

Maps by Characteristics

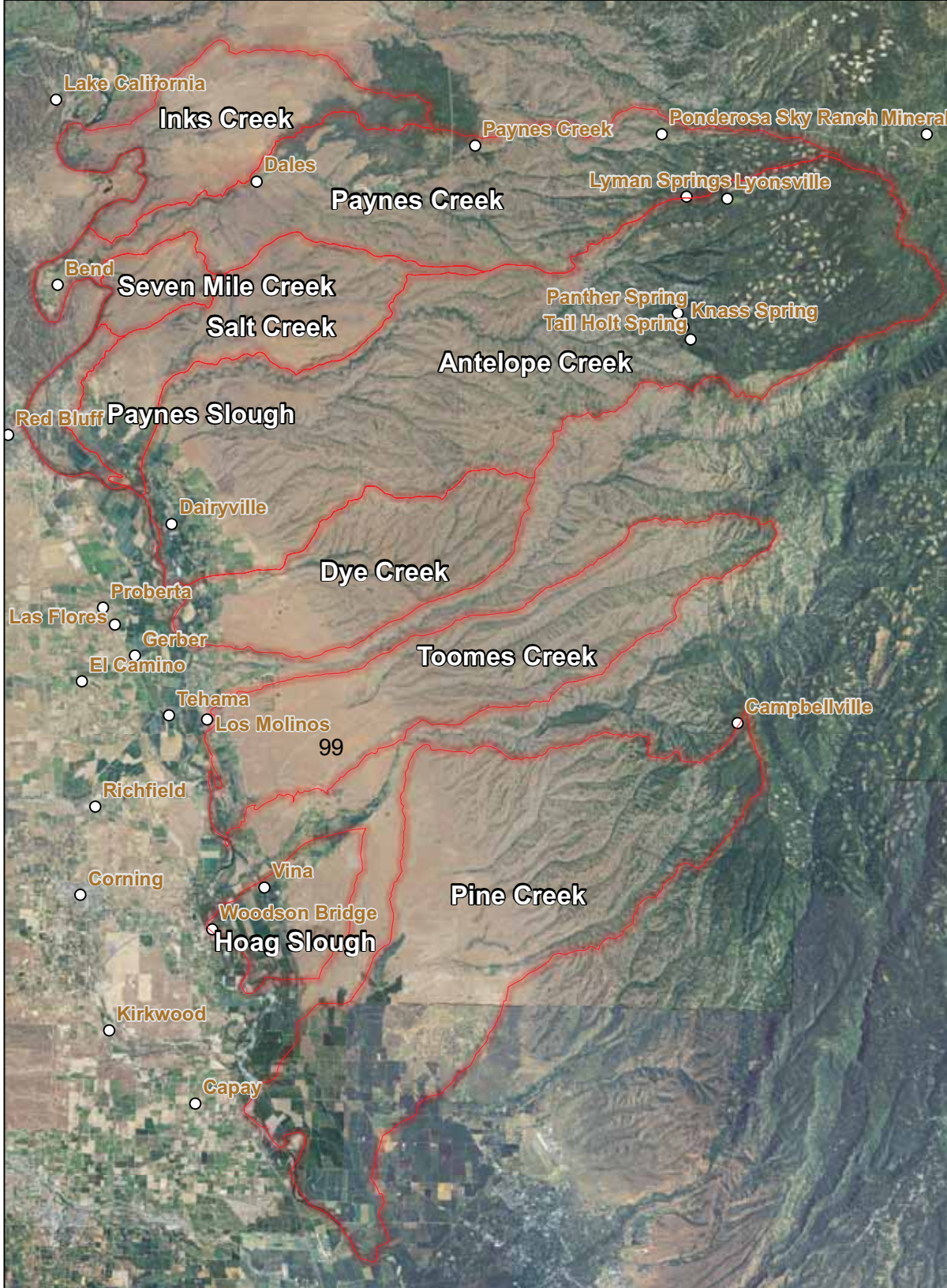
National Agriculture Imagery Program

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Inks Creek Watershed .....	135
Paynes Creek Watershed .....	136
Pine Creek and Hoag Slough Watersheds.....	137
Paynes Slough, Salt, and Creek Watersheds .....	138

# Tehama East Watershed Assessment

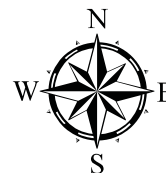
NAIP 2009

Tehama East Watersheds

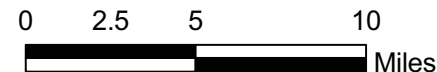


"The National Agriculture Imagery Program (NAIP) acquires imagery during the agricultural growing seasons in the continental U.S. A primary goal of the NAIP program is to enable availability of digital orthophotography within a year of acquisition."

Quoted from:  
<http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=landing>



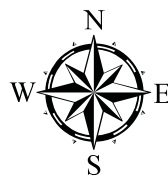
Tehama County Resource  
Conservation District  
(c) 2010



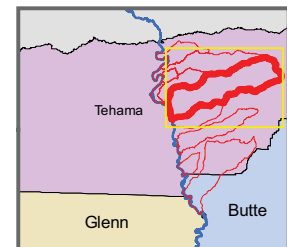


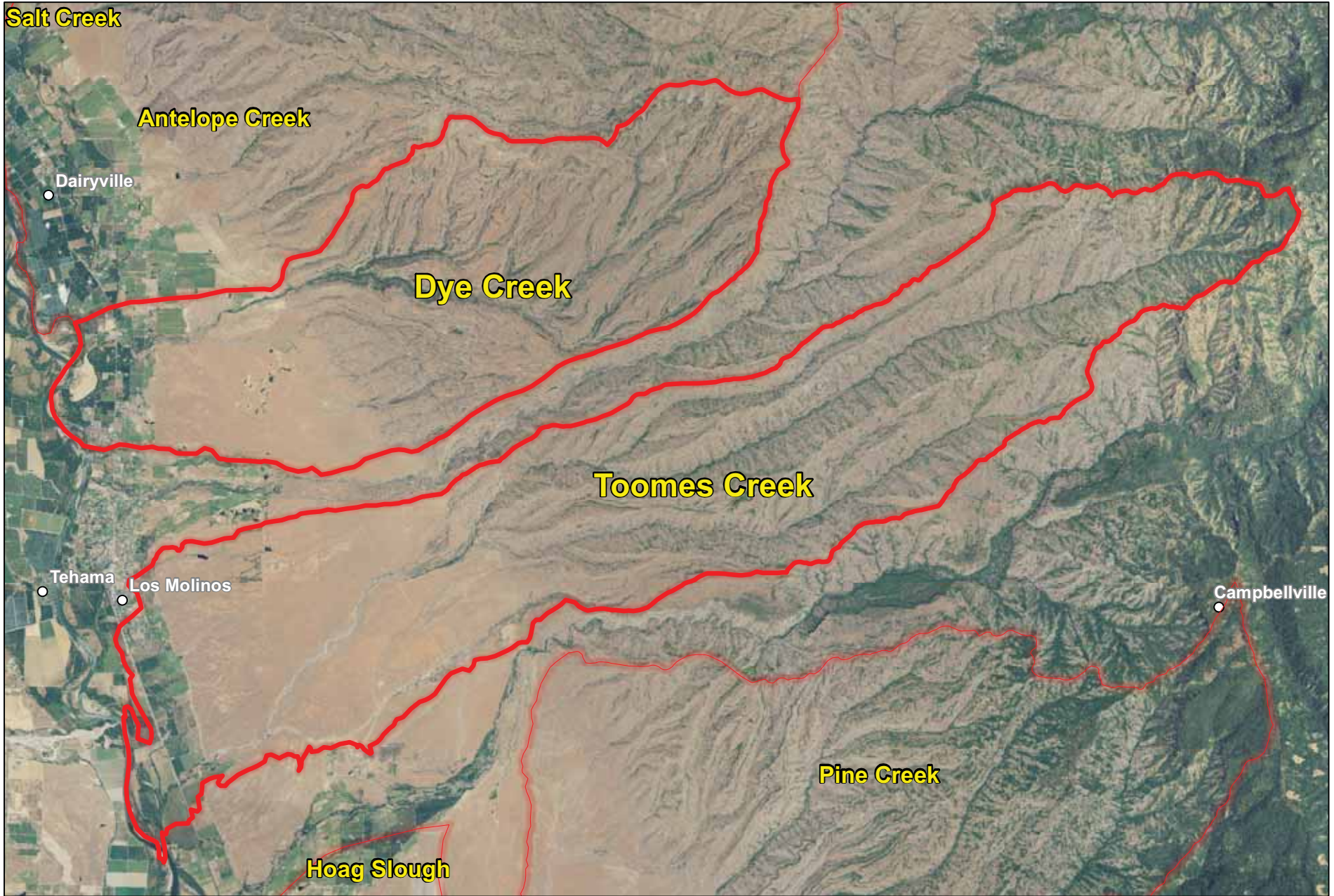
# Tehama East Watershed Assessment

NAIP 2009  
Antelope Creek



Tehama County Resource Conservation District  
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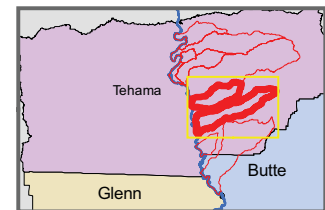


# Tehama East Watershed Assessment

NAIP 2009  
Dye and Toomes Creeks



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Conservation District  
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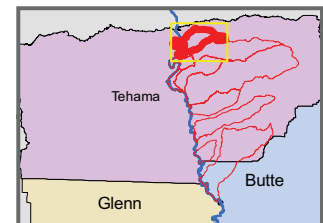
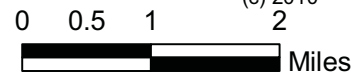


# Tehama East Watershed Assessment

NAIP 2009  
Inks Creek



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Conservation District  
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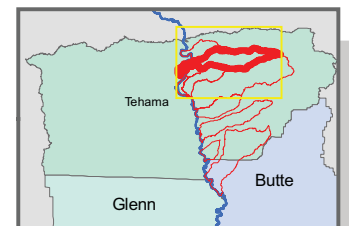
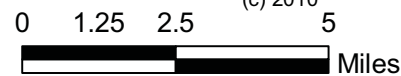


# Tehama East Watershed Assessment

NAIP 2009  
Paynes Creek



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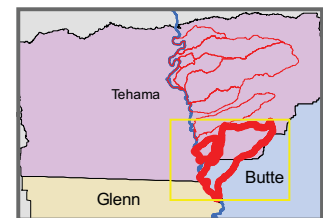
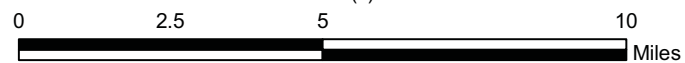
# Tehama East Watershed Assessment

NAIP 2009

Hoag Slough and Pine Creek



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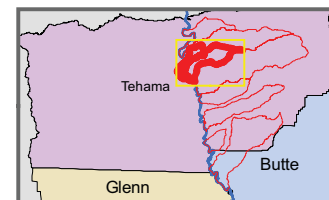
# Tehama East Watershed Assessment

NAIP 2009

Seven Mile Creek, Paynes Slough,  
and Salt Creek



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Conservation District  
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## Maps by Characteristics

### National Hydrography Dataset

Study Area .....	140
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# Tehama East Watershed Assessment

