



*Albion River Watershed*

Area	Hydrologic Units	Calwater Subbasins ---	(Planning Watersheds)
27,508 Acres	18010108	1113400001	Middle Albion River (4874 acres)
11,131 Hectares	4th Field HUC	1113400002	SF Albion River (5833 acres)
43 Square Miles		1113400003	Lower Albion River (8071 acres)
	1113	1113400006	Upper Albion River (8733 acres)

**Location**  
Mendocino County

4th Field Calwater

Species Potential	Miles of Streams with Species Present
Central California Coast <b>Coho</b> Lost Coast Diversity Stratum - Independent Population	<u>Coho</u> 29 CDFG, Coho Distribution, May 2007
Northern California <b>Steelhead</b> North-Central Coastal Diversity Stratum - Independent Population	<u>Steelhead</u> 41
California Coastal <b>Chinook</b> North-Central Coastal Diversity Stratum - Dependent Population	<u>Chinook</u> 13 NOAA Fisheries, Critical Habitat Redesignation, 2005

**Critical Habitat**

Central California Coast Steelhead: 41 Miles  
 California Coastal Chinook: 13 Miles  
 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 <sup>A</sup>	Miles	Number of Dams <sup>C</sup>
Naturally Occurring Waterways		4
Miles of CA FPR Class I streams	47	1 - Impassable
Miles of CA FPR Class II streams	57	1 - Summer Dam (Temporarily impassable)
Miles of CA FPR Class III streams	159	2 - Unknown passage status
Miles of CA FPR Class IV streams	1	
Miles of CA FPR Class V streams	4	
--- OR ---		
Miles of Perennial streams	49	
Miles of Intermittent streams	218	

<sup>A</sup>California Department of Forestry, Timber Harvest Plans for Albion Watershed, 2006

<sup>C</sup>Passage Assessment Database, Pacific States Marine Fisheries Commission, 2008

USGS Gaging Stations <sup>B</sup>	Number of Barriers <sup>C</sup>
Albion River Tributary near Comptche USGS11468020	54 4 Dams (1 Impassable)
Albion River near Comptche USGS11468010	28 Water Rights Diversions 19 Road Crossings (2 Impassable)

<sup>B</sup>US Environmental Protection Agency BASINS Project, 2001

<sup>C</sup>Passage Assessment Database, Pacific States Marine Fisheries Commission, 2008

**EPA Total Maximum Daily Load Classification (TMDL)<sup>1</sup>**

Sedimentation/Siltation

Sources: Silviculture, Logging Road Construction/Maintenance, Nonpoint source

<sup>1</sup>State Water Resources Control Board, 2003



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**Appropriated Waterways<sup>J</sup>**

Marsh Creek (tributary to Albion River) is a Fully Appropriated Stream

<sup>J</sup>California State Water Resources Control Board, 1998.

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**Average Annual Precipitation<sup>E</sup>**

54 inches

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**Average Annual Precipitation Range<sup>E</sup>**

40-65"

<sup>E</sup>California Mean Annual Precipitation Zones, 1900-1960, CA Department of Forestry, 1990

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**Roads<sup>A</sup>**

Miles

Roads in Watershed	332
Miles of Secondary Roads	20
Miles of Improved (Rocked) Roads	52
Miles of Unimproved (Seasonal) Roads	232
Miles of Temporary & 4WD Roads	11
Proposed (2006 THP's)	16

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**Road Density**

Miles of Roads per SqMi of Watershed	7.7
Miles of Roads per SqMi of 100m Riparian Buffer*	6.4

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

<sup>A</sup>California Department of Forestry, Timber Harvest Plans for Albion Watershed, 2006

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**Slope<sup>D</sup>**

Acres

Percent of watershed

Lands of 0-2 percent slope	1383	5%
Lands of 2-4 percent slope	882	3%
Lands of 4-10 percent slope	2127	8%
Lands of 10-15 percent slope	1583	6%
Lands of 15-30 percent slope	5619	20%
Lands of 30-60 percent slope	12894	47%
Lands of 60-100 percent slope	2943	11%
Lands of > 100 percent slope	79	0%

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**Elevation Range**

0-1560 ft.

0-475 m

<sup>D</sup>Slope derived from USGS 10 meter Digital Elevation Models (DEM's)

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**Vegetation<sup>G</sup>**

Acres

Percent of watershed

Annual grassland	2466	9%
Barren	2	0%
Coastal Scrub	672	2%
Conifer Forest		
Closed-Cone Pine- Cypress	1035	4%
Montane Hardwood-Conifer	605	2%
Redwood	20396	74%
Hardwood Forest		
Montane Hardwood	2167	8%
Montane Riparian	5	0%
Mixed Chaparral	5	0%
Urban	35	0%
Water	109	0%

<sup>G</sup>Multi-source Land Cover Data (2002 v2), CA Department of Forestry, 2002. 100 meter Grid

<b>Erodability of Watershed<sup>F</sup></b>	Acres	Percent of watershed
Total Rating = 5	27508	100%

<sup>F</sup>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]

<b>Land Ownership<sup>H</sup></b>	Acres	Percent of watershed
Georgia Pacific	1137	4%
Mendocino Redwoods	21968	80%
Other Private	4208	15%
Van Damme State Park	192	<1%

<sup>H</sup>Management Landscape, CA Department of Forestry, 2002 and US FWS (data supplied by major landowners who were undergoing an HCP), 2000

<b>Area Under a Timber Harvest Plan<sup>A</sup> past 10 years</b>		<b>Area Under a Timber Harvest Plan<sup>A</sup> past 20 years</b>	
11,169 Acres	41% of watershed	17,698 Acres	64% of watershed

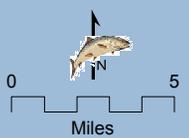
<sup>A</sup>California Department of Forestry, Timber Harvest Plans for Albion Watershed, 2006

<b>Population<sup>I</sup></b>	<b>Housing<sup>I</sup></b>	
Total Population within the watershed -- 893 People	Total Housing Units within the watershed -- 487 Houses	
	Housing Density	
	0 to Less than 1 Housing Unit / 160 Acres	58%
	1 Unit / 160 Acres to 1 Unit / 20 Acres	34%
	1 Unit / 20 Acres to 1 Unit / 5 Acres	7%
	1 Unit / 5 Acres to 2 Units / Acre	1%
	2 Units / Acres to Greater than or Equal to 5 Units / Acre	0%

<sup>I</sup>Census 2000 Block Data (Migrated), CA Department of Forestry, 2003



# Albion River Watershed



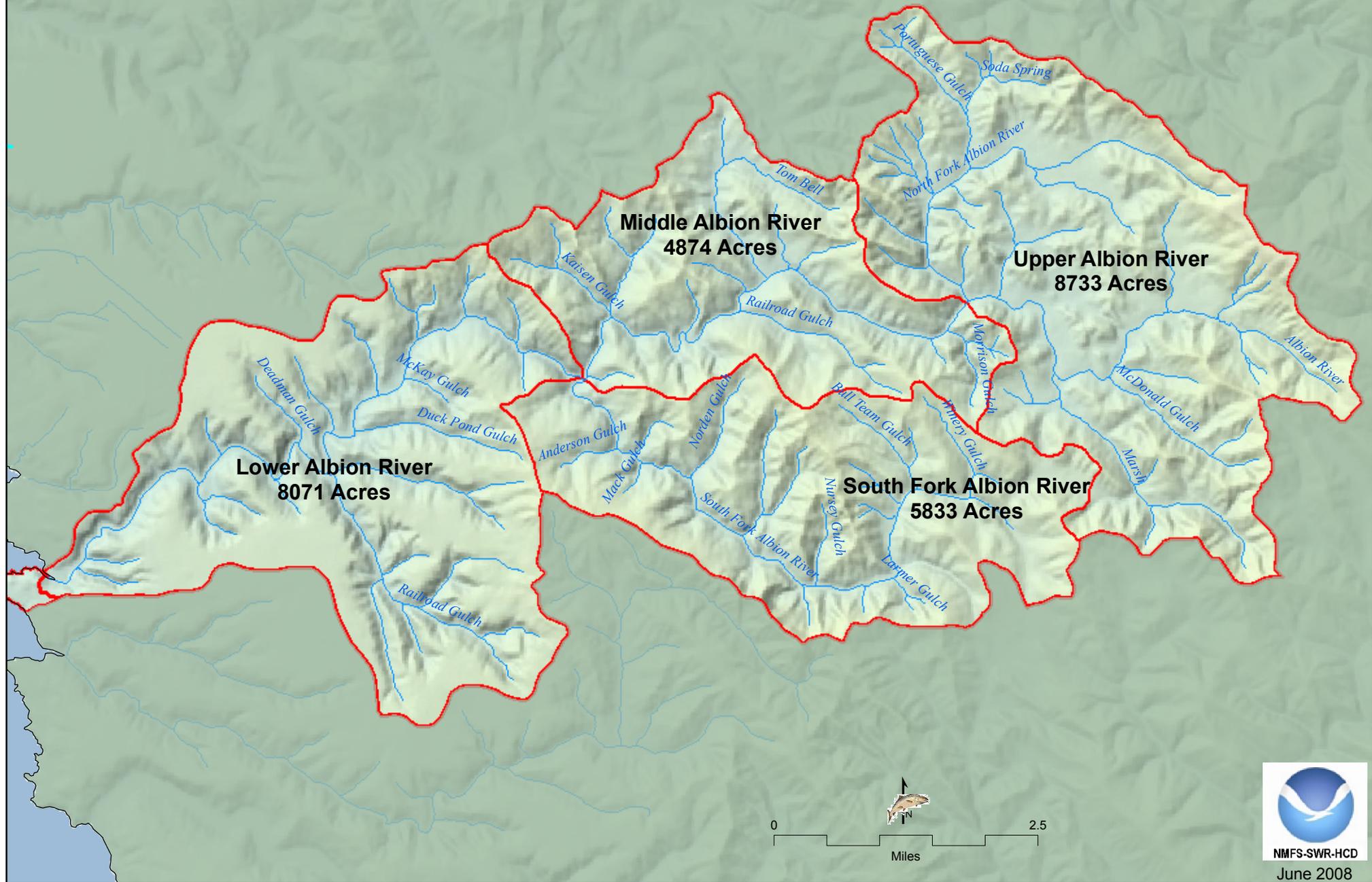
# Albion River Watershed



Image Date 2004 (USDA NAIP)



