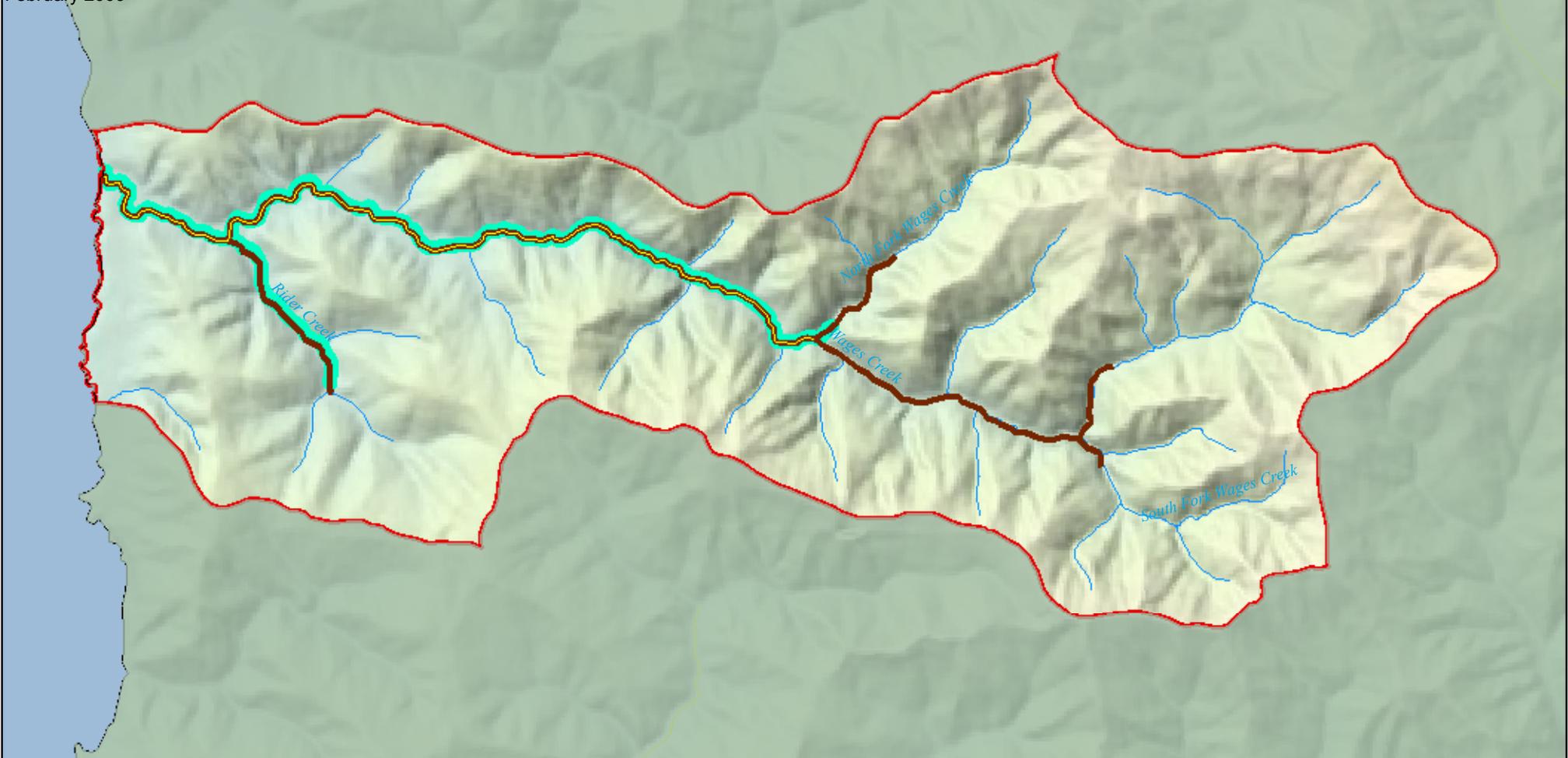




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Wages Creek Watershed Fish Distribution and Critical Habitat



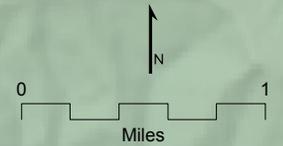
 CC Chinook Distribution and Critical Habitat
National Marine Fisheries Service, August 2005. 1:100,000.

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

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

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

 Wages Creek Watershed

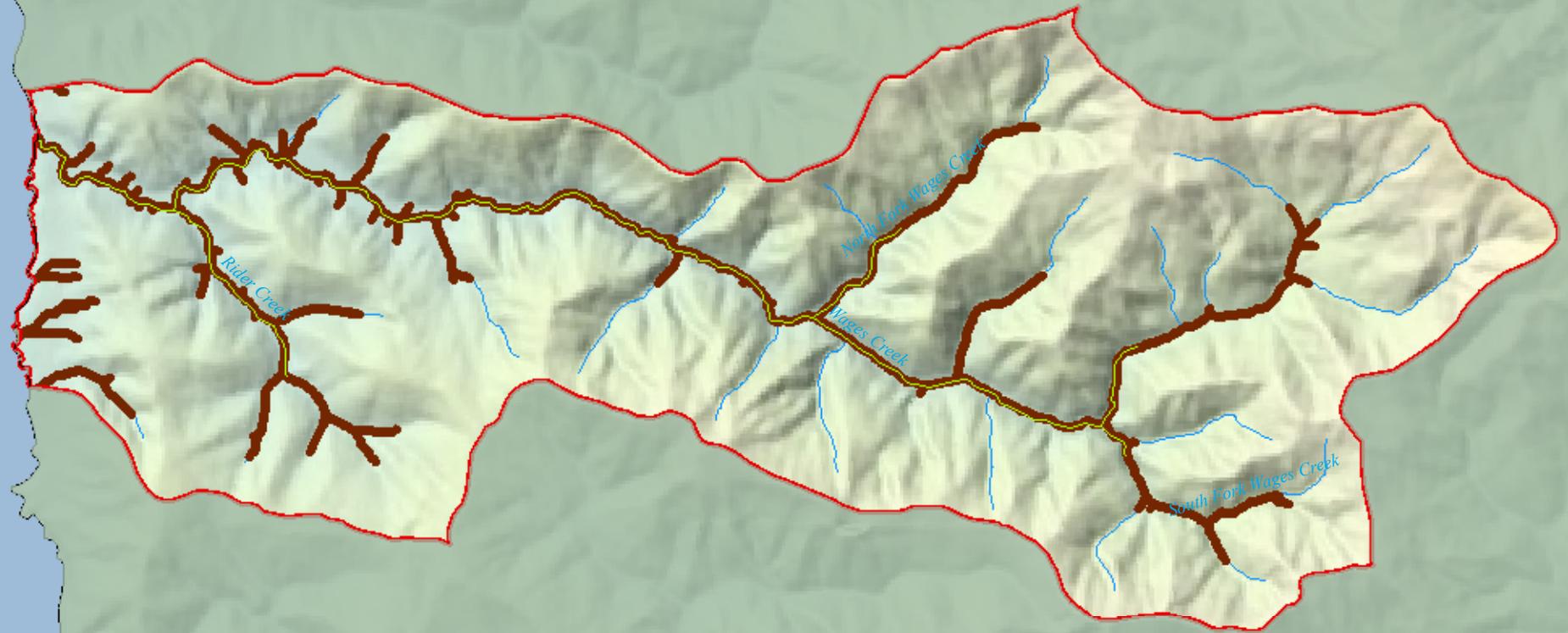




NMFS-SWR-HCD

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Wages Creek Watershed Steelhead Current vs. Historical

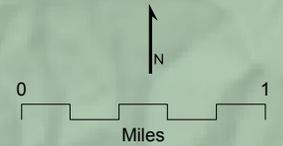


 Current NC Steelhead Distribution
National Marine Fisheries Service,
August 2005. 1:100,000.