## Water Features National Hydrography Dataset USGS Tehama East Watersheds

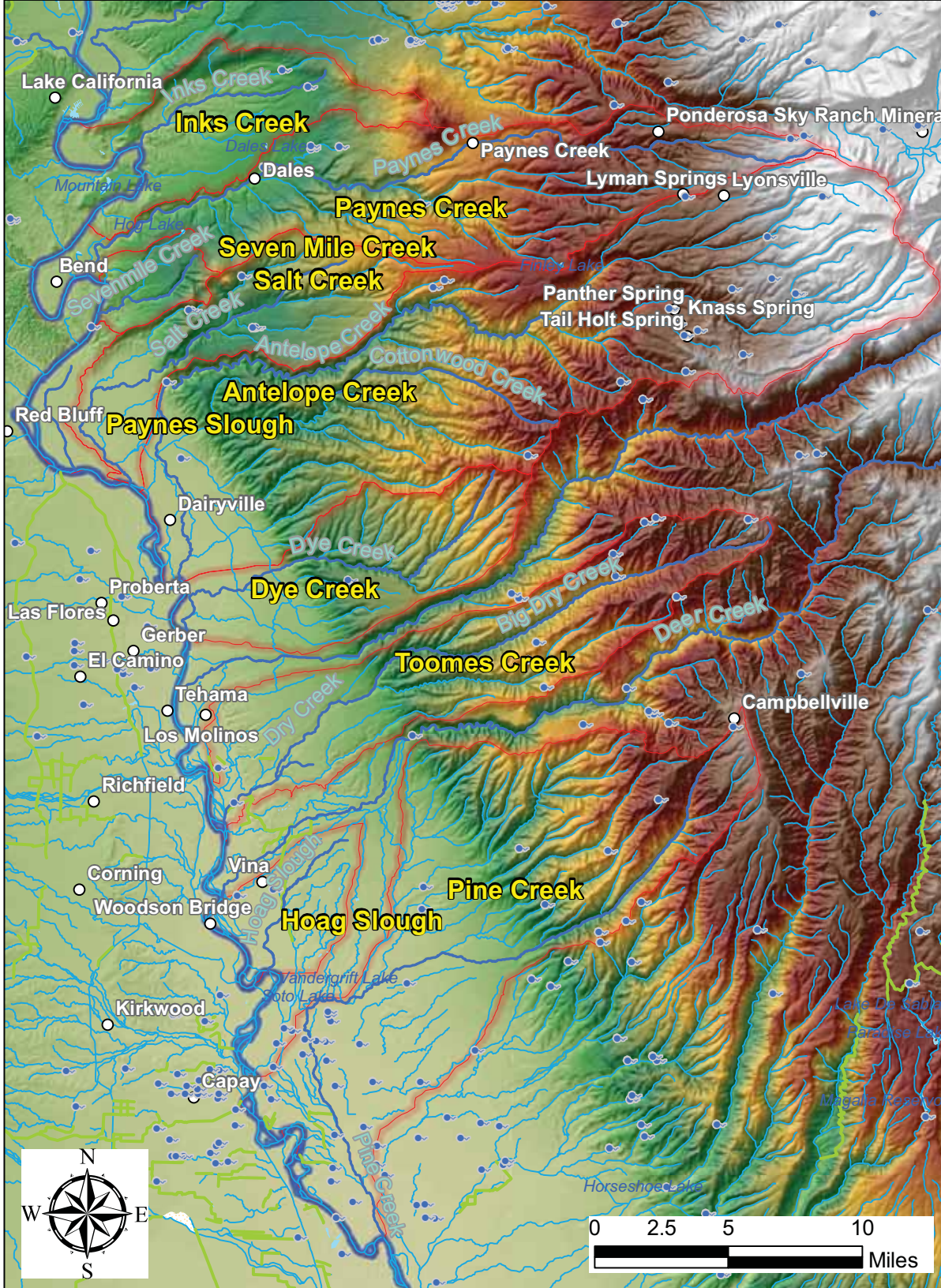
"The National Hydrography Dataset (NHD) is the surface water component of The National Map. The NHD is a comprehensive set of digital spatial data representing the surface water of the United States using common features such as lakes, ponds, streams, rivers, canals, and oceans. These data are designed to be used in general mapping and in the analysis of surface-water systems using geographic information systems (GIS). In mapping, the NHD is used with other data themes such as elevation, boundaries, and transportation to produce general reference maps. Customized maps can be made to meet specific needs of the user by emphasizing certain aspects of the data. A map emphasizing hydrography can be produced by displaying more of the content embedded in hydrography.

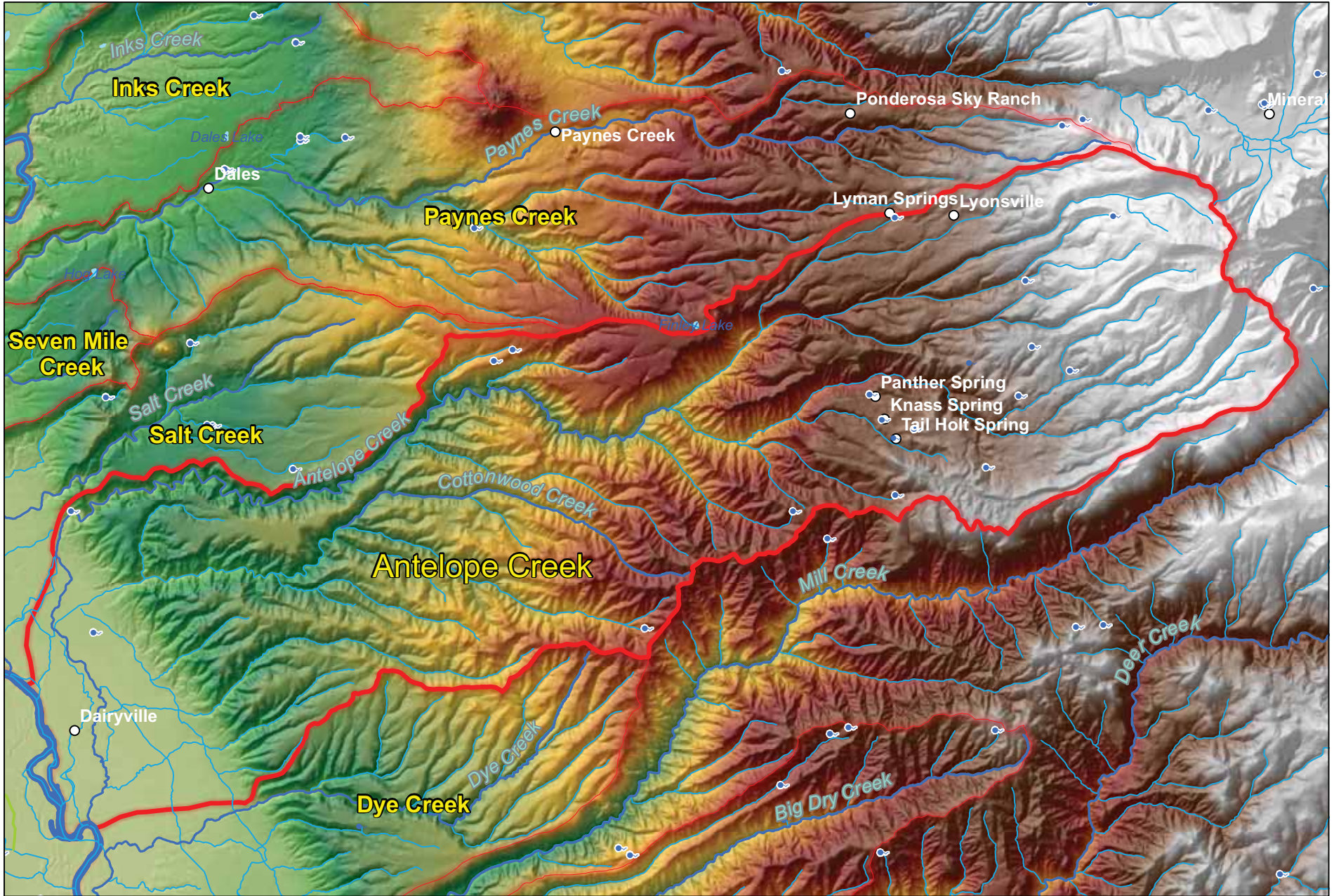
The NHD often is used by scientists, specifically in surface-water analysis using GIS technology. This takes advantage of a rich set of embedded attributes that can be processed by a computer system to generate specialized information. This information can then be portrayed in specialized maps to better understand the results. These analyses of hydrography are possible largely because the NHD contains a flow direction network that traces the water downstream or upstream. It also uses an addressing system to link specific information about the water such as water discharge, water quality, and fish population. Using the basic water features, flow network, linked information, and other characteristics, it is possible to study cause and affect relations, such as how a source of poor water quality upstream might affect a fish population downstream."

Quoted from:  
<http://nhd.usgs.gov/index.html>

- KEY**
-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary

<http://nhd.usgs.gov/data.html>










# Tehama East Watershed Assessment

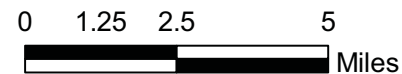
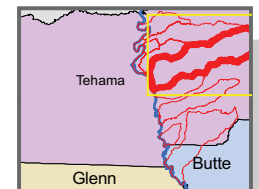
Water Features  
National Hydrography Dataset - USGS  
Antelope Creek

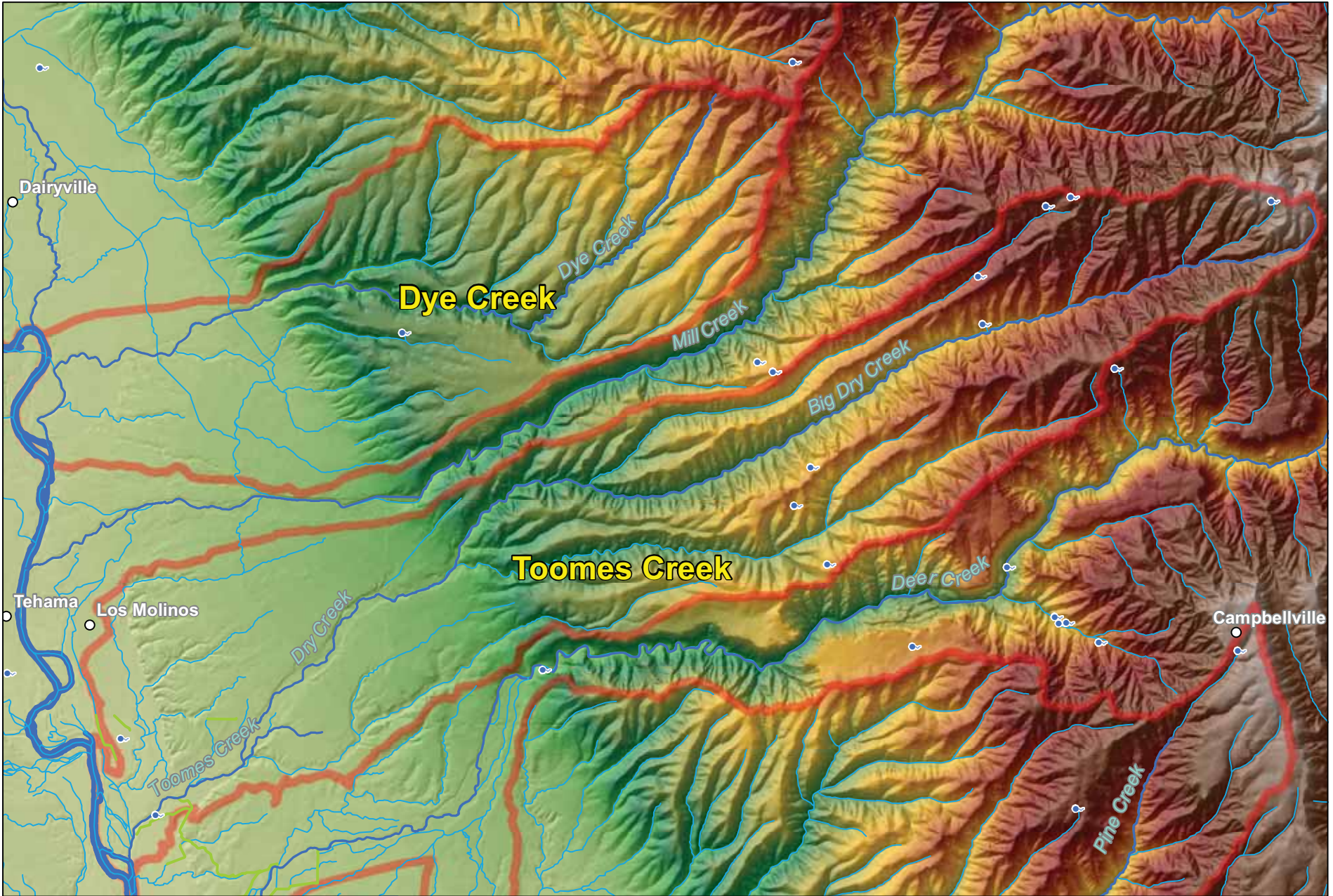
## KEY

-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary
- <http://nhd.usgs.gov/data.html>



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# Tehama East Watershed Assessment