**Albion River Watershed  
CalWater Planning Watersheds**



# Albion River 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.

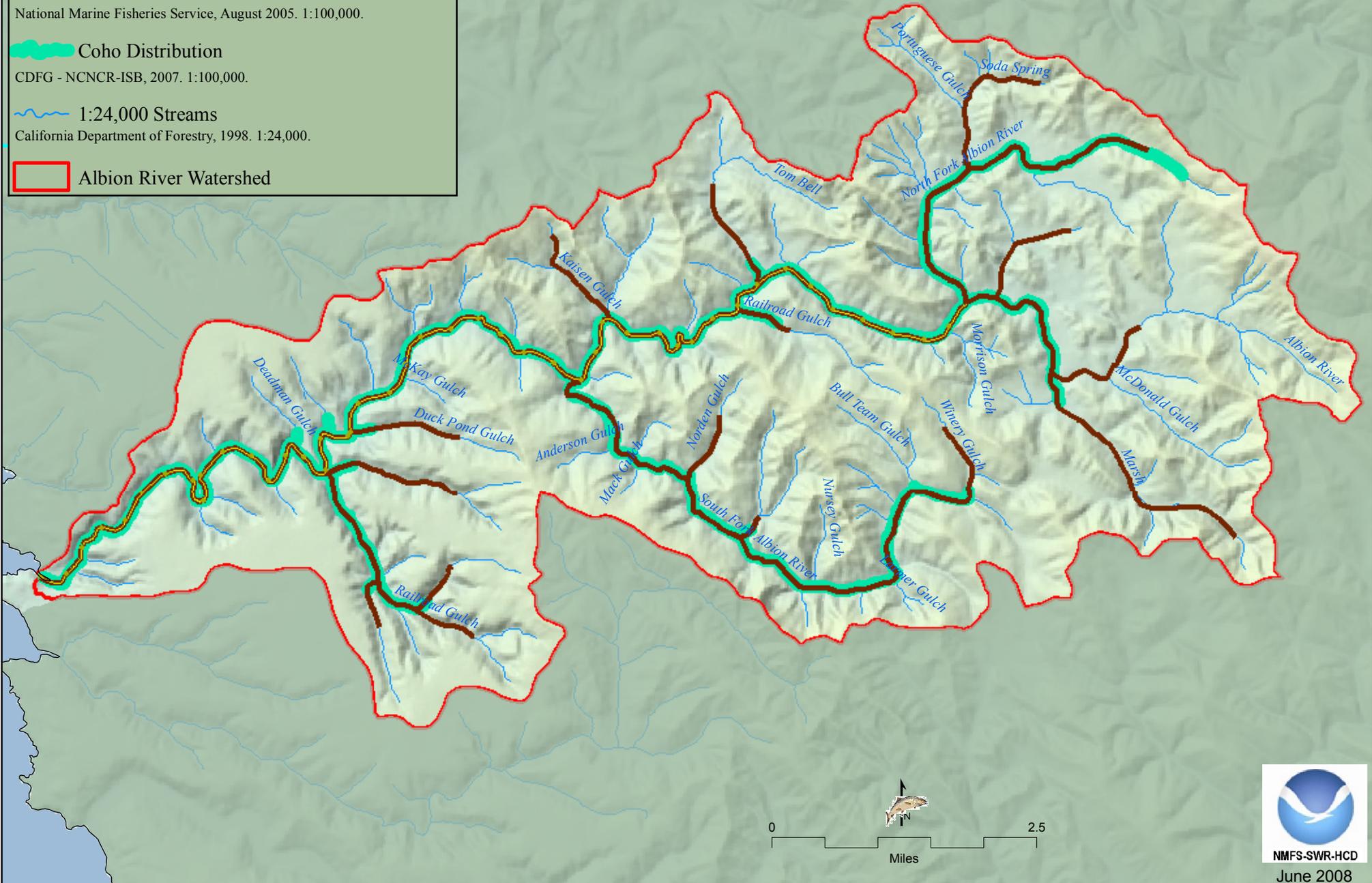
 Coho Distribution

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

 1:24,000 Streams

California Department of Forestry, 1998. 1:24,000.