 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

 Wages Creek Watershed

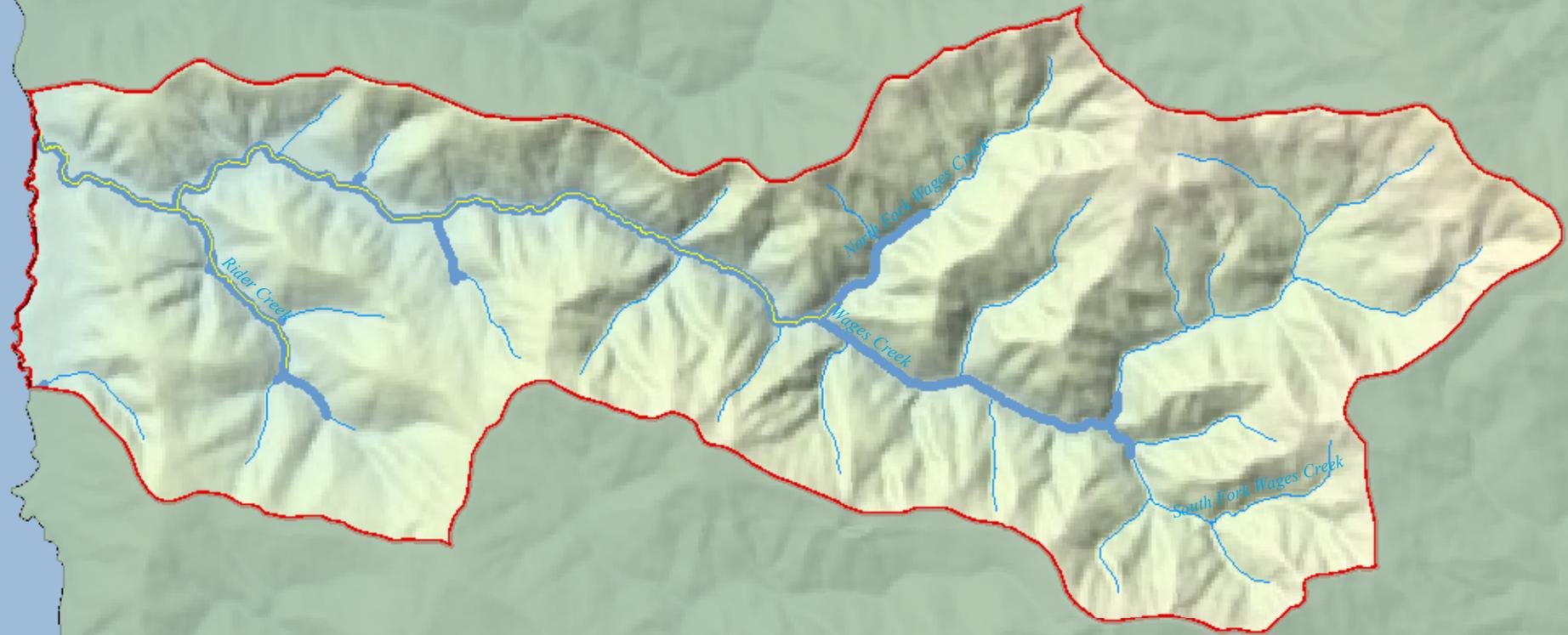




NMFS-SWR-HCD

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Wages Creek Watershed Coho Current vs. Historical

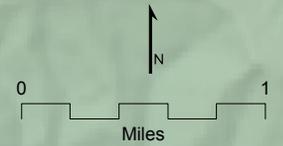


 Coho Distribution
CDFG - NCNCR-ISB, 2007. 1:100,000.

 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

 Wages Creek Watershed

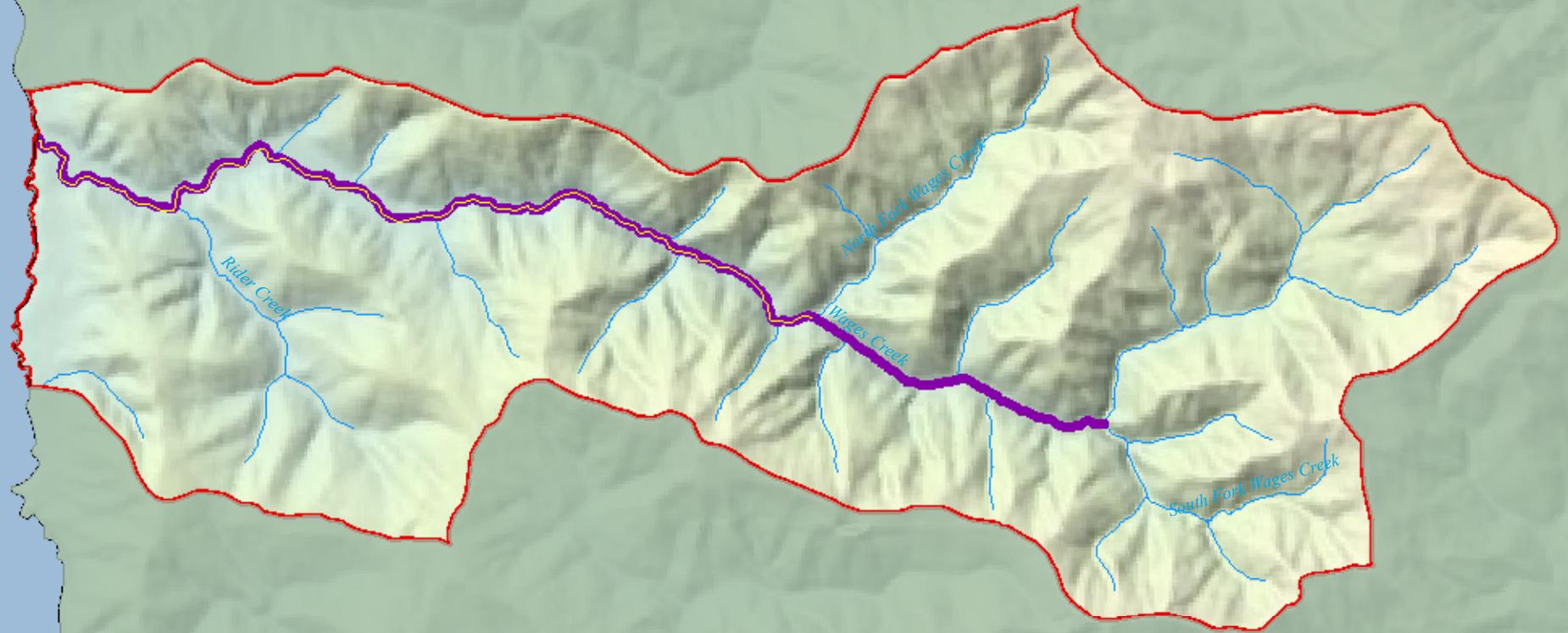




NMFS-SWR-HCD

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Wages Creek Watershed Chinook Current vs. Historical

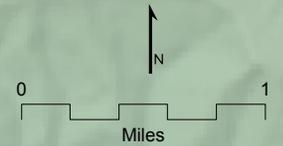


 Current CC Chinook Distribution
National Marine Fisheries Service,
August 2005. 1:100,000.