## Water Features

National Hydrography Dataset - USGS  
Dye Creek and Toomes Creek

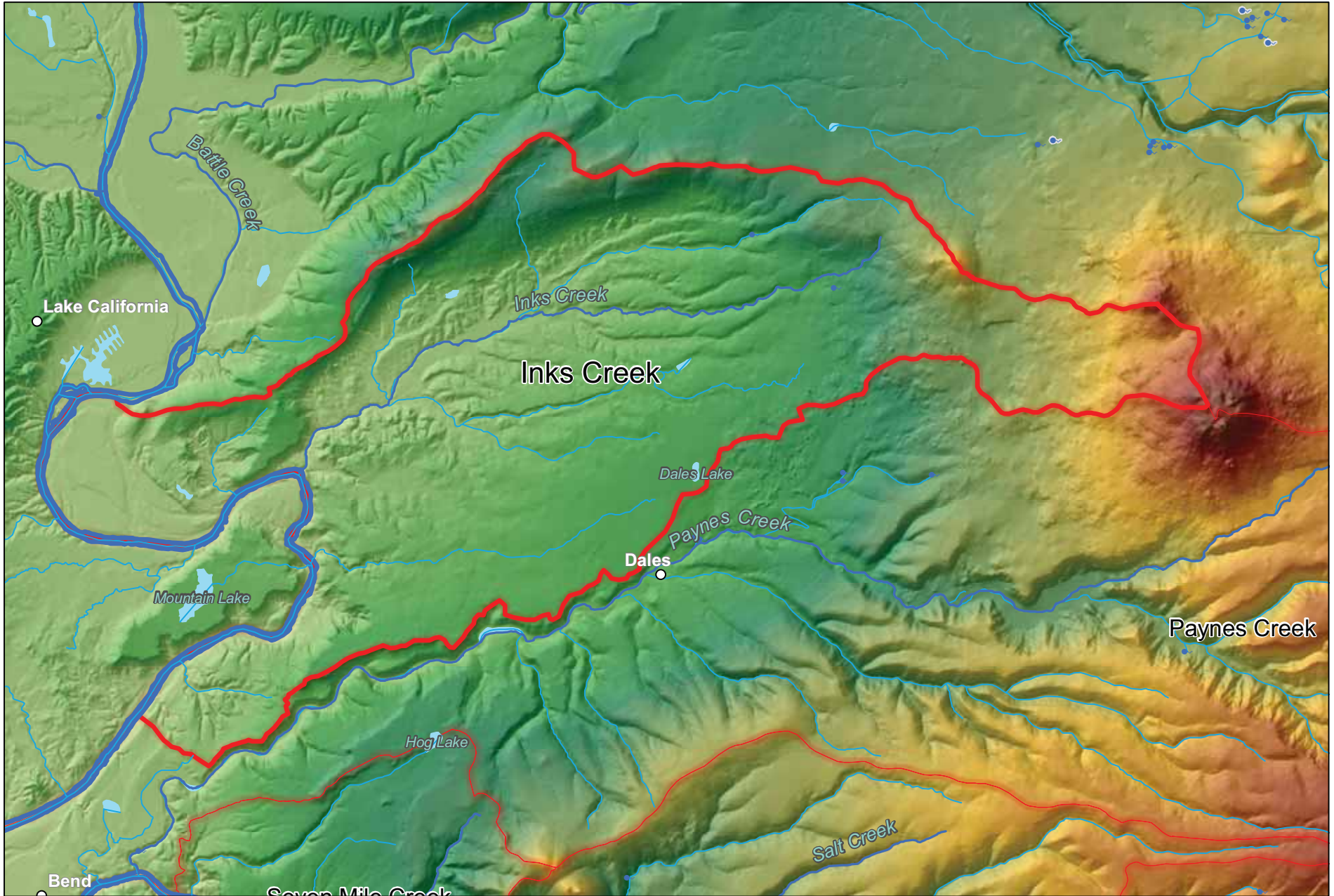
### KEY

-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary
- <http://nhd.usgs.gov/data.html>



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# Tehama East Watershed Assessment

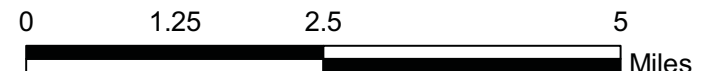
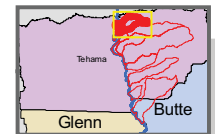
Water Features  
National Hydrography Dataset - USGS  
Inks Creek

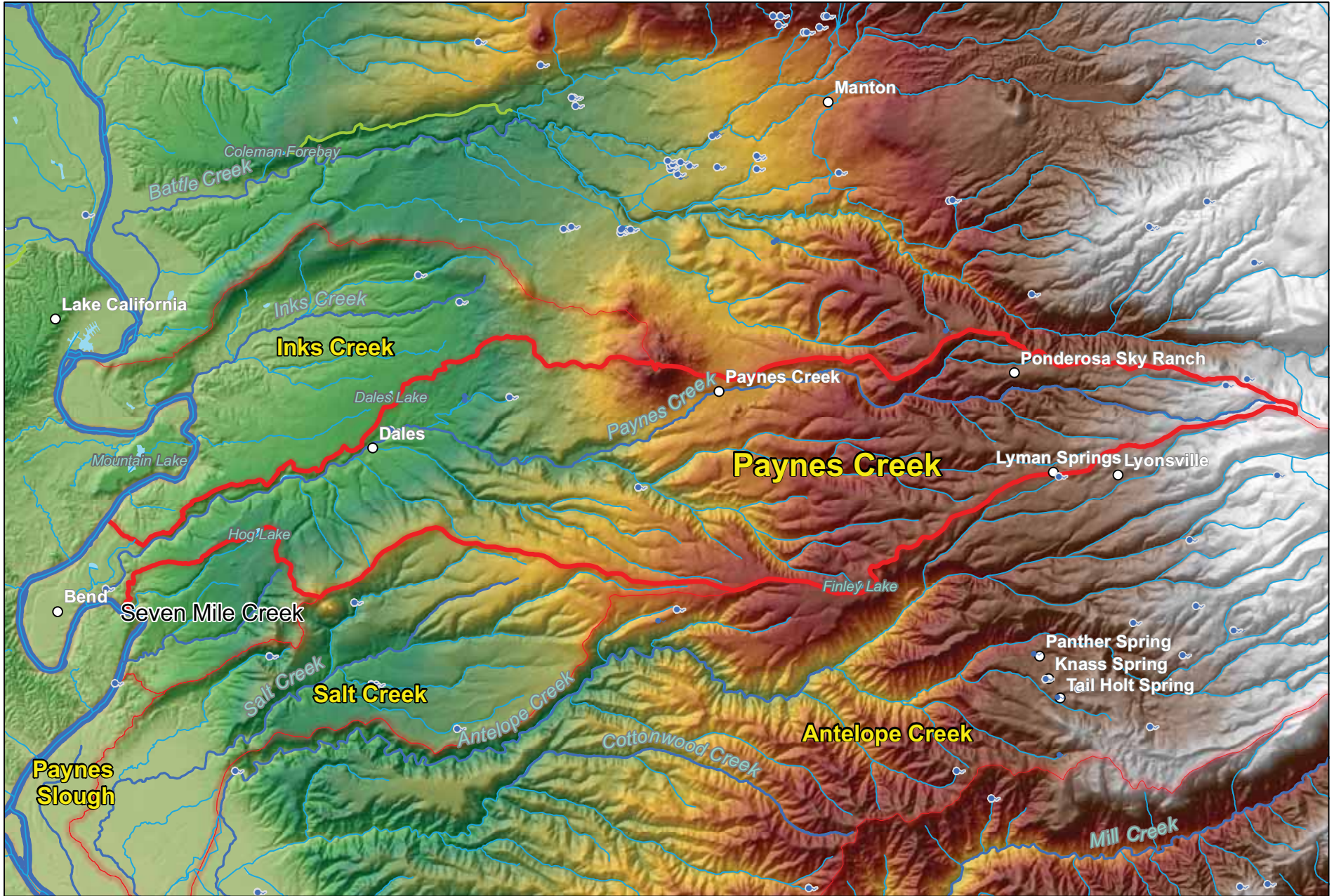
## KEY

-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary
- <http://nhd.usgs.gov/data.html>



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# Tehama East Watershed Assessment

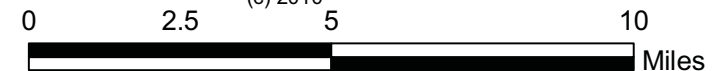
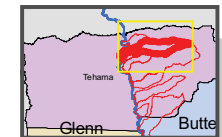
Water Features  
National Hydrography Dataset - USGS  
Paynes Creek

## KEY

-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary
- <http://nhd.usgs.gov/data.html>

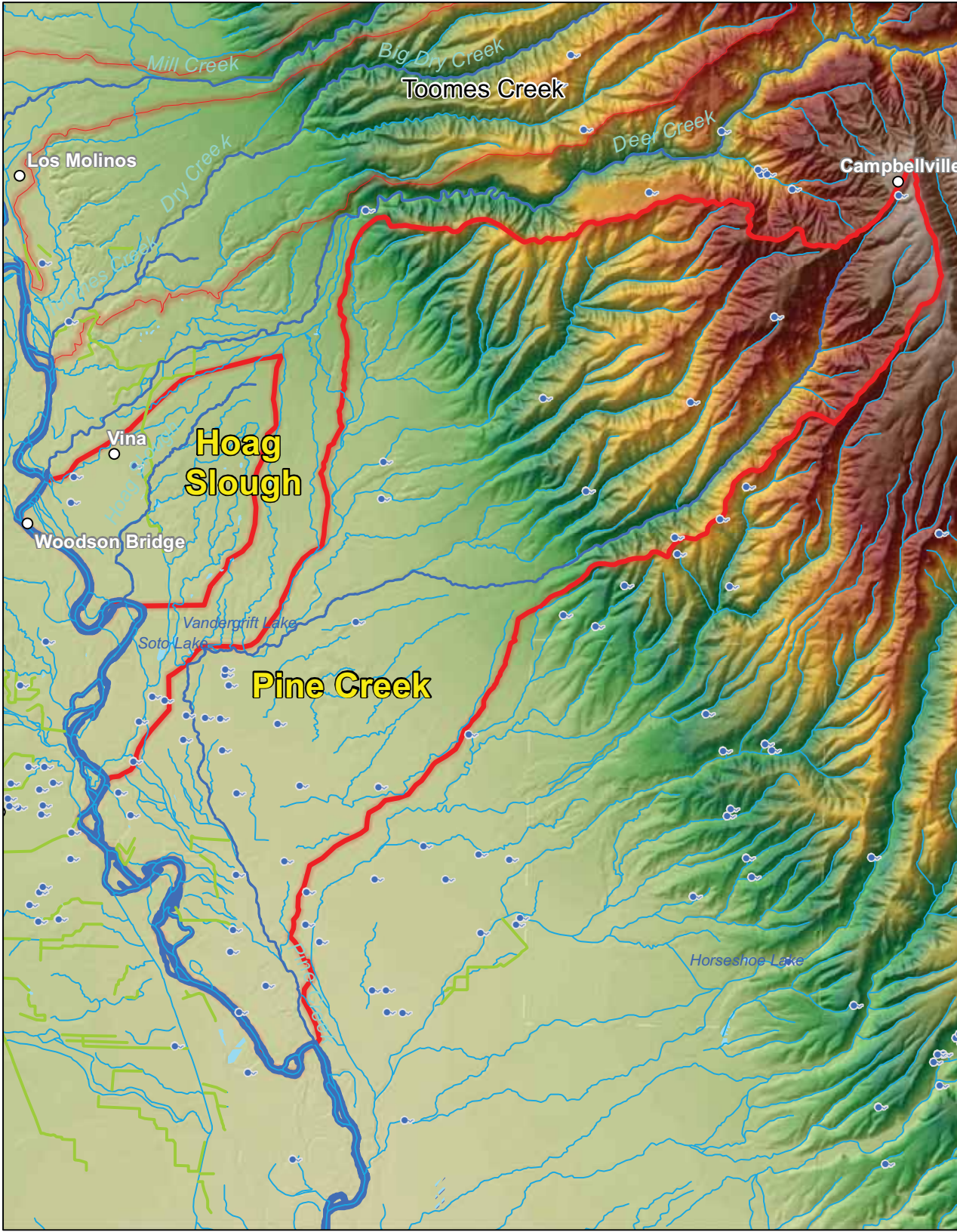


Tehama County Resource  
Conservation District  
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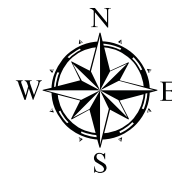
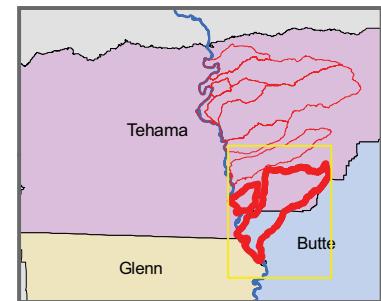
# Tehama East Watershed Assessment