 Albion River Watershed



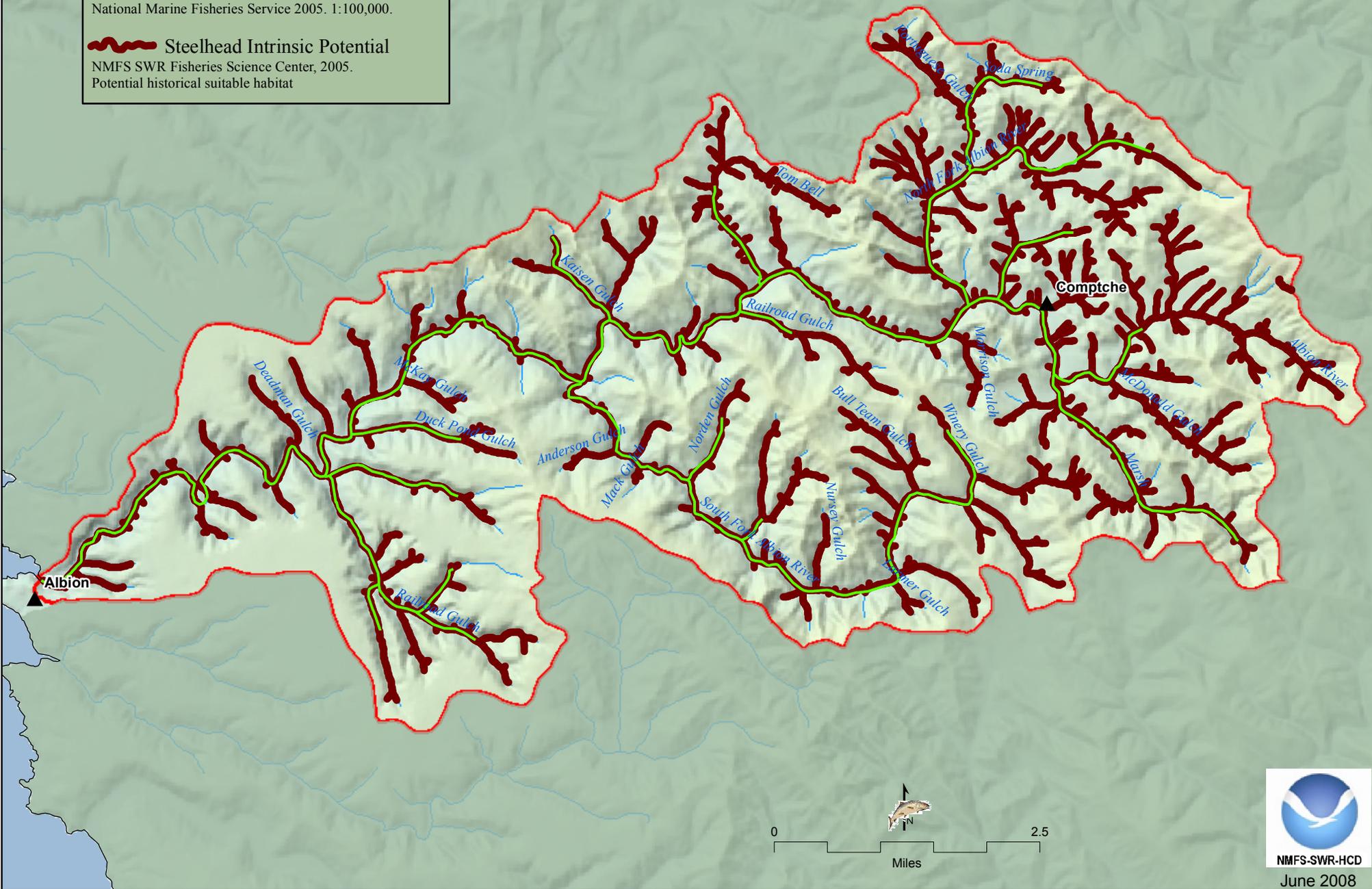
NMFS-SWR-HCD

June 2008

# Albion River Watershed Steelhead Current vs. Historical

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

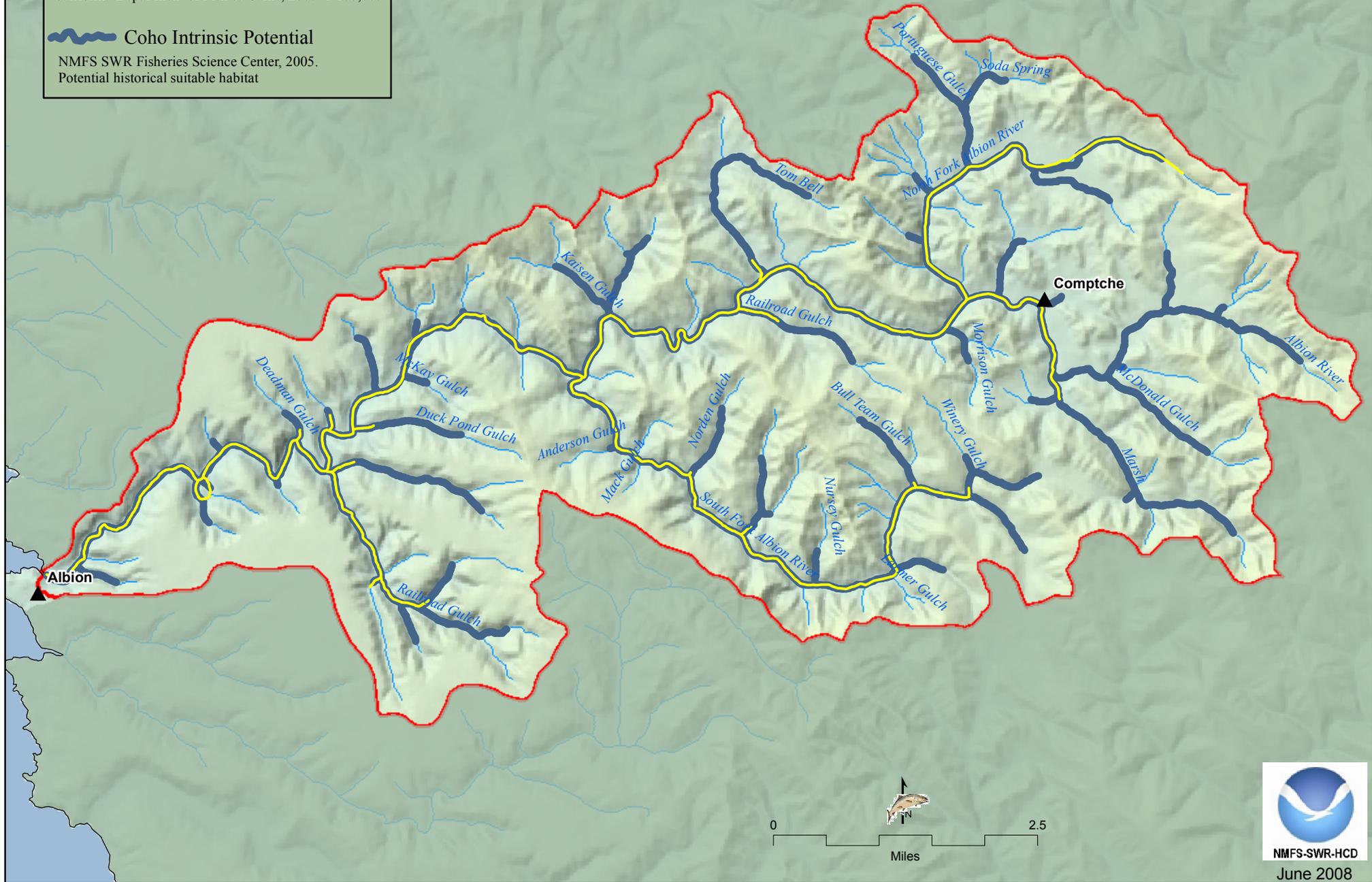
 Steelhead Intrinsic Potential  
NMFS SWR Fisheries Science Center, 2005.  
Potential historical suitable habitat



# Albion River Watershed Coho Current vs. Historical

 **Current Coho Distribution**  
California Department of Fish & Game, 2007. 1:100,000

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



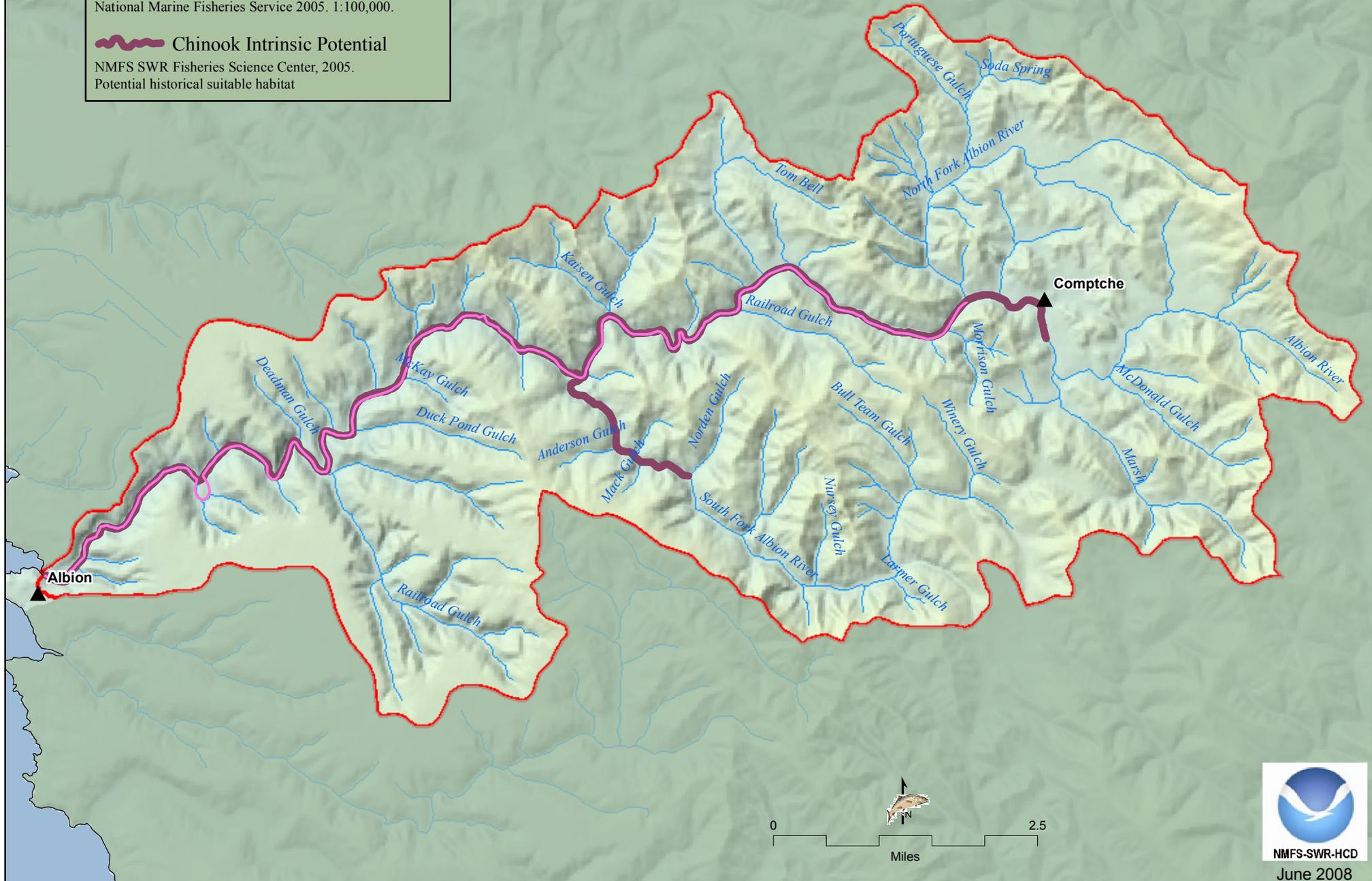
# Albion River Watershed Chinook Current vs. Historical

 Current CC Chinook Distribution

National Marine Fisheries Service 2005. 1:100,000.