 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

 Wages Creek Watershed





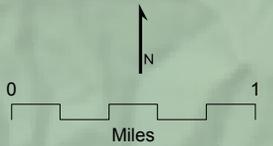
NMFS-SWR-HCD
February 2009

Wages Creek Watershed Elevation



Wages Creek Elevation (Meters)

	High : 821	SCFSC 10 Meter Digital Elevation Model (DEM)
	Low : 0	

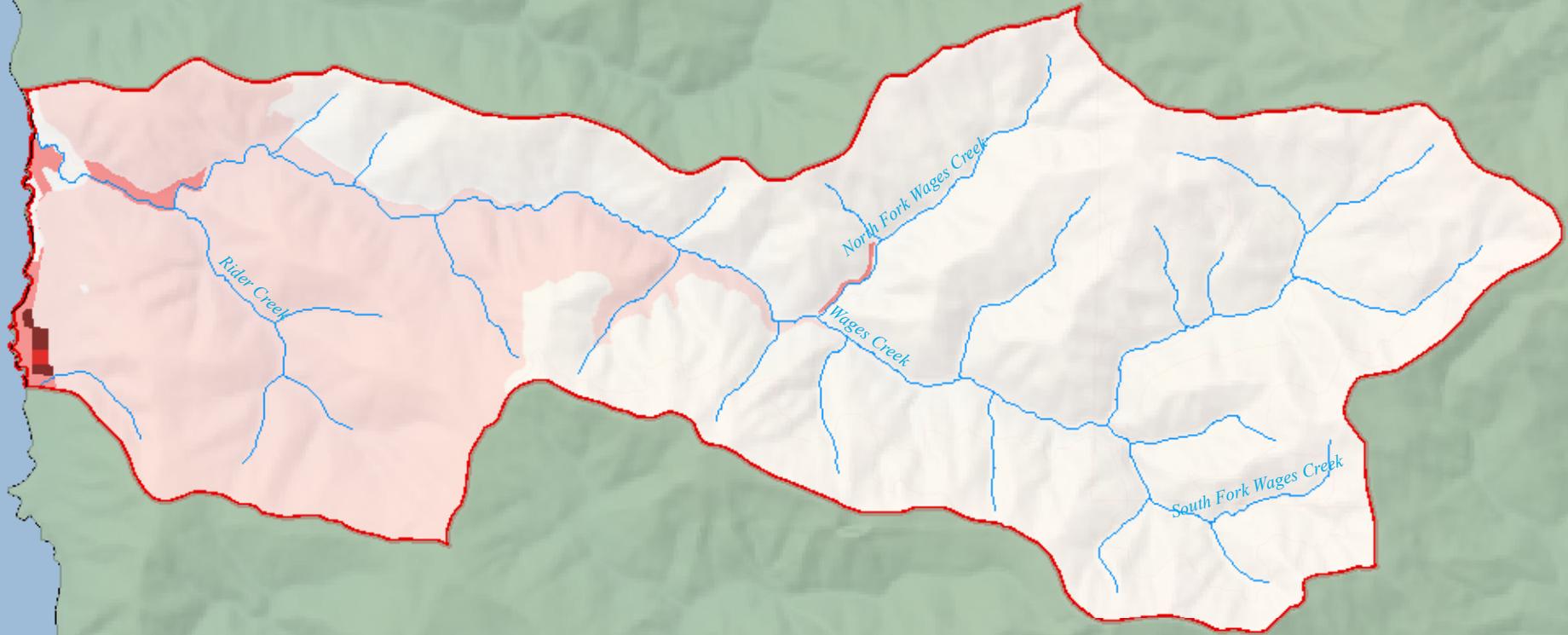




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Wages Creek Watershed Development



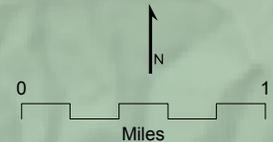
Housing Density

	0 to < 1 Housing Unit / 160 Acres (68%)
	1 Unit / 160 Acres to 1 Unit / 20 Acres (31%)
	1 Unit / 20 Acres to 1 Unit / 5 Acres (1%)
	1 Unit / 5 Acres to 2 Units / Acre
	2 Units / Acre to \geq to 5 Units / Acre