Water Features  
National Hydrography Dataset  
USGS  
Hoag Slough and Pine Creek

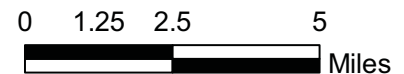


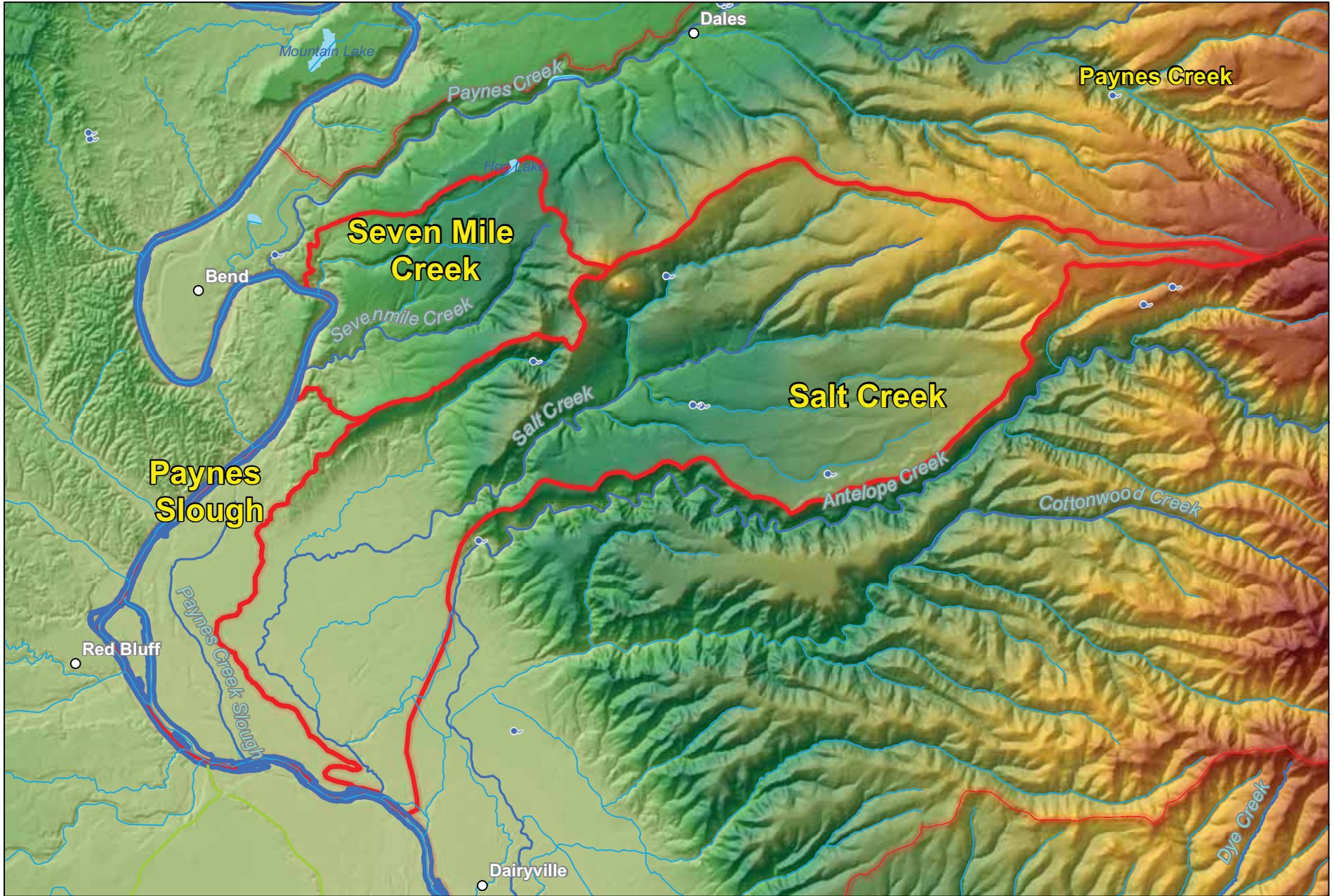
## KEY

-  Springs
-  Canal/Ditch
-  Streams/Rivers
-  Lake or Pond  
<http://nhd.usgs.gov/data.html>
-  Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

Water Features

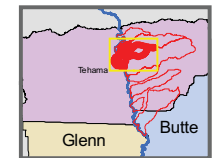
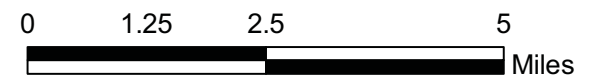
National Hydrography Dataset - USGS  
 Seven Mile Creek, Paynes Slough,  
 and Salt Creek

## KEY

-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary
- <http://nhd.usgs.gov/data.html>



Tehama County Resource  
 Conservation District  
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## Maps by Characteristics

### National Wetland Inventory

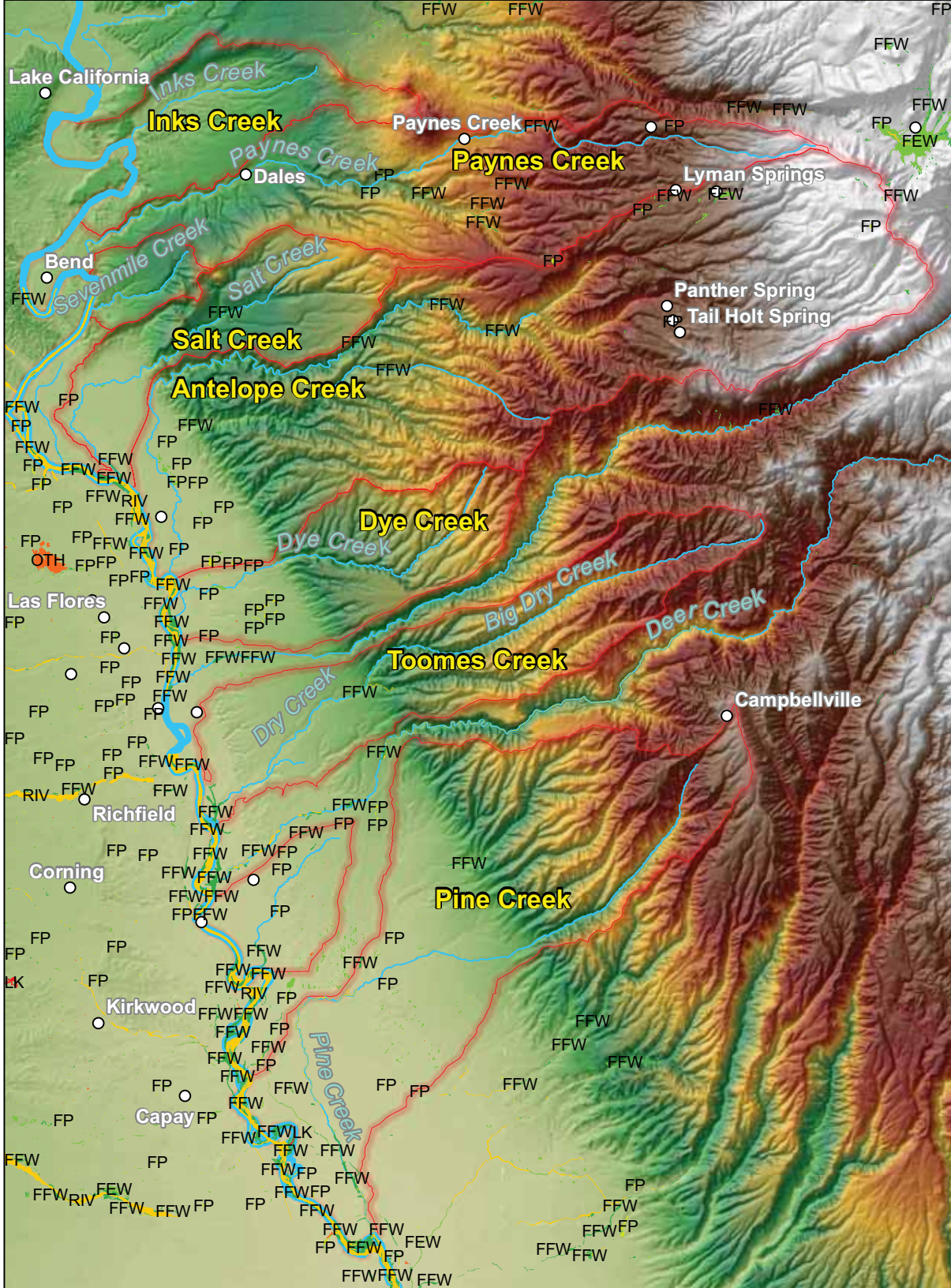
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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Tehama East Watersheds








"Wetlands provide a multitude of ecological, economic and social benefits. They provide habitat for fish, wildlife and a variety of plants. Wetlands are nurseries for many saltwater and freshwater fishes and shellfish of commercial and recreational importance. Wetlands are also important landscape features because they hold and slowly release flood water and snow melt, recharge groundwater, act as filters to cleanse water of impurities, recycle nutrients, and provide recreation and wildlife viewing opportunities for millions of people."

Quoted from:  
<http://www.fws.gov/wetlands/>



## KEY

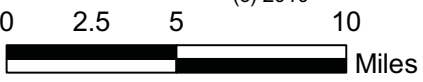
### Wetland Type

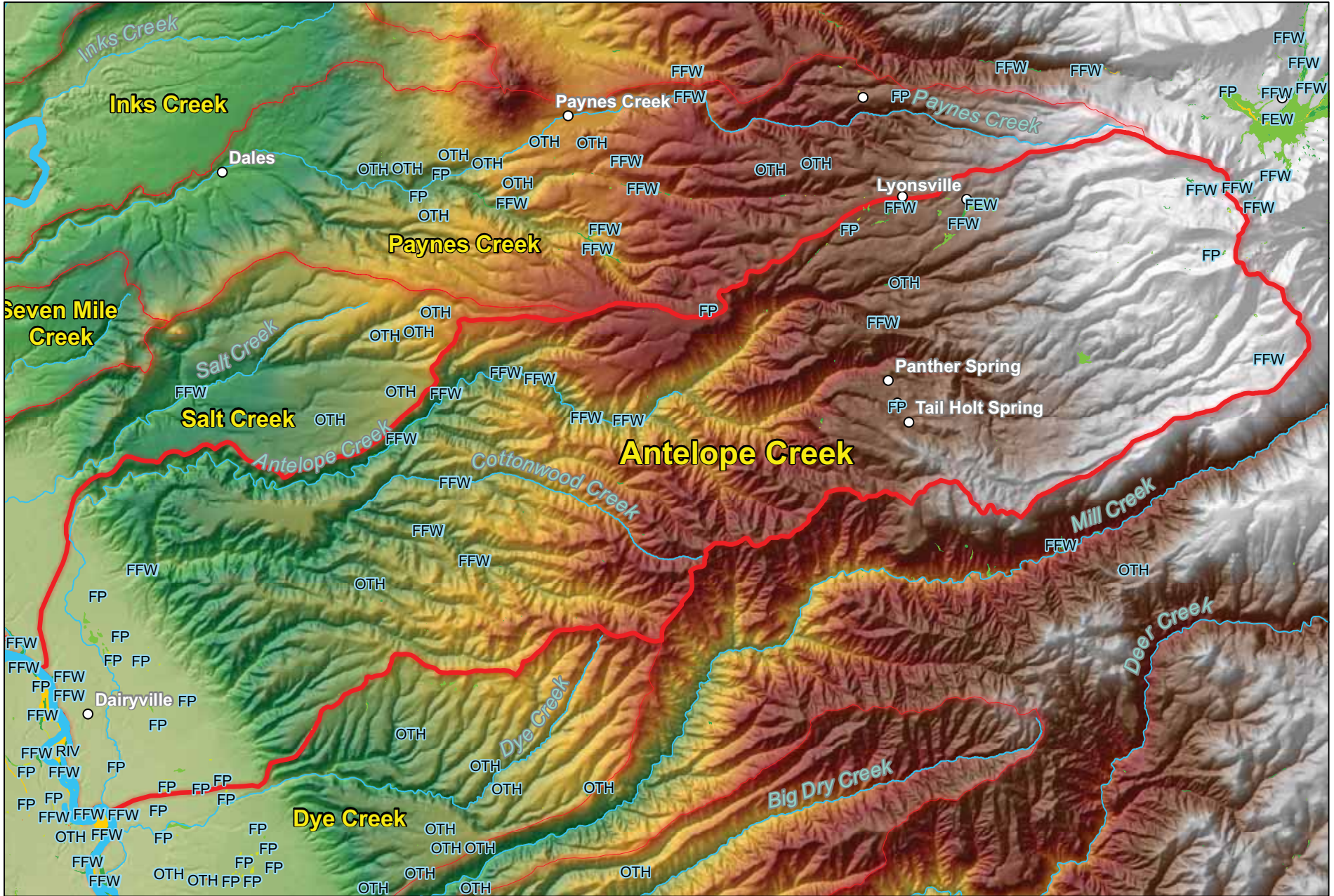
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Other
-  Riverine
-  Watershed Boundary