 Chinook Intrinsic Potential

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

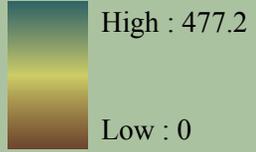


NMFS-SWR-HCD

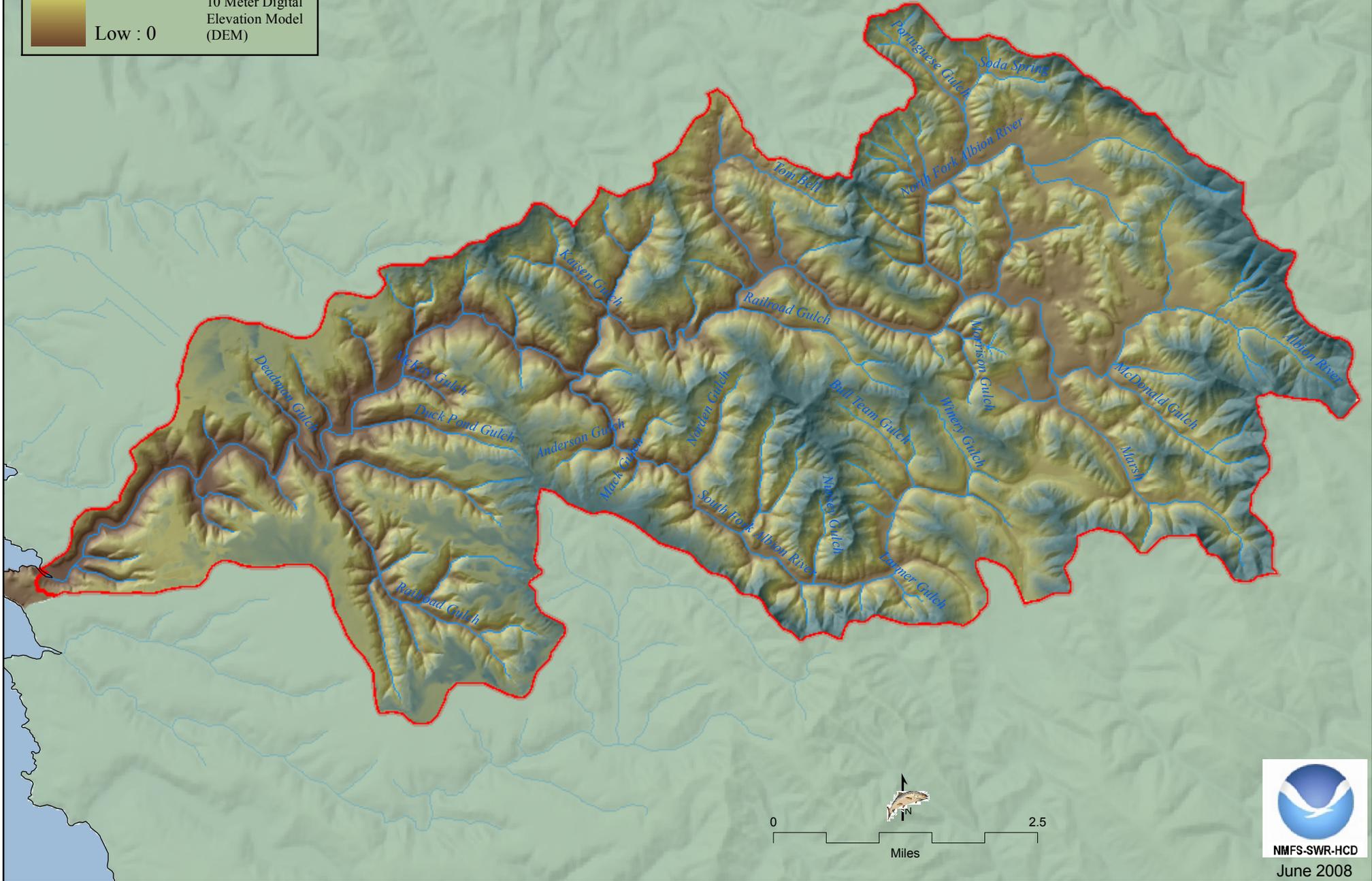
June 2008

# Albion River Watershed Elevation

## Albion Elevation (meters)



SWR-SCFSC,  
10 Meter Digital  
Elevation Model  
(DEM)



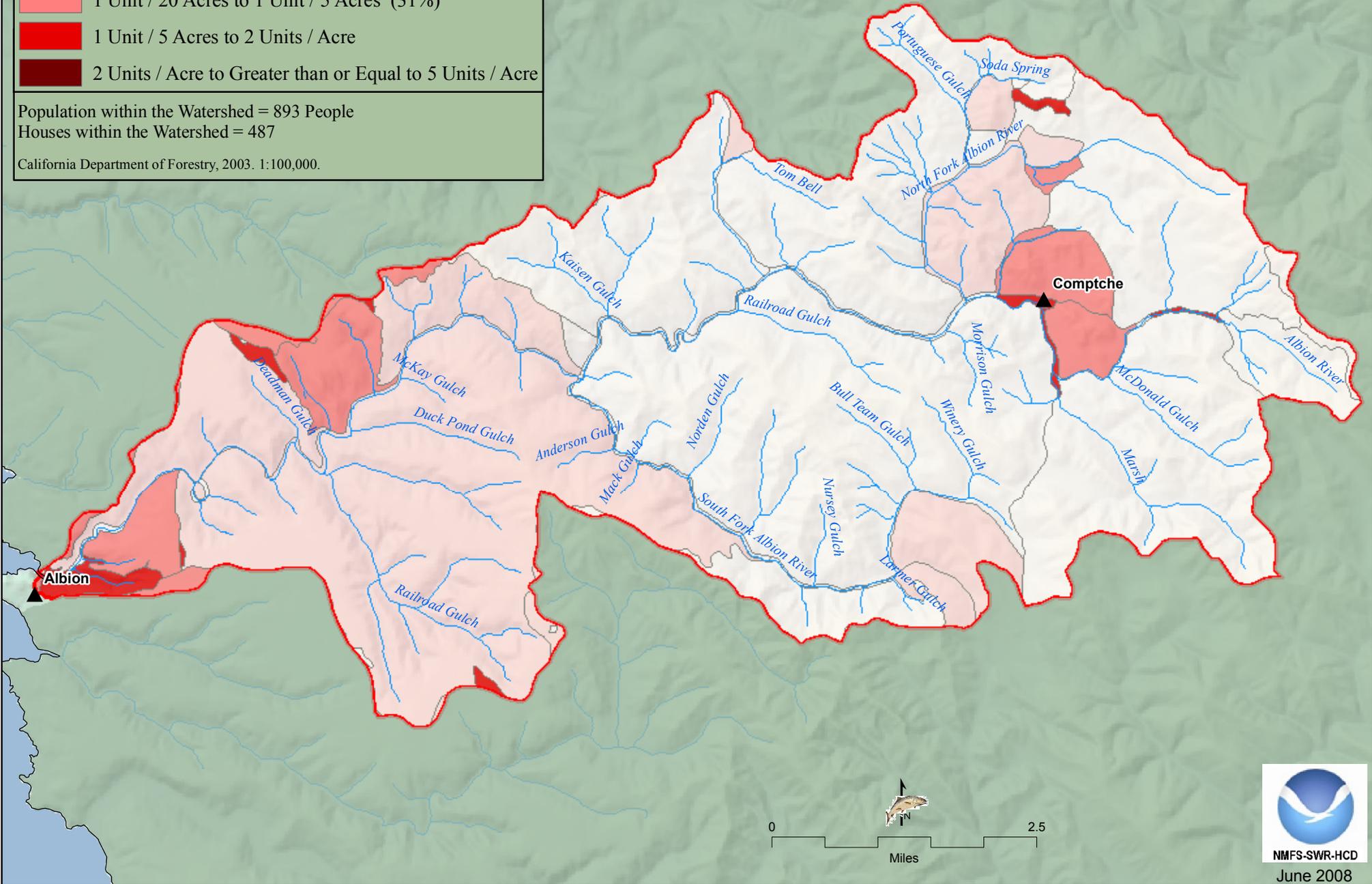
# Albion River Watershed Development and Population

## Housing Density

- 0 to Less than 1 Housing Unit / 160 Acres
- 1 Unit / 160 Acres to 1 Unit / 20 Acres (57%)
- 1 Unit / 20 Acres to 1 Unit / 5 Acres (31%)
- 1 Unit / 5 Acres to 2 Units / Acre
- 2 Units / Acre to Greater than or Equal to 5 Units / Acre

Population within the Watershed = 893 People  
Houses within the Watershed = 487

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





# Albion River Watershed Road Density

~ Roads

California Department of Forestry, 2001. 1:24,000.

~ 1:24,000 Streams

California Department of Forestry, 1998. 1:24,000.