Population within the Watershed = 130 People

Houses within the Watershed = 87

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

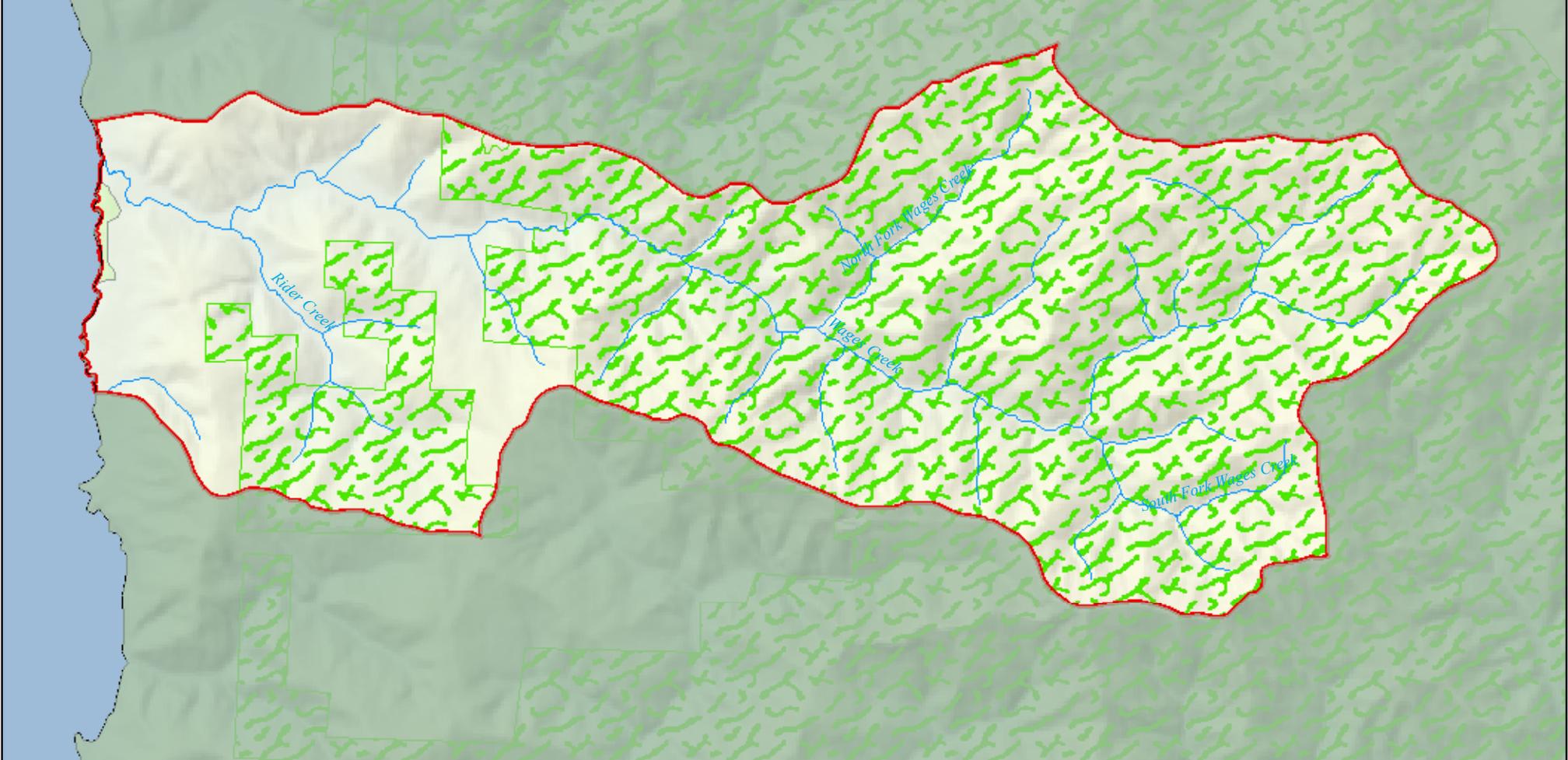




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Wages Creek Watershed Ownership



Forest Industrial Ownership

USFWS 2000

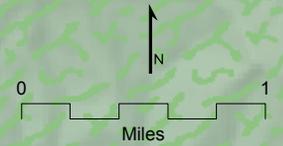
 Georgia Pacific

Ownership

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

 Private

 State, Parks & Recreation





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Wages Creek Watershed Road Density



Road

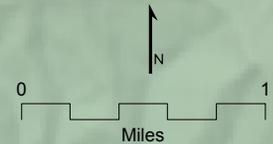
U.S. Census Bureau - Tiger 2000, 2002. 1:24,000

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



4.1

Overall Watershed
Density = 4.1 Miles / SqMi

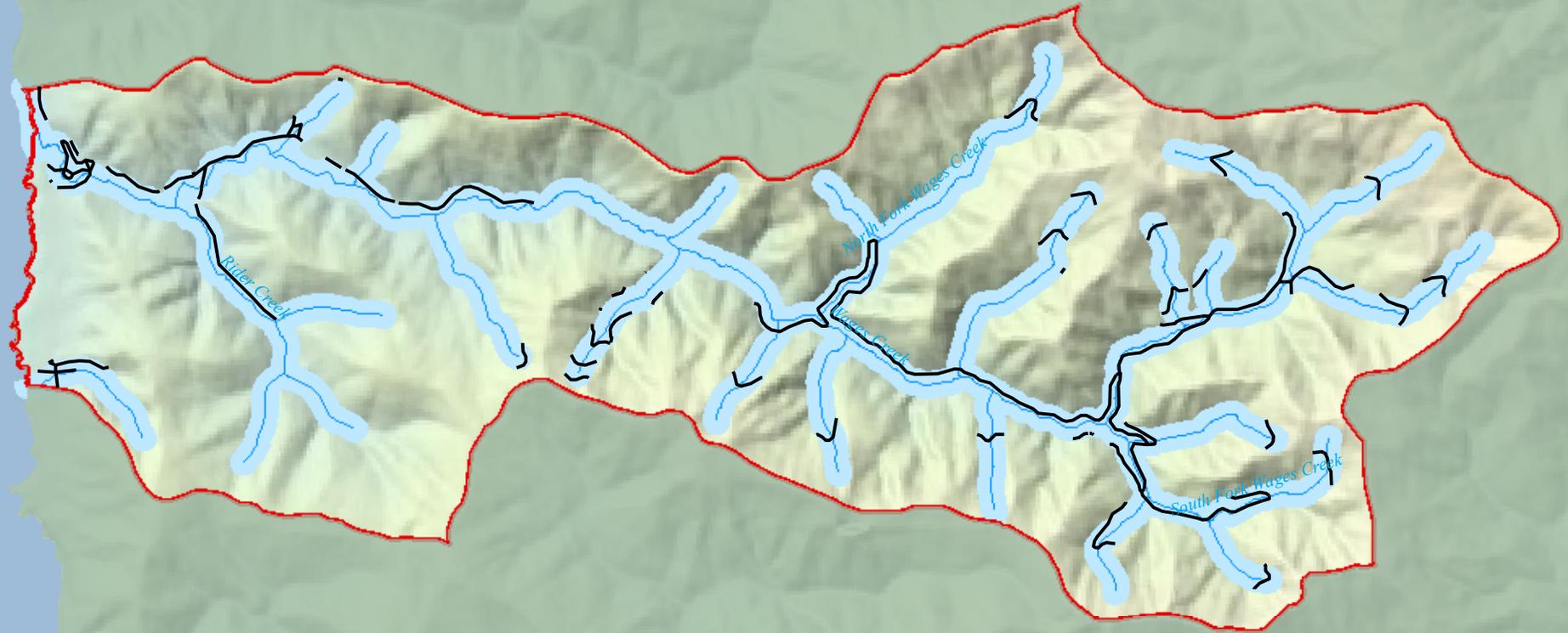




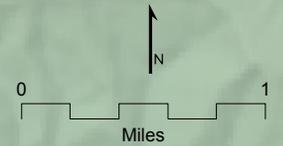
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Wages Creek Watershed Road Density in the Riparian Corridor



 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 = 5.3 Miles / SqMi of Corridor





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Wages Creek Watershed Road Density per Timber Harvest Plan Roads