<http://www.fws.gov/wetlands/Data/DataDownload.html>



Tehama County Resource  
 Conservation District  
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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Antelope Creek

### KEY

#### Wetland Type

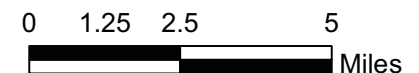
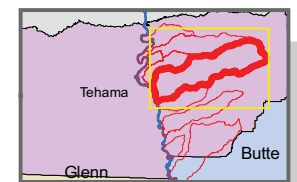
-  FFW Freshwater Emergent Wetland
-  FFW Freshwater Forested/Shrub Wetland
-  FP Freshwater Pond
-  LK Lake
-  OTH Other
-  RIV Riverine

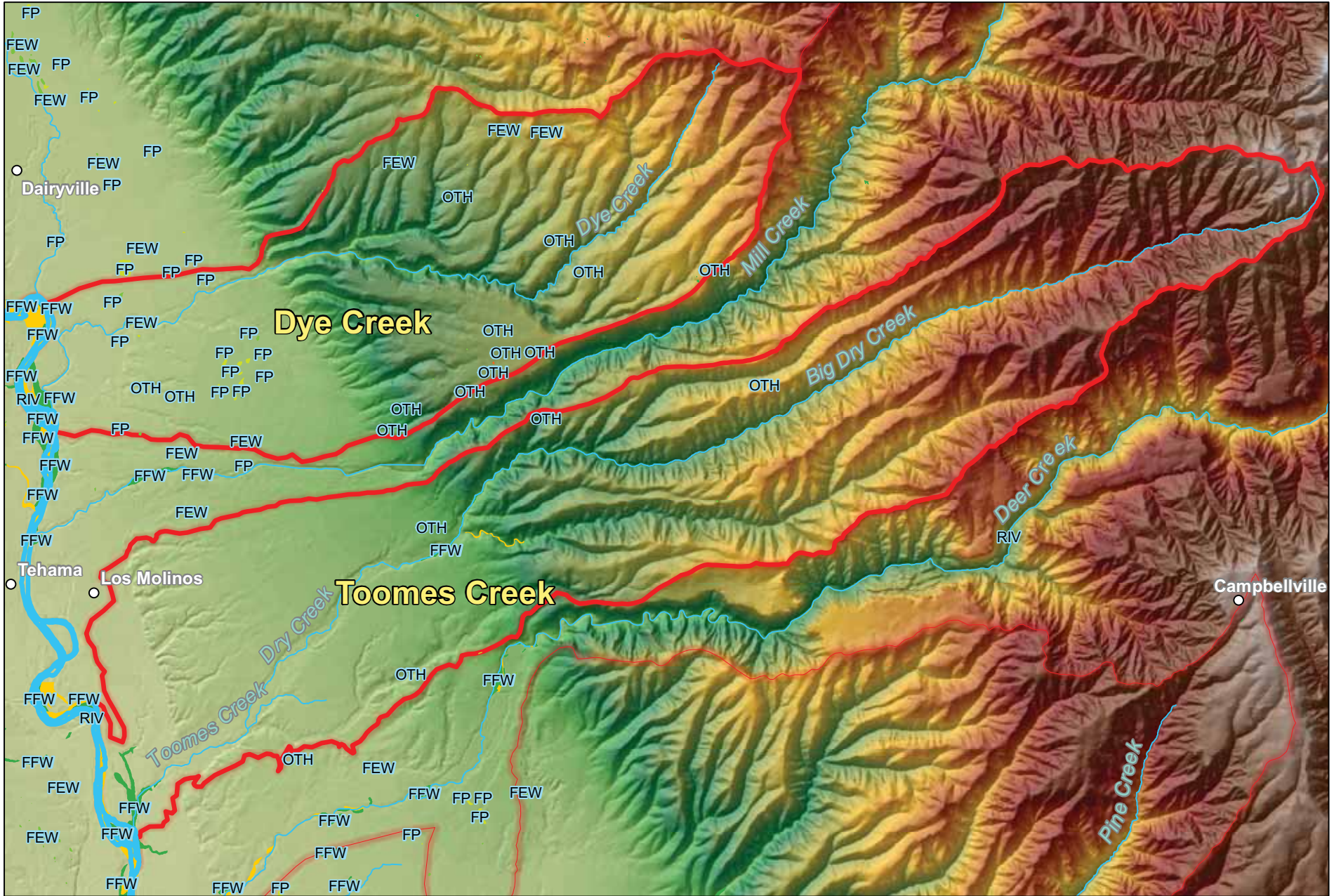
<http://www.fws.gov/wetlands/Data/DataDownload.html>

 Watershed Boundary



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# Tehama East Watershed Assessment

National Wetland Inventory  
US Fish & Wildlife Service  
Dye Creek and Toomes Creek

## KEY

### Wetland Type

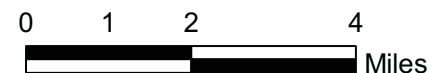
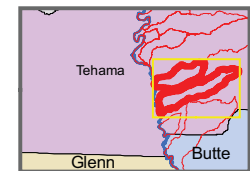
- FEW Freshwater Emergent Wetland
- FFW Freshwater Forested/Shrub Wetland
- FP Freshwater Pond
- LK Lake
- OTH Other
- RIV Riverine

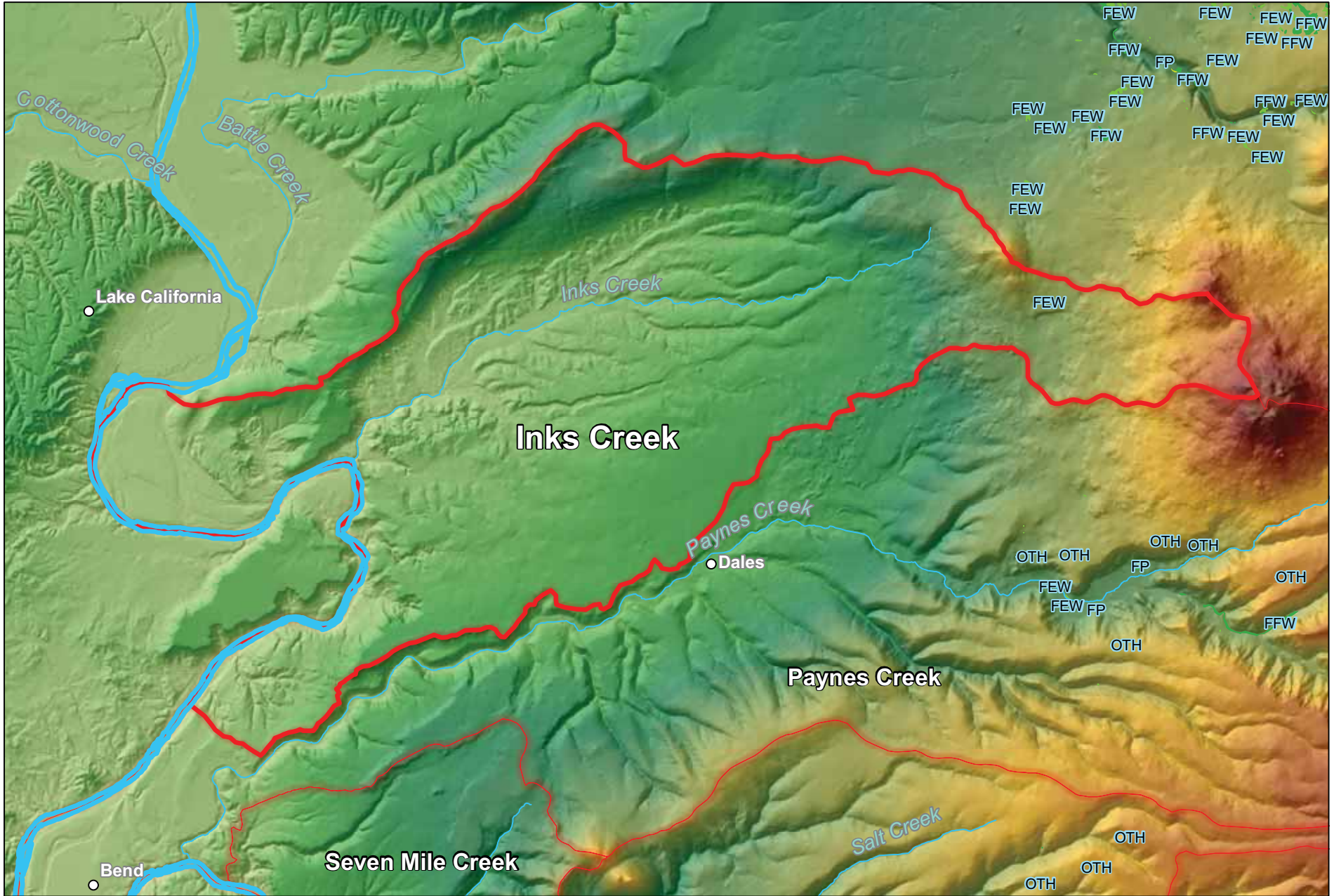
<http://www.fws.gov/wetlands/Data/DataDownload.html>

Watershed Boundary



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Conservation District  
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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Inks Creek

## KEY

### Wetland Type

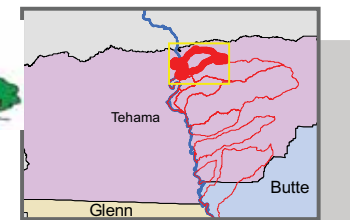
- FEW Freshwater Emergent Wetland
- FFW Freshwater Forested/Shrub Wetland
- FP Freshwater Pond
- LK Lake
- OTH Other
- RIV Riverine