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

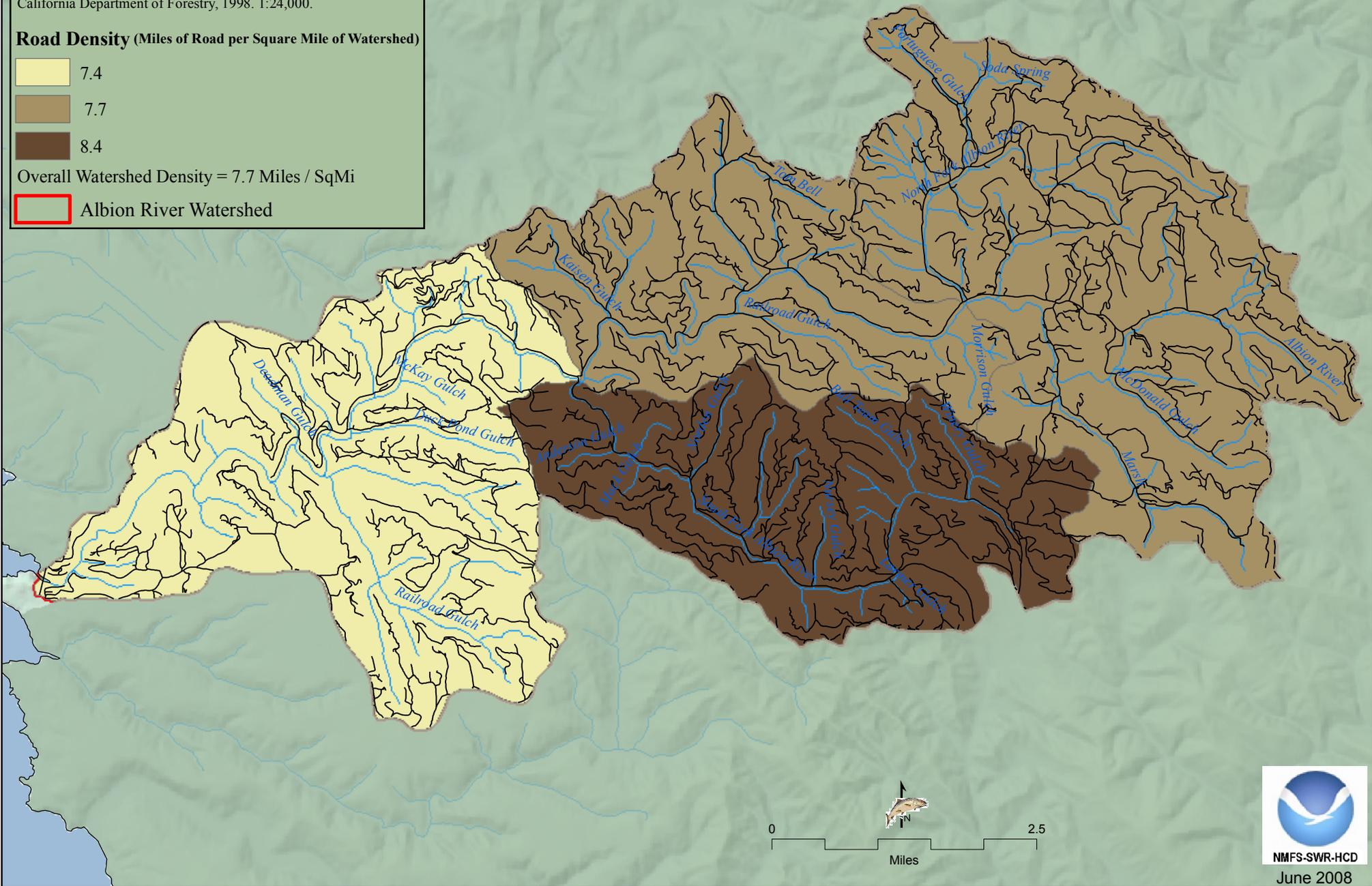
7.4

7.7

8.4

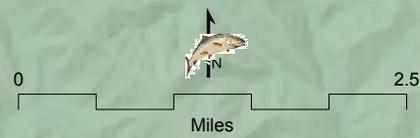
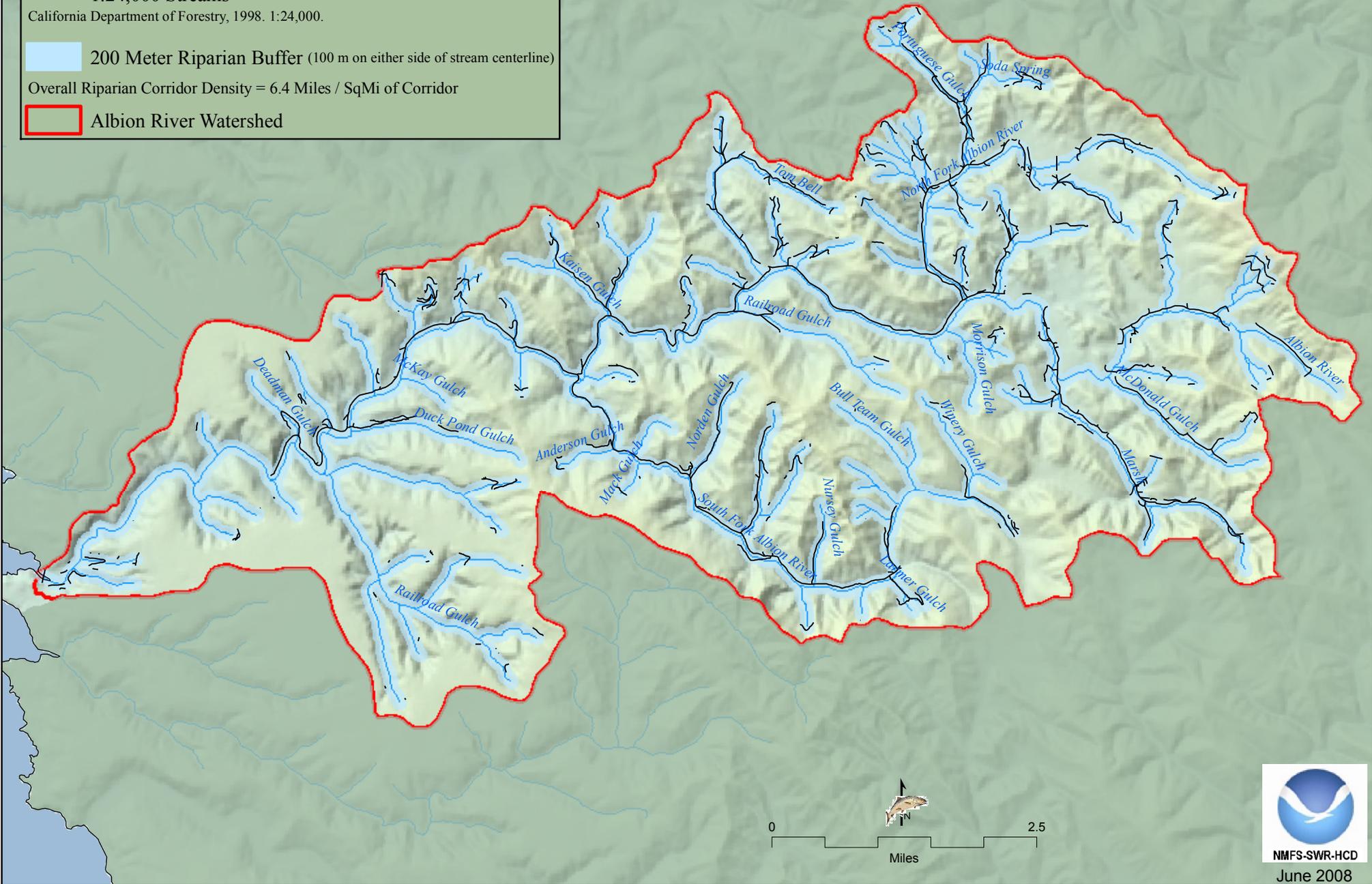
Overall Watershed Density = 7.7 Miles / SqMi

Albion River Watershed



# Albion River Watershed Road Density in the Riparian Corridor

-  Road Segments within the 200 meter Riparian Corridor  
California Department of Forestry, 2001. 1:24,000.
-  1:24,000 Streams  
California Department of Forestry, 1998. 1:24,000.
-  200 Meter Riparian Buffer (100 m on either side of stream centerline)
- Overall Riparian Corridor Density = 6.4 Miles / SqMi of Corridor
-  Albion River Watershed