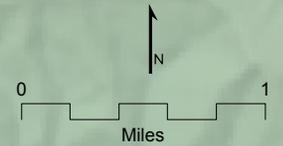
Road

California Department of Forestry, Timber Harvest Plans, 2006

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

5.9

Overall Watershed
Density = 5.9 Miles / SqMi

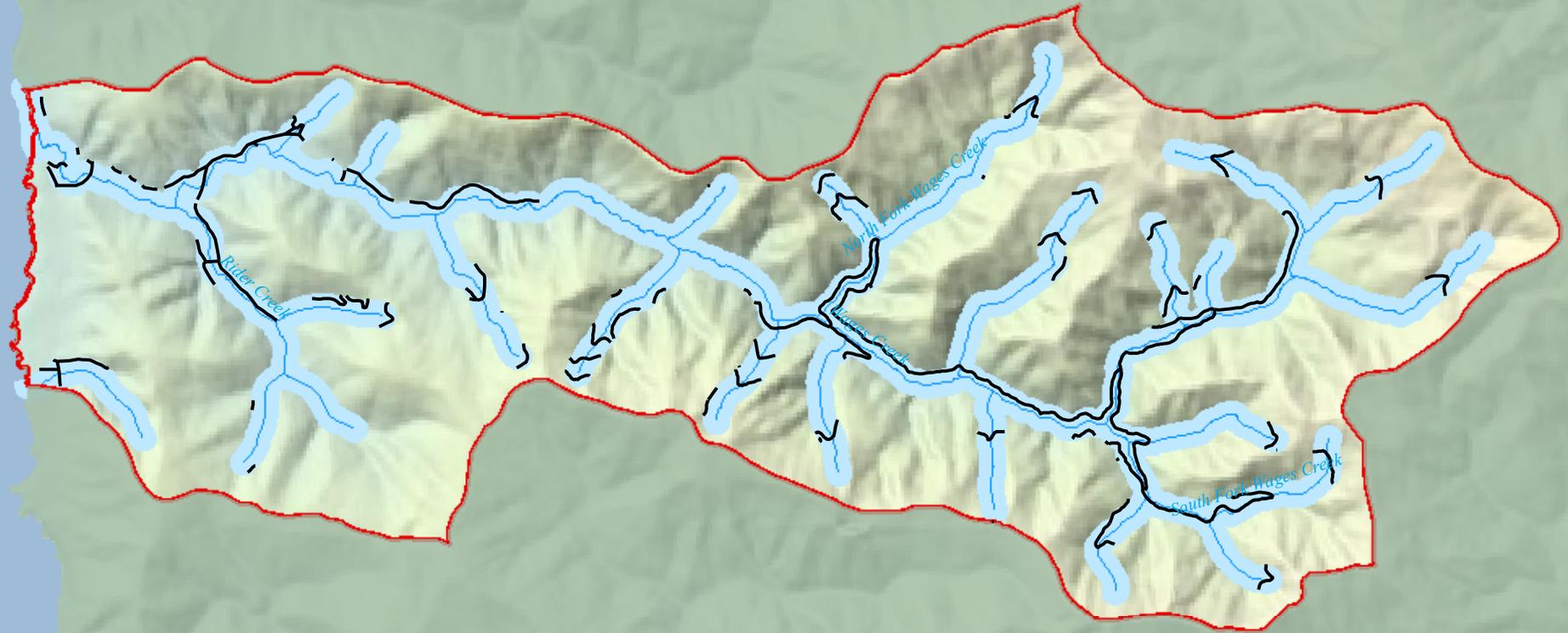




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Wages Creek Watershed Road Density in the Riparian Corridor per Timber Harvest Plan Roads

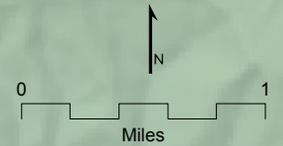


 Road Segments within the 200 meter Riparian Corridor
California Department of Forestry, Timber Harvest Plans, 2006

 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 = 5.7 Miles / SqMi of Corridor

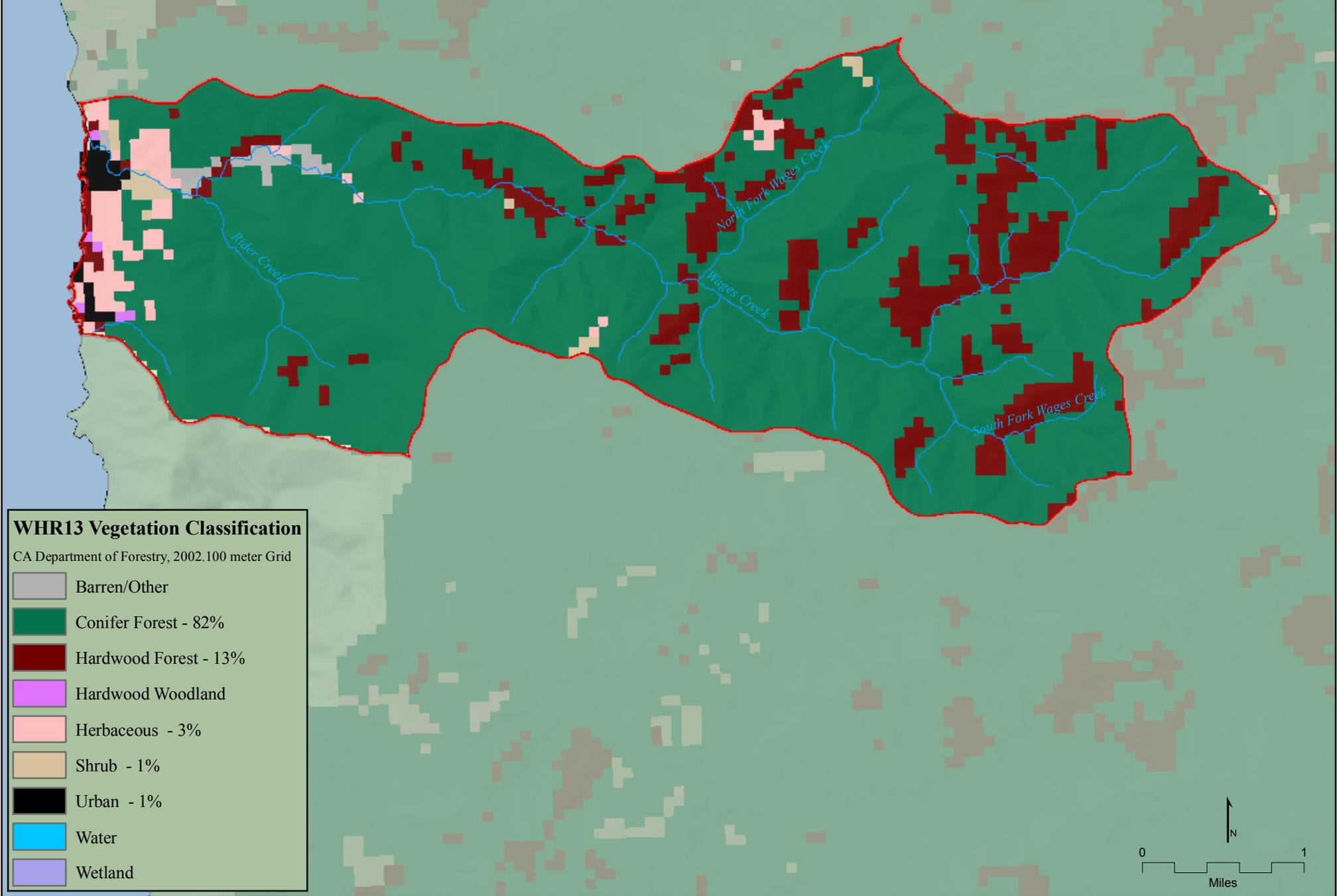




NMFS-SWR-HCD

February 2009

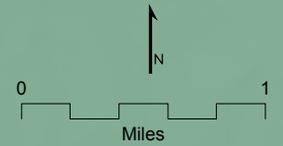
Wages Creek Watershed Vegetation



WHR13 Vegetation Classification

CA Department of Forestry, 2002. 100 meter Grid

- Barren/Other
- Conifer Forest - 82%
- Hardwood Forest - 13%
- Hardwood Woodland
- Herbaceous - 3%
- Shrub - 1%
- Urban - 1%
- Water
- Wetland