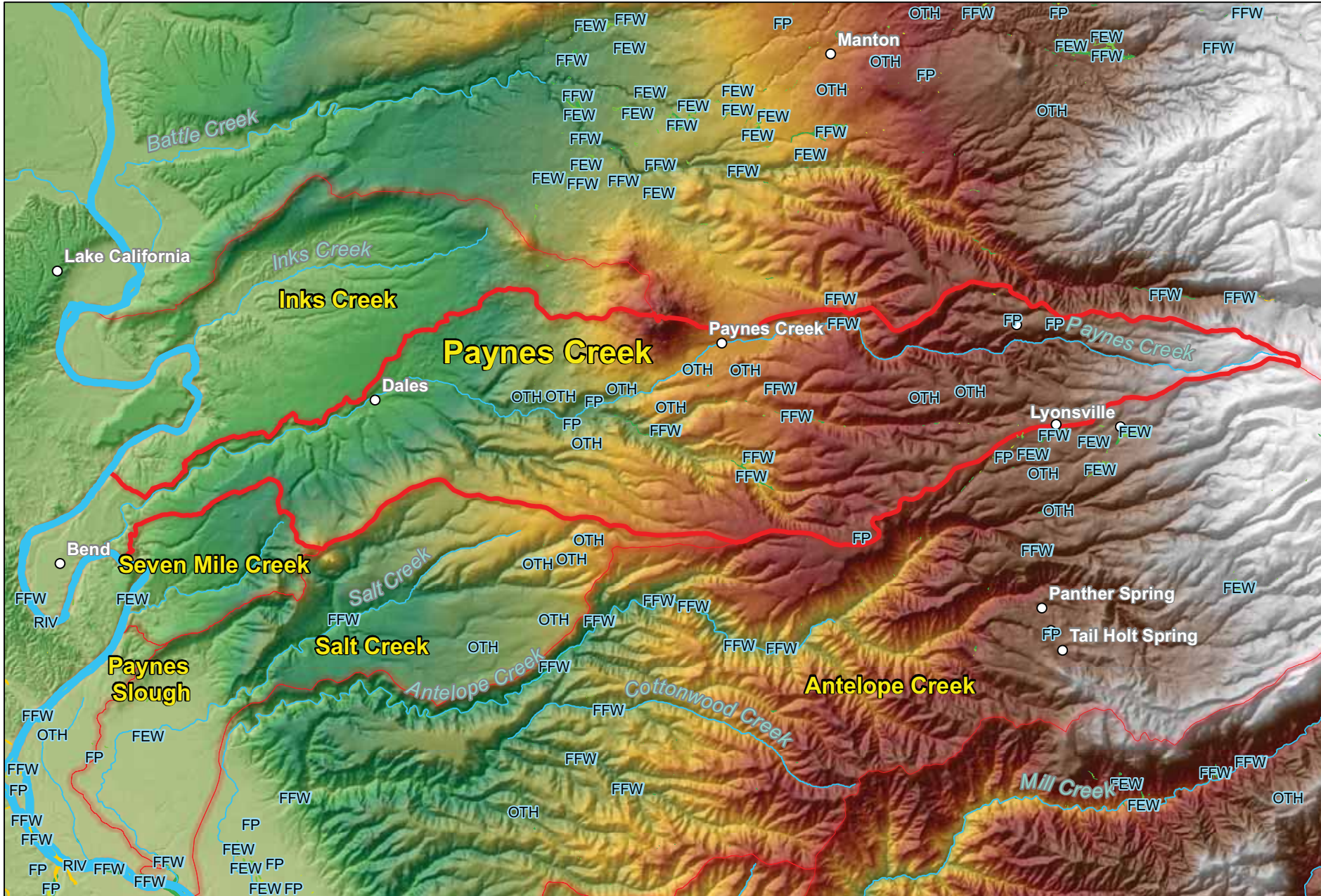
<http://www.fws.gov/wetlands/Data/DataDownload.html>

Watershed Boundary



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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Paynes Creek

## KEY

### Wetland Type

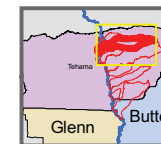
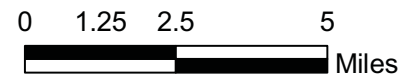
- FEW Freshwater Emergent Wetland
- FFW Freshwater Forested/Shrub Wetland
- FP Freshwater Pond
- LK Lake
- OTH Other
- RIV Riverine

<http://www.fws.gov/wetlands/Data/DataDownload.html>

Watershed Boundary

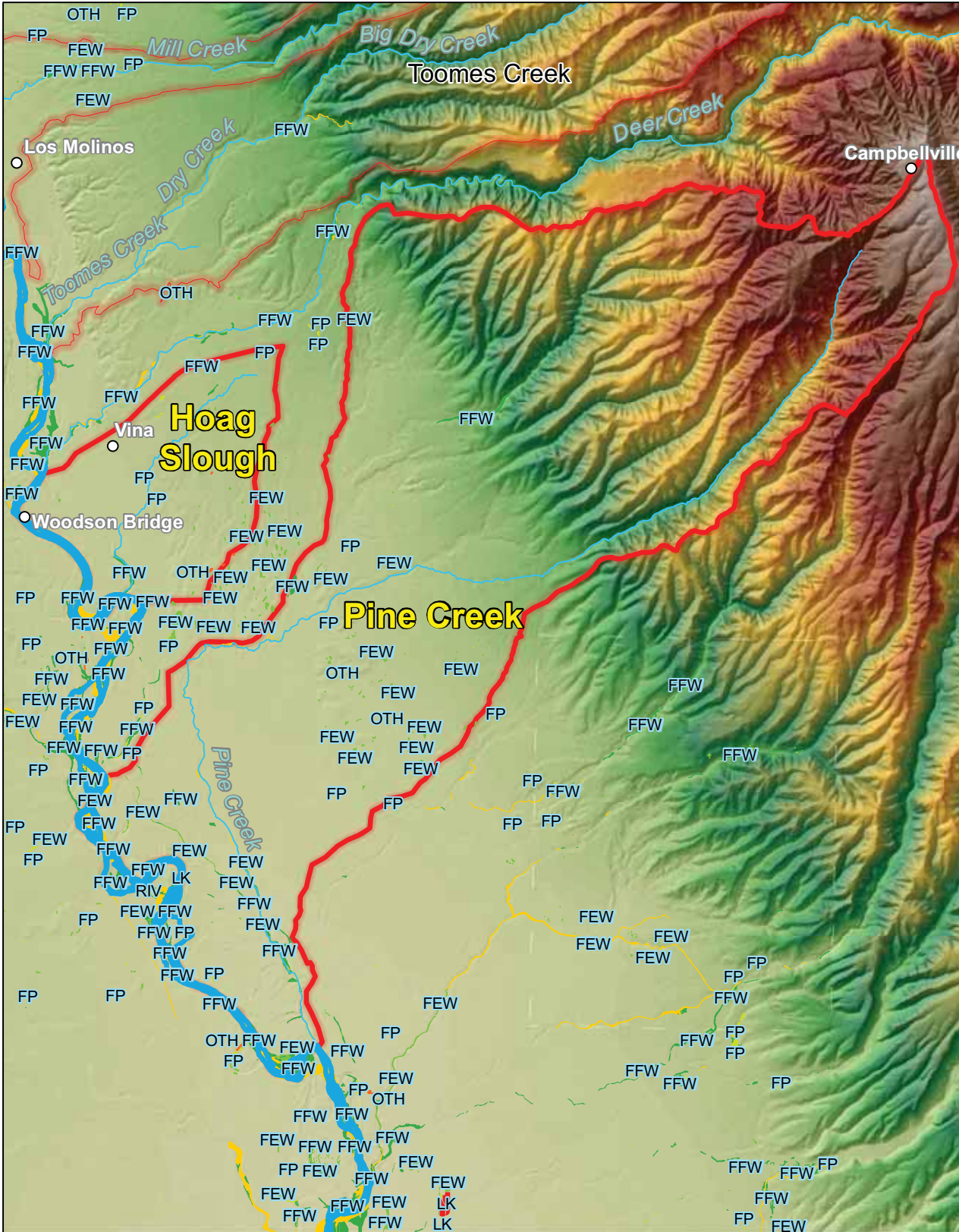


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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Hoag Slough and Pine Creek

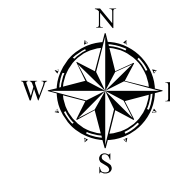
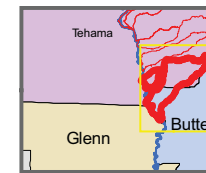


## Legend

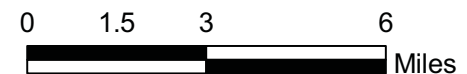
### Wetland Type

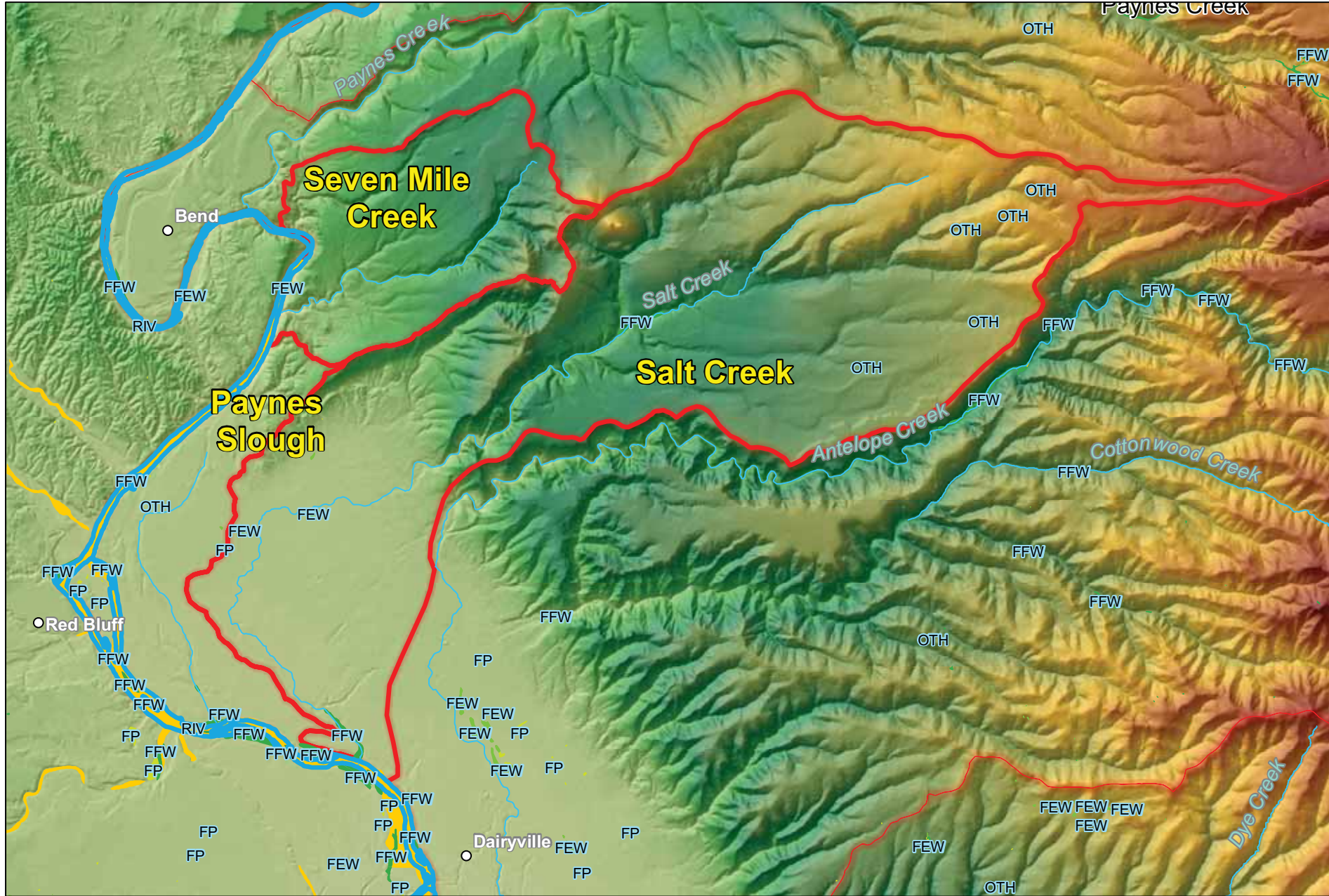
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Other
-  Riverine
-  Watershed Boundary

<http://www.fws.gov/wetlands/Data/DataDownload.html>



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 Conservation District  
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# Tehama East Watershed Assessment

National Wetland Inventory  
 US Fish & Wildlife Service  
 Seven Mile Creek, Paynes Slough,  
 and Salt Creek

## KEY

### Wetland Type

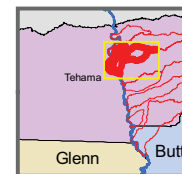
-  FEW Freshwater Emergent Wetland
-  FFW Freshwater Forested/Shrub Wetland
-  FP Freshwater Pond
-  LK Lake
-  OTH Other
-  RIV Riverine

<http://www.fws.gov/wetlands/Data/DataDownload.html>

 Watershed Boundary



Tehama County Resource  
 Conservation District  
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Maps by Characteristics