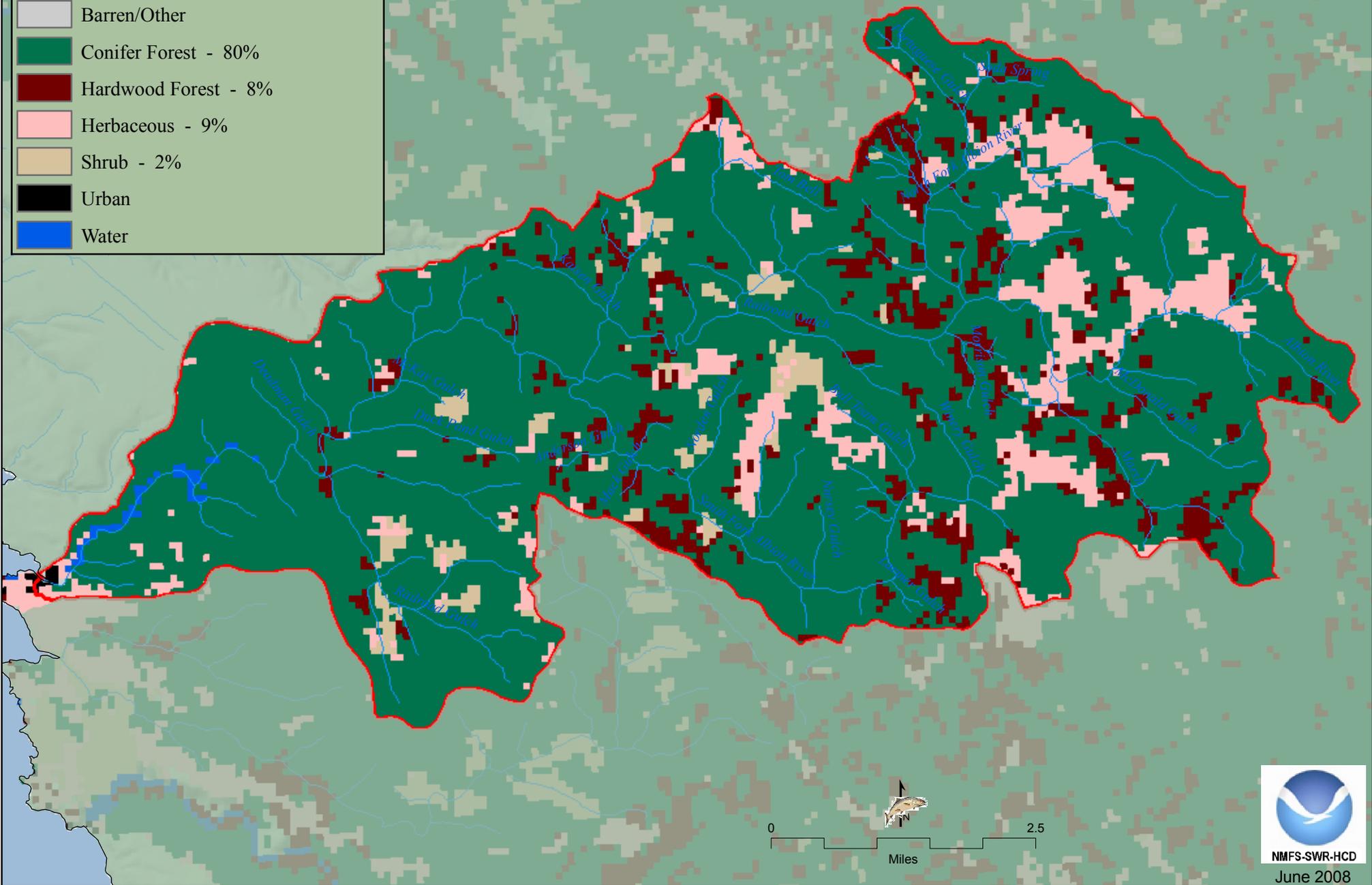
# Albion River Watershed Vegetation

1:24,000 Streams  
California Department of Forestry, 1998. 1:24,000.

## WHR13 Vegetation Classification

California Department of Forestry, 2002. 100 meter Grid

- Barren/Other
- Conifer Forest - 80%
- Hardwood Forest - 8%
- Herbaceous - 9%
- Shrub - 2%
- Urban
- Water

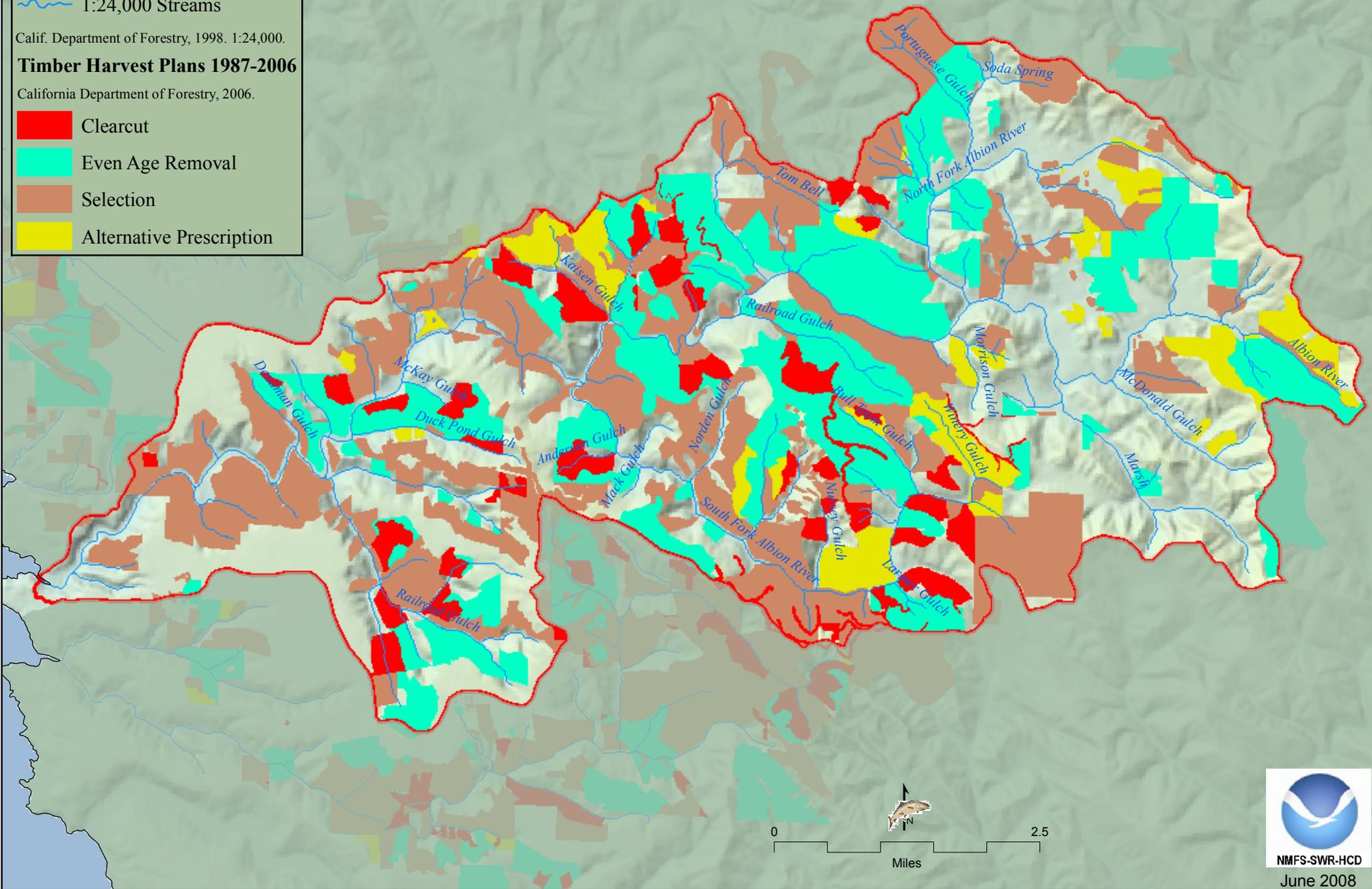


# Albion River Watershed Timber Harvesting 1987-2006

 1:24,000 Streams  
Calif. Department of Forestry, 1998. 1:24,000.

**Timber Harvest Plans 1987-2006**  
California Department of Forestry, 2006.

-  Clearcut
-  Even Age Removal
-  Selection
-  Alternative Prescription

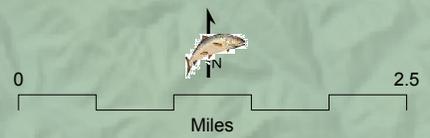
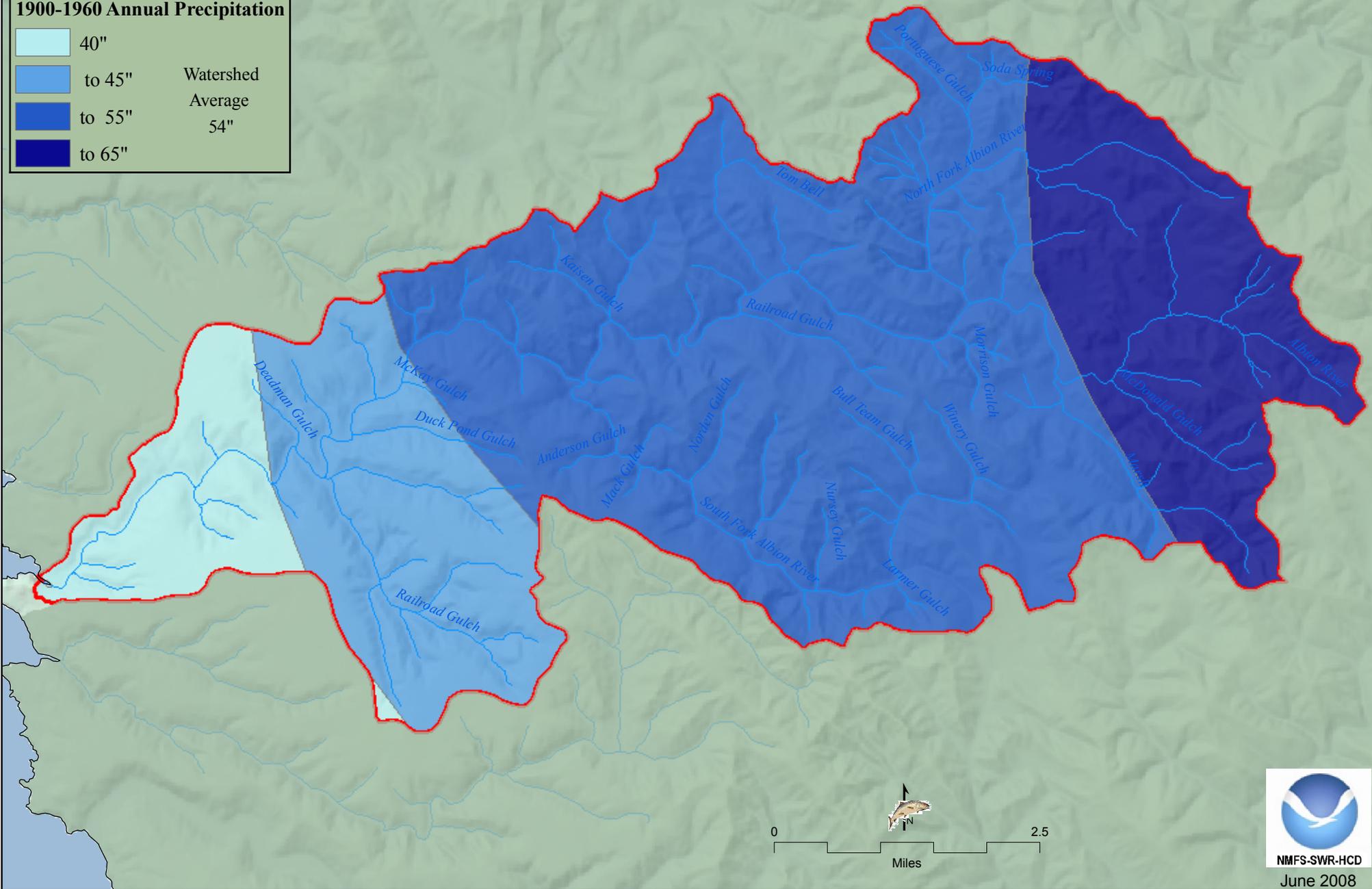