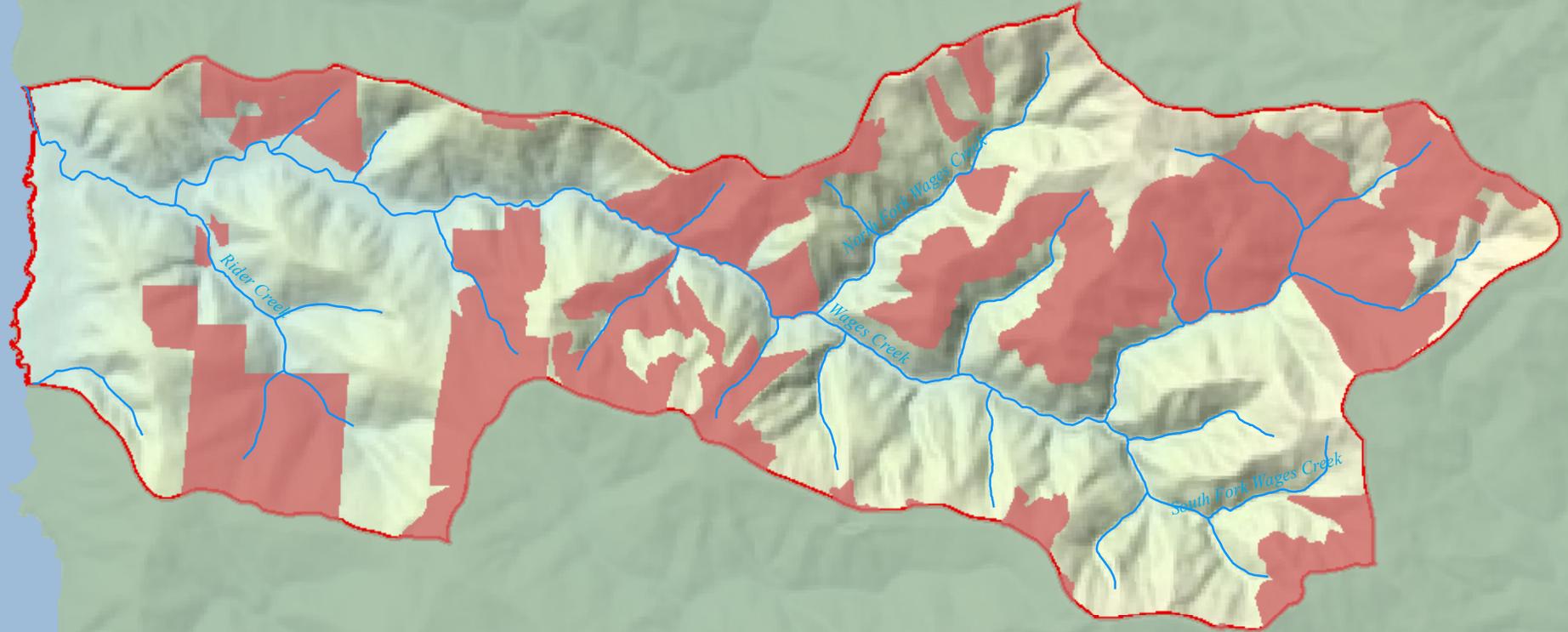




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Wages Creek Watershed Timber Harvesting 1994-2006

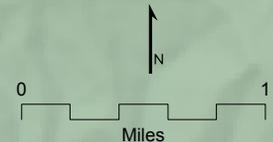


 1:24,000 Streams

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)

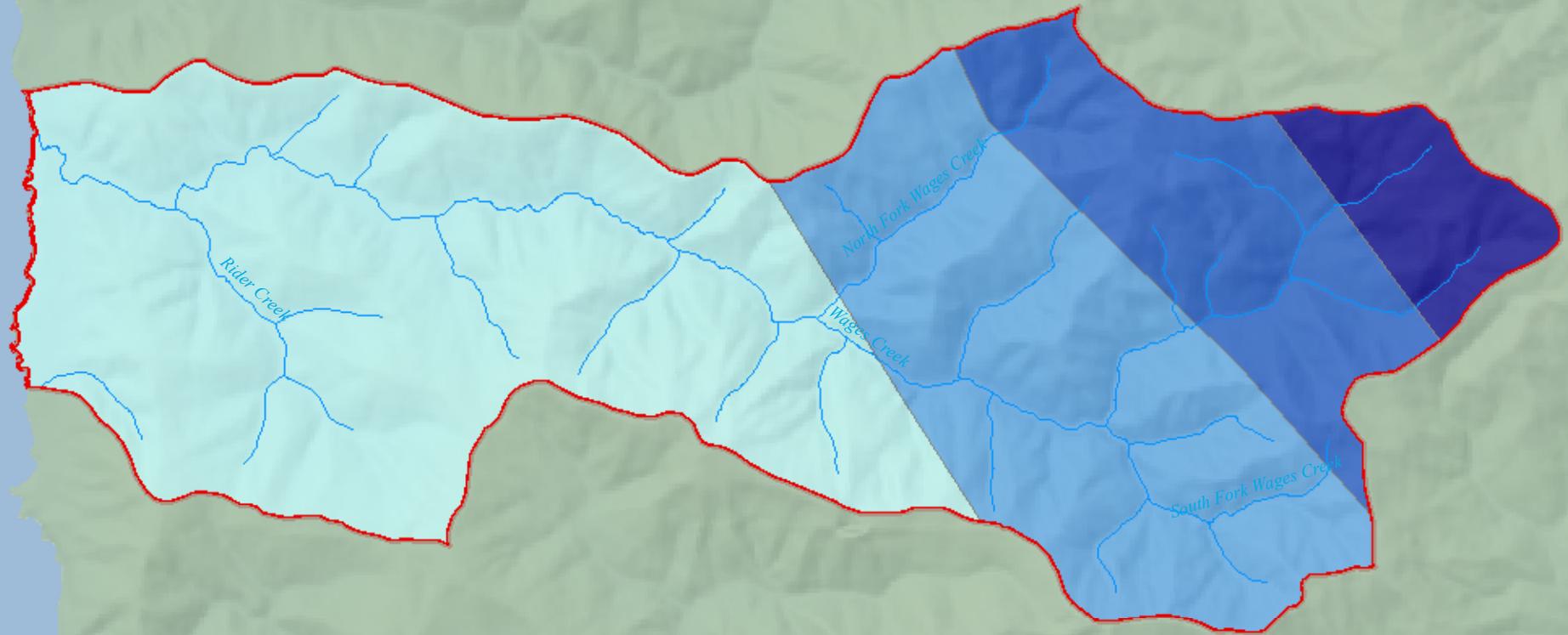




NMFS-SWR-HCD

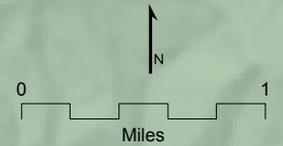
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Wages Creek Watershed Precipitation



1900-1960 Annual Precipitation

	to 45"	Watershed
	to 55"	Average
	to 65"	52.5"
	to 75"	California Department of Forestry, 1990. 1:100,000