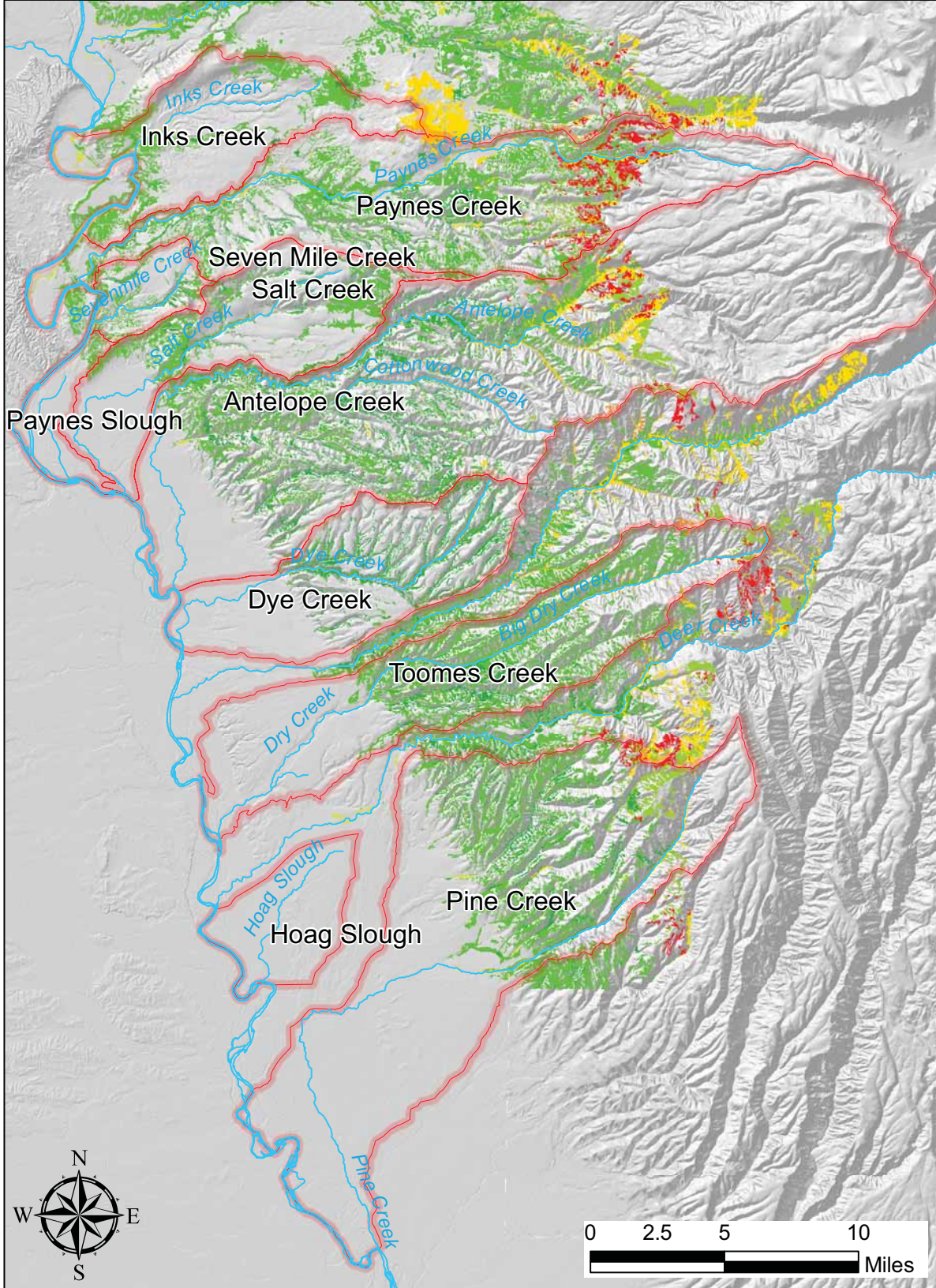
Oak Woodlands

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# Tehama East Watershed Assessment

Oak Woodlands

TNC/CNPS/TCRCD Special Project  
Tehama East Watersheds



"Oak woodlands are one of California's most treasured and iconic landscapes. To many, the sight of majestic oaks rising from the state's rolling foothills forms the core of California's natural persona. Oak woodlands are also rich in wildlife and are a favored place for people to recreate, build their homes, and pursue their livelihoods. Unfortunately, oak woodlands are disappearing throughout the state. Millions of acres of California's oak woodlands have been lost since 1950 along with nearly 90 percent of riparian woodlands statewide. Only about one-third of the 10-12 million acres of oak woodlands that once graced our valleys and hills remain. Vast acres have been lost to intensive agriculture, woodcutting, housing and other urban development (Garrison et al. 2000). Statewide, over 30,000 acres of oak woodlands are converted to residential and commercial uses each year and only about 4 percent of the remaining woodlands are protected (California Oak Foundation Statistics). Eighty percent of the state's hardwood rangelands are privately held (Standiford 1999)."

Quoted from:  
Tehama County Voluntary Oak Woodland Management Plan

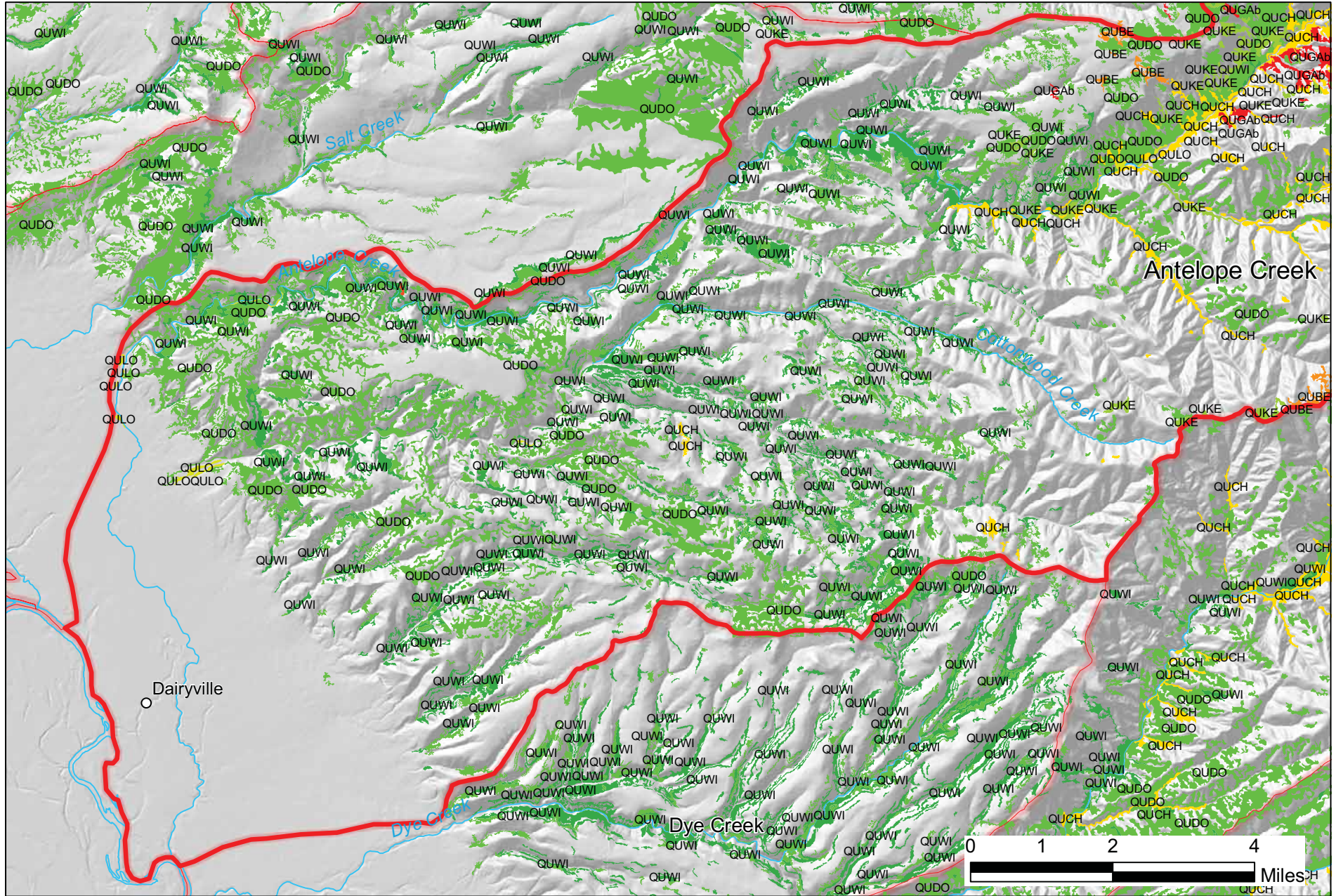
"Two-thirds of California's drinking water passes through or is stored in oak woodlands."

O'Geen, A.T., R.A. Dhlgren, A.Swarowsky, K.W. Tate, D.J. Lewis, and M.J. Singer. 2010. Research connects soil hydrology and stream water chemistry in California oak woodlands. California Agriculture 64 (2): 78-84.

- Legend**
- Quercus wislizeni (Interior Live Oak Tree)
  - Quercus douglasii (Blue Oak)
  - Quercus kelloggii (Black Oak)
  - Quercus lobata (Valley Oak)
  - Quercus chrysolepis (Canyon Live Oak)
  - Quercus berberidifolia (scrub oak)
  - Quercus durata (Leather Oak)
  - Quercus garryana/ var. breweri (Brewer Oak)

TNC, CNPS, TCRCD Special Project  
 Watershed Boundary

Tehama County Resource Conservation District (c)2010

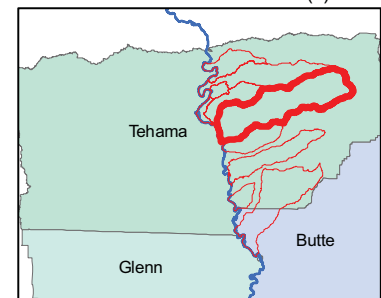
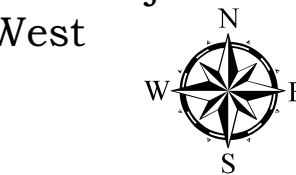


# Tehama East Watershed Assessment

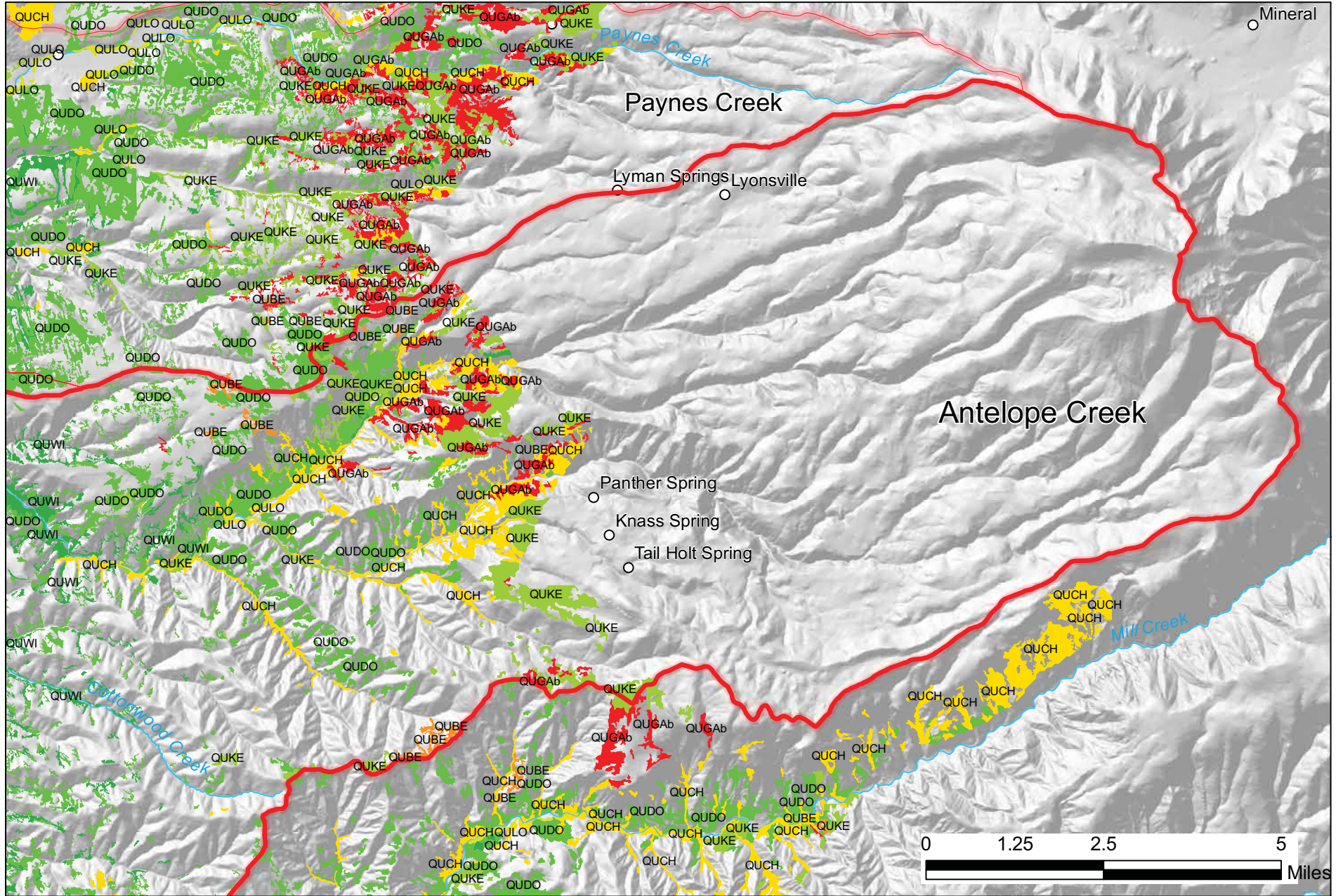
## Oak Woodlands TNC, CNPS, TCRCD Special Project Antelope Creek - West