# Albion River Watershed Precipitation

 1:24,000 Streams  
California Department of Forestry,  
1998. 1:24,000.

**1900-1960 Annual Precipitation**

	40"	Watershed Average 54"
	to 45"	
	to 55"	
	to 65"	

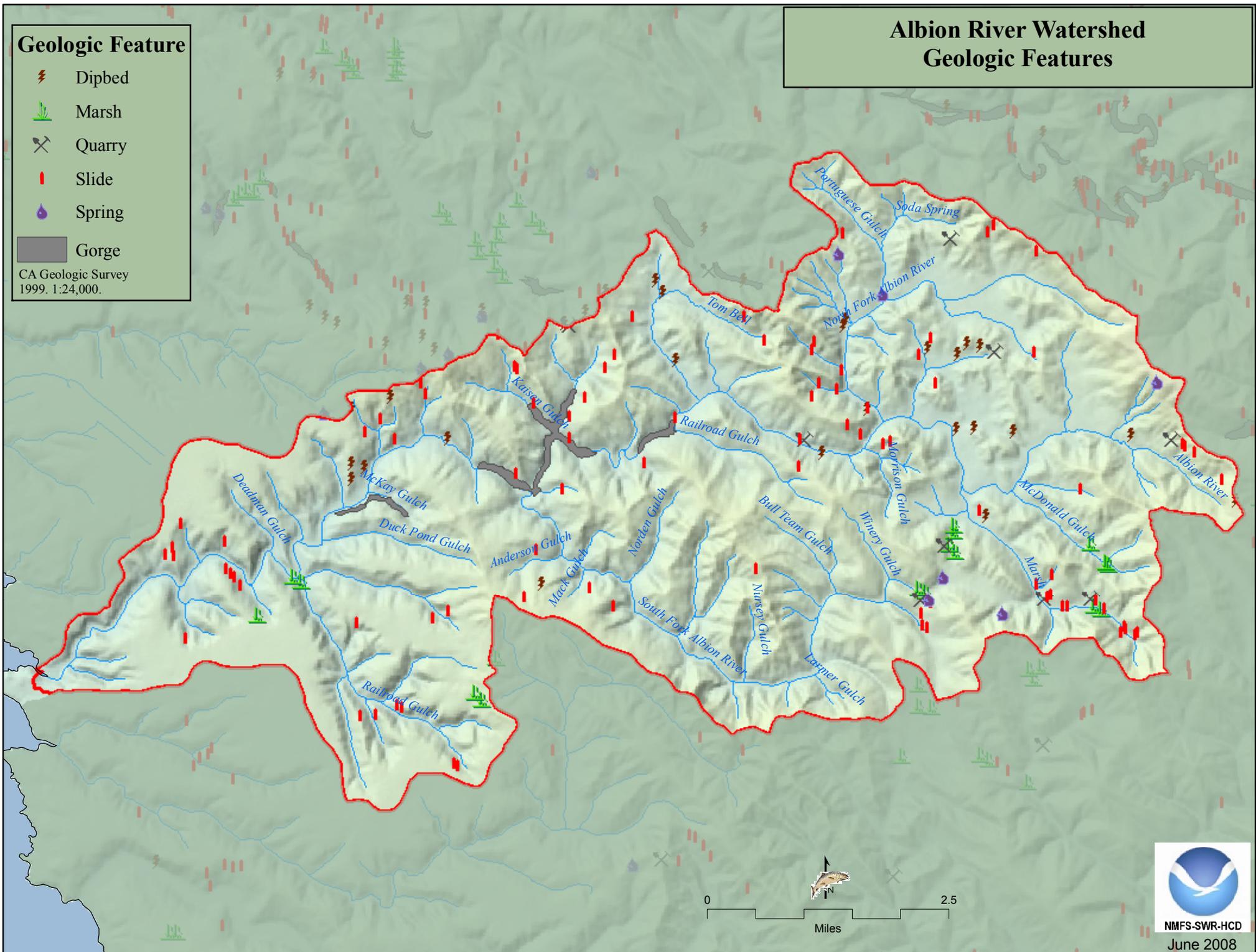


# Albion River Watershed Geologic Features

## Geologic Feature

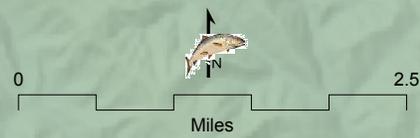
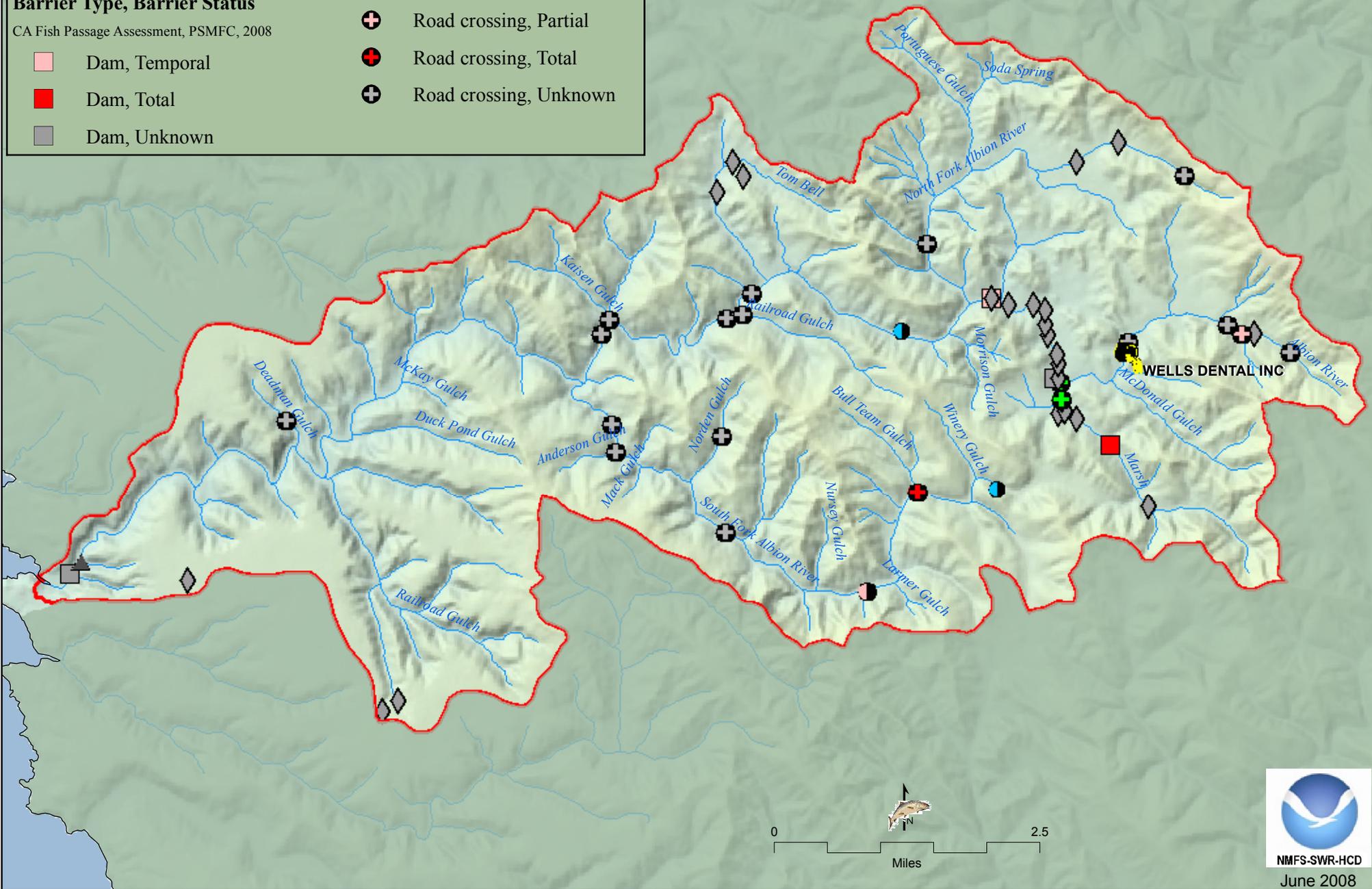
-  Dipbed
-  Marsh
-  Quarry
-  Slide
-  Spring
-  Gorge

CA Geologic Survey  
1999. 1:24,000.