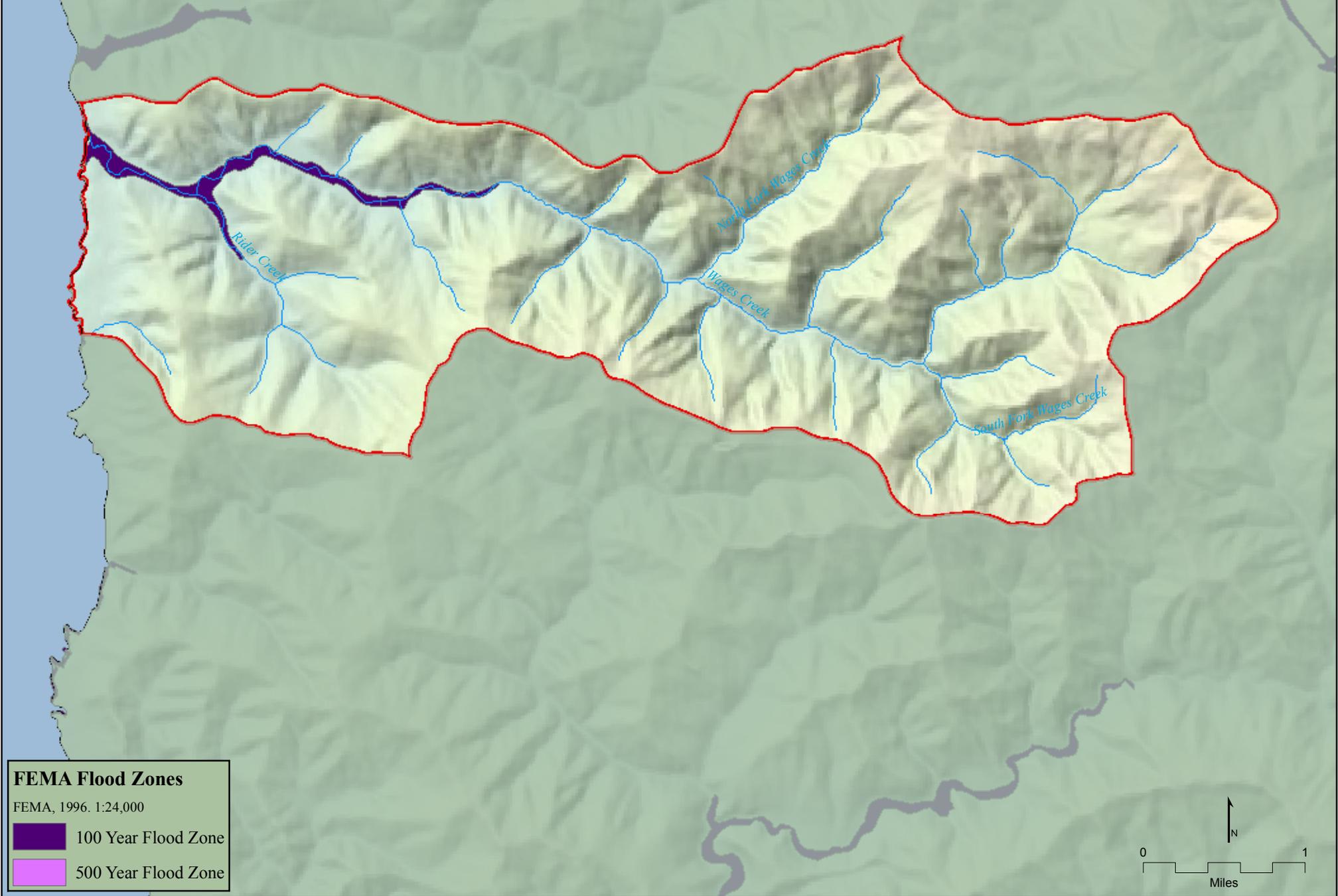




NMFS-SWR-HCD

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Wages Creek Watershed Flood Zone



FEMA Flood Zones

FEMA, 1996. 1:24,000

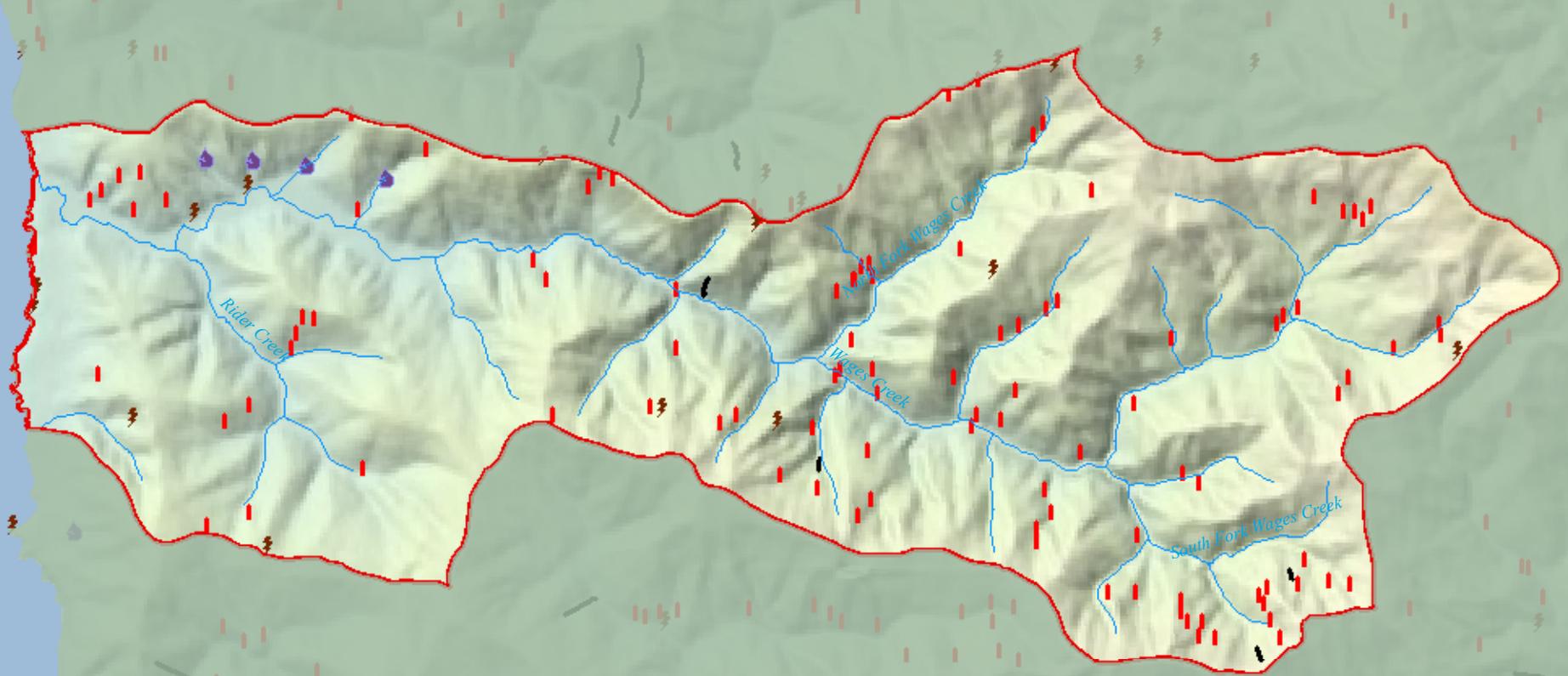
-  100 Year Flood Zone
-  500 Year Flood Zone



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Wages Creek Watershed Geologic Features