Tehama County Resource Conservation District (c)2010

- Legend**
- QUWI Quercus wislizeni (Interior Live Oak Tree)
  - QUCH Quercus chrysolepis (Canyon Live Oak)
  - QUDO Quercus douglasii (Blue Oak)
  - QUBE Quercus berberidifolia (scrub oak)
  - QUKE Quercus kelloggii (Black Oak)
  - QUDU Quercus durata (Leather Oak)
  - QULO Quercus lobata (Valley Oak)
  - QUGAB Quercus garryana/ var. breweri (Brewer Oak)



  Watershed Boundary



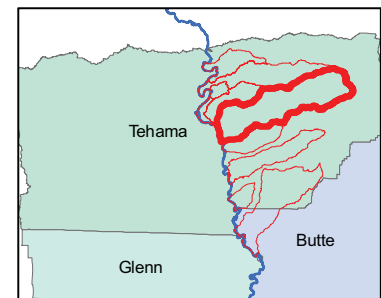
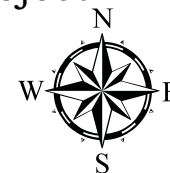
# Tehama East Watershed Assessment

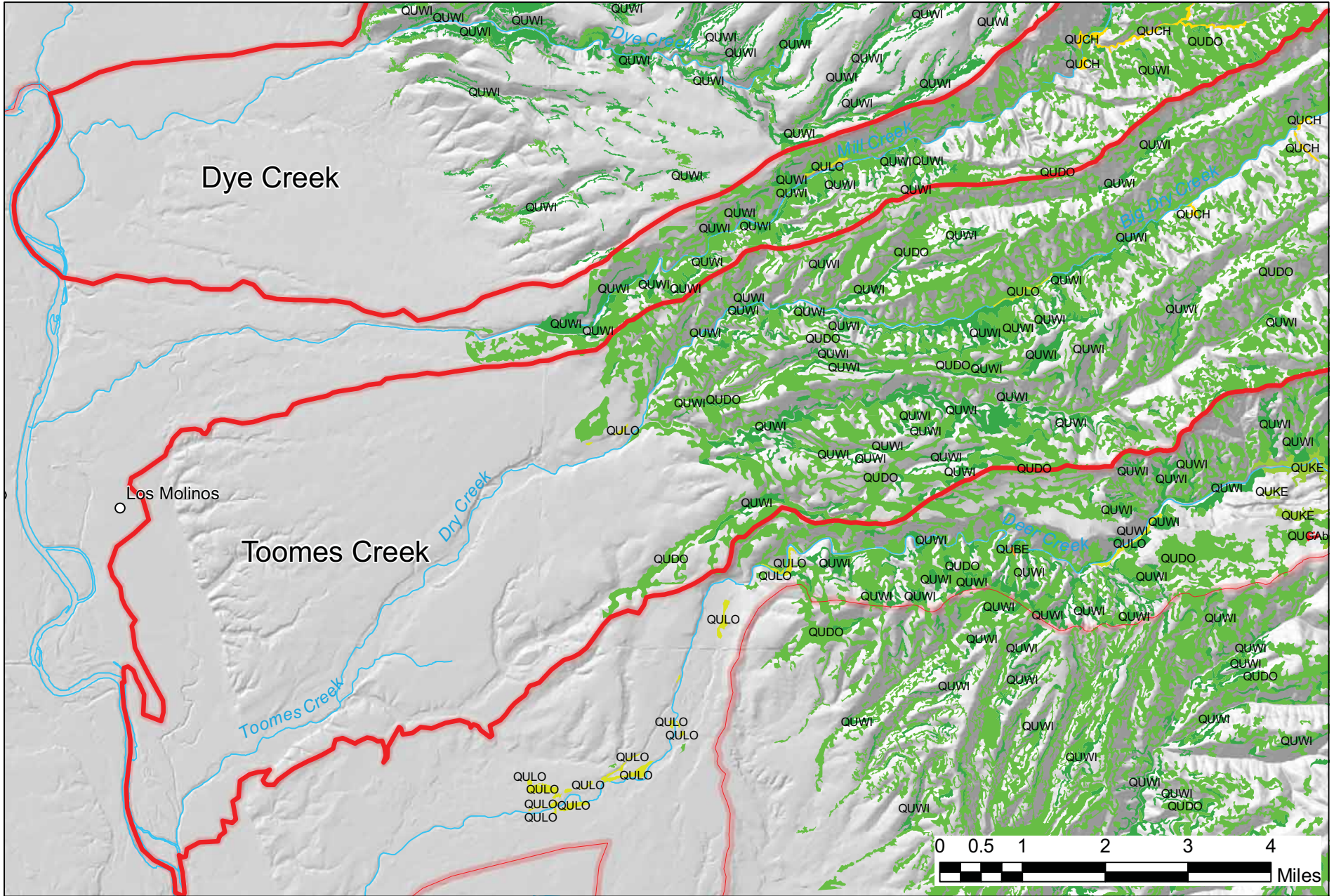
## Oak Woodlands TNC, CNPS, TCRCD Special Project Antelope Creek - East

Tehama County Resource Conservation District (c)2010

### Legend

- |             |  |   |
|-------------|--|---|
| <b>Oaks</b> | <b>QUWI</b> Quercus wislizeni (Interior Live Oak Tree)   | <b>QUCH</b> Quercus chrysolepis (Canyon Live Oak) |
|             | <b>QULO</b> Quercus lobata (Valley Oak)                  | <b>QUBE</b> Quercus berberidifolia (scrub oak)    |
|             | <b>QUKE</b> Quercus kelloggii (Black Oak)                | <b>QUDU</b> Quercus durata (Leather Oak)          |
|             | <b>QUGAb</b> Quercus garryana/ var. breweri (Brewer Oak) | Watershed Boundary                                |





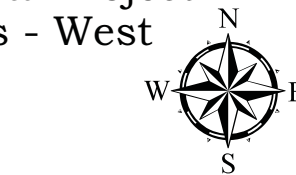
Tehama County Resource Conservation District (c)2010

# Tehama East Watershed Assessment

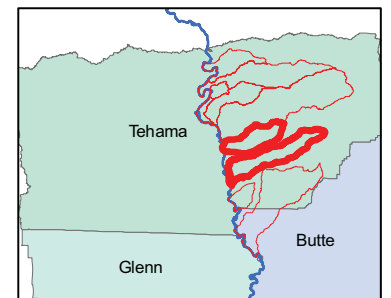
## Oak Woodlands TNC, CNPS, TCRCD Special Project Dye and Toomes Creeks - West

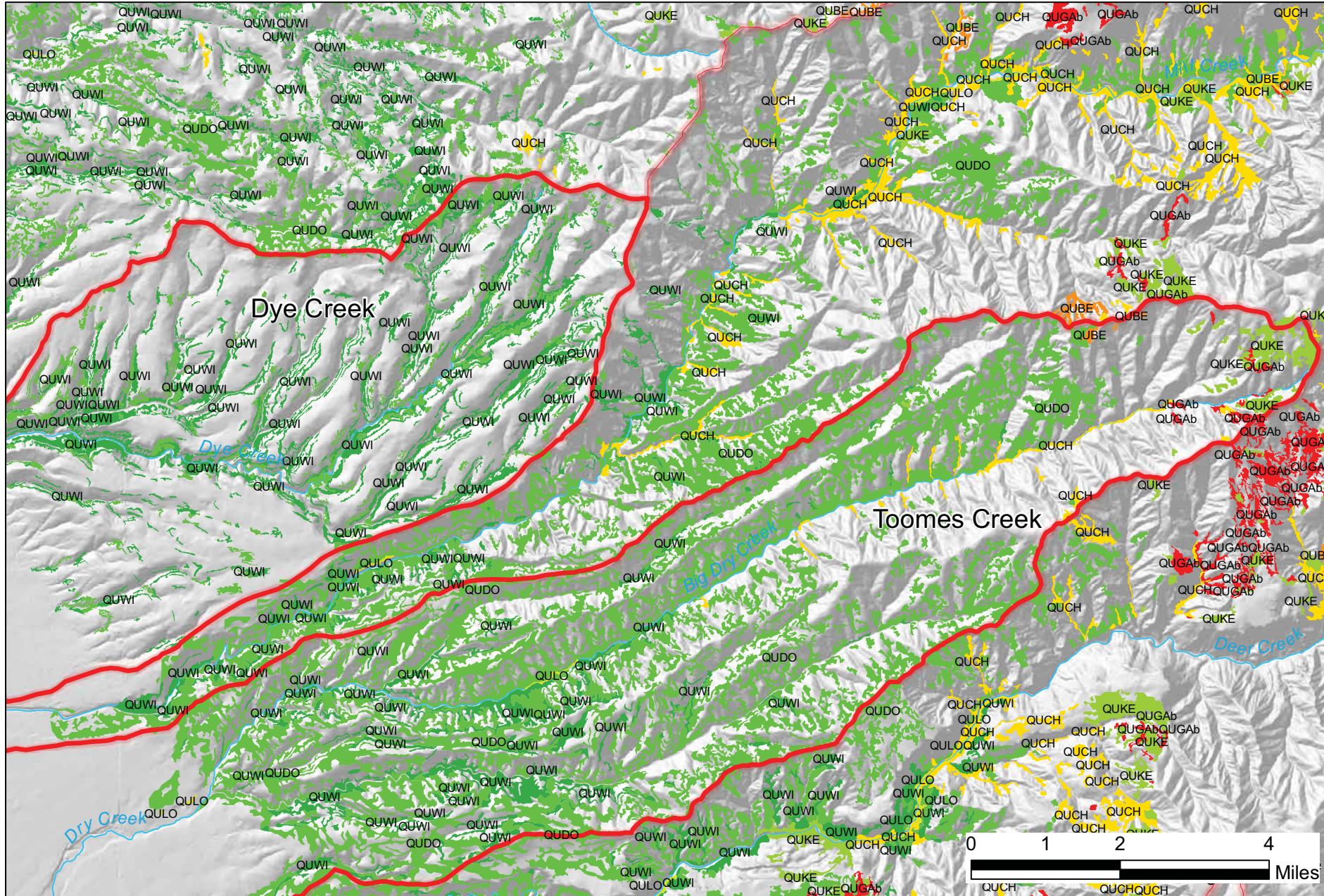
### Legend

- QUWI Quercus wislizeni (Interior Live Oak Tree)
- QUCH Quercus chrysolepis (Canyon Live Oak)
- QUDO Quercus douglasii (Blue Oak)
- QUBE Quercus berberidifolia (scrub oak)
- QUKE Quercus kelloggii (Black Oak)
- QUDU Quercus durata (Leather Oak)
- QULO Quercus lobata (Valley Oak)
- QUGAb Quercus garryana/ var. breweri (Brewer Oak)



Watershed Boundary





# Tehama East Watershed Assessment

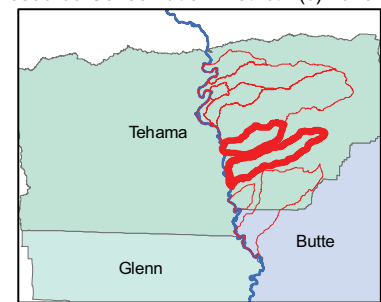
## Oak Woodlands TNC, CNPS, TCRCD Special Project Dye and Toomes Creeks - East