# Albion River Watershed Barriers and Industrial Discharge

 Gage Station	 Diversion, Unknown
<small>BASINS, USEPA, 2001.</small>	 Fish passage facility, Partial
 Hazardous & Solid Waste Site	 Log jam, May not now exist
<small>BASINS, USEPA, 2001.</small>	 Road crossing, Not a barrier
<b>Barrier Type, Barrier Status</b>	 Road crossing, Partial
<small>CA Fish Passage Assessment, PSMFC, 2008</small>	 Road crossing, Total
 Dam, Temporal	 Road crossing, Unknown
 Dam, Total	
 Dam, Unknown	

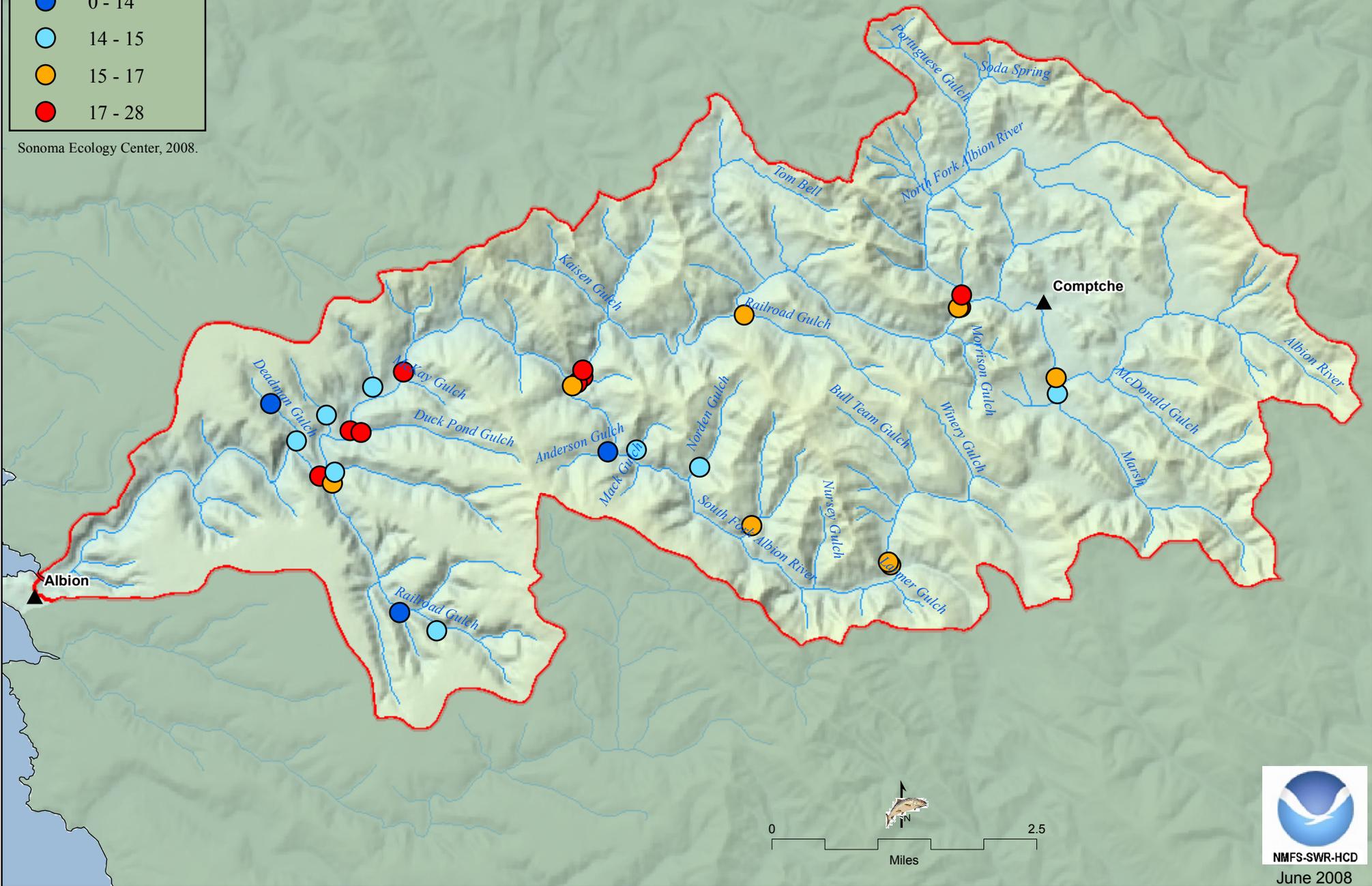


# Albion River Watershed In-stream Temperature

## Average MWMT (°C)

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

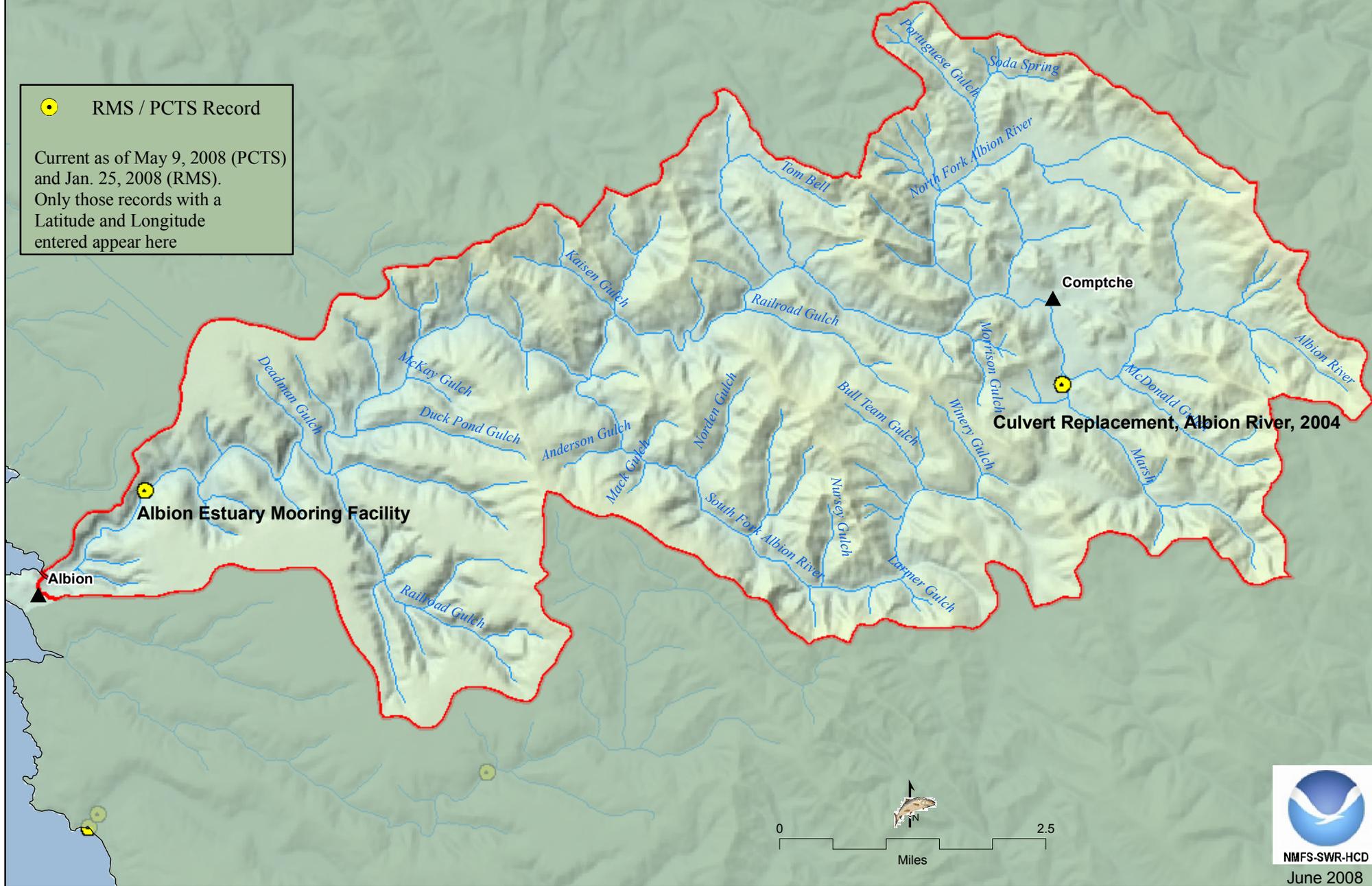
Sonoma Ecology Center, 2008.



# Albion River 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/>  
  
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**

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>

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>

### **Hydrology**

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

### **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)**

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**

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)  
USGS , EROS Data Center  
1999

### **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

### **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/>

### **Temperature**

MWMT\_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

### **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>