Geologic Feature

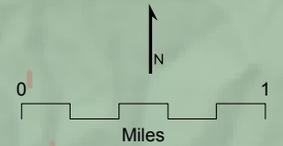
CA Geologic Survey 2001

 Dipbed

 Slide

 Spring

 Torrent track

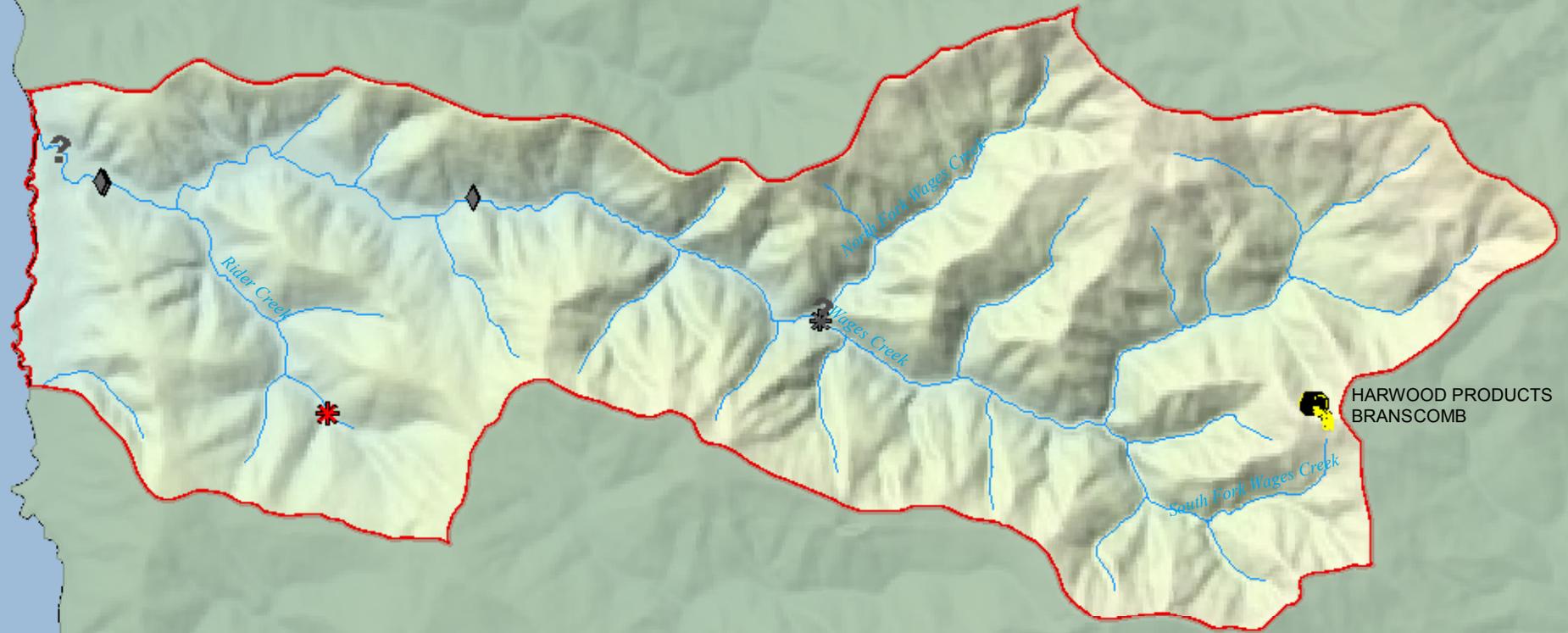




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Wages Creek Watershed Barriers / Industrial Discharge



Industrial Discharge Site

BASINS, USEPA 2001

Barrier Type, Barrier Status

CA Fish Passage Assessment, PSMFC, 2008



Diversion, Unknown



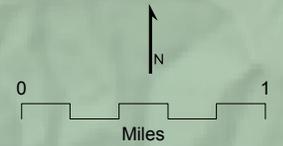
Non-structural, Unknown



Non-structural, Total



Unknown, Structure may not still be in existence

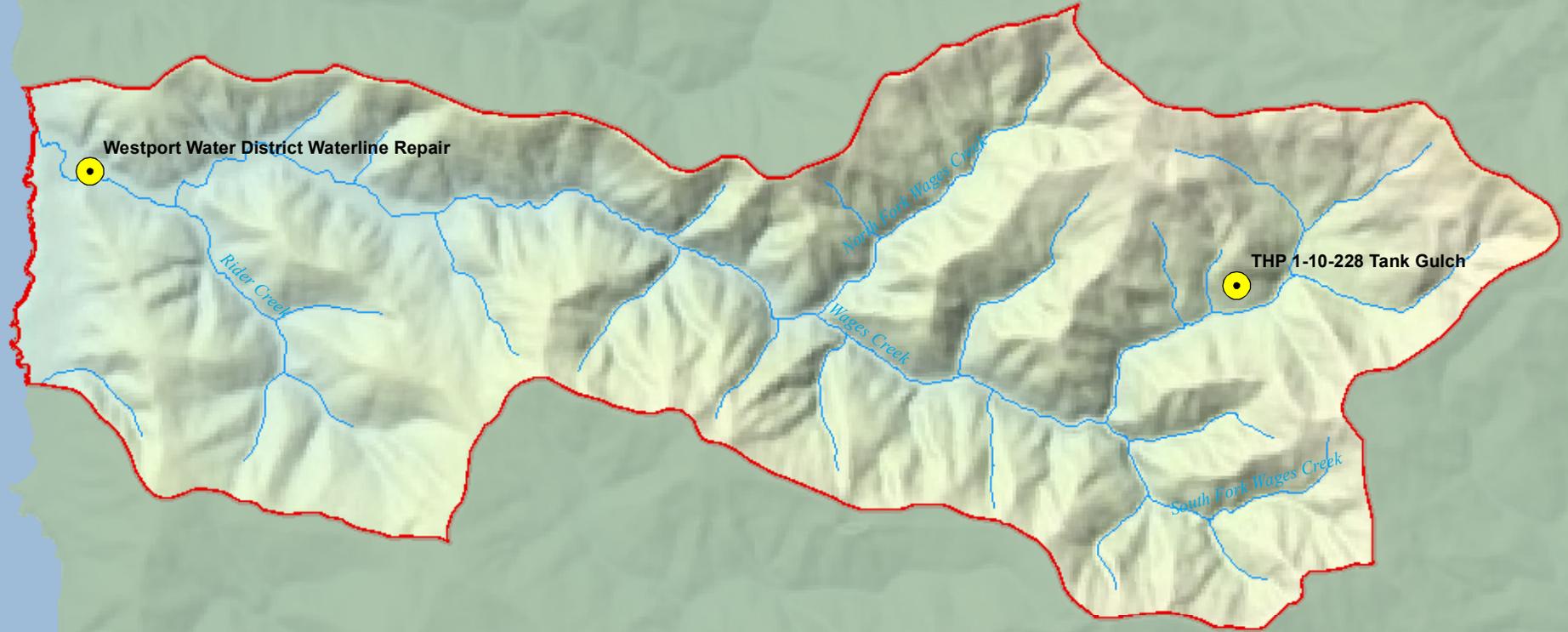




NMFS-SWR-HCD

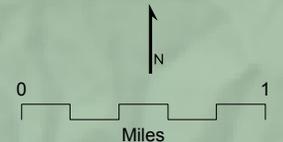
February 2009

Wages Creek Watershed Public Consultation Tracking System



 PCTS_January_2009

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>

CC_Chinook_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

Total Maximum Daily Load (TMDL)

R1_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/>

roads
vector digital data
Timber Harvest Plans
California Department of Forestry and Fire
Protection
1:24,000
2006

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

naip_1-1_2n_s_ca045_2004_1 (Mendocino)
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

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

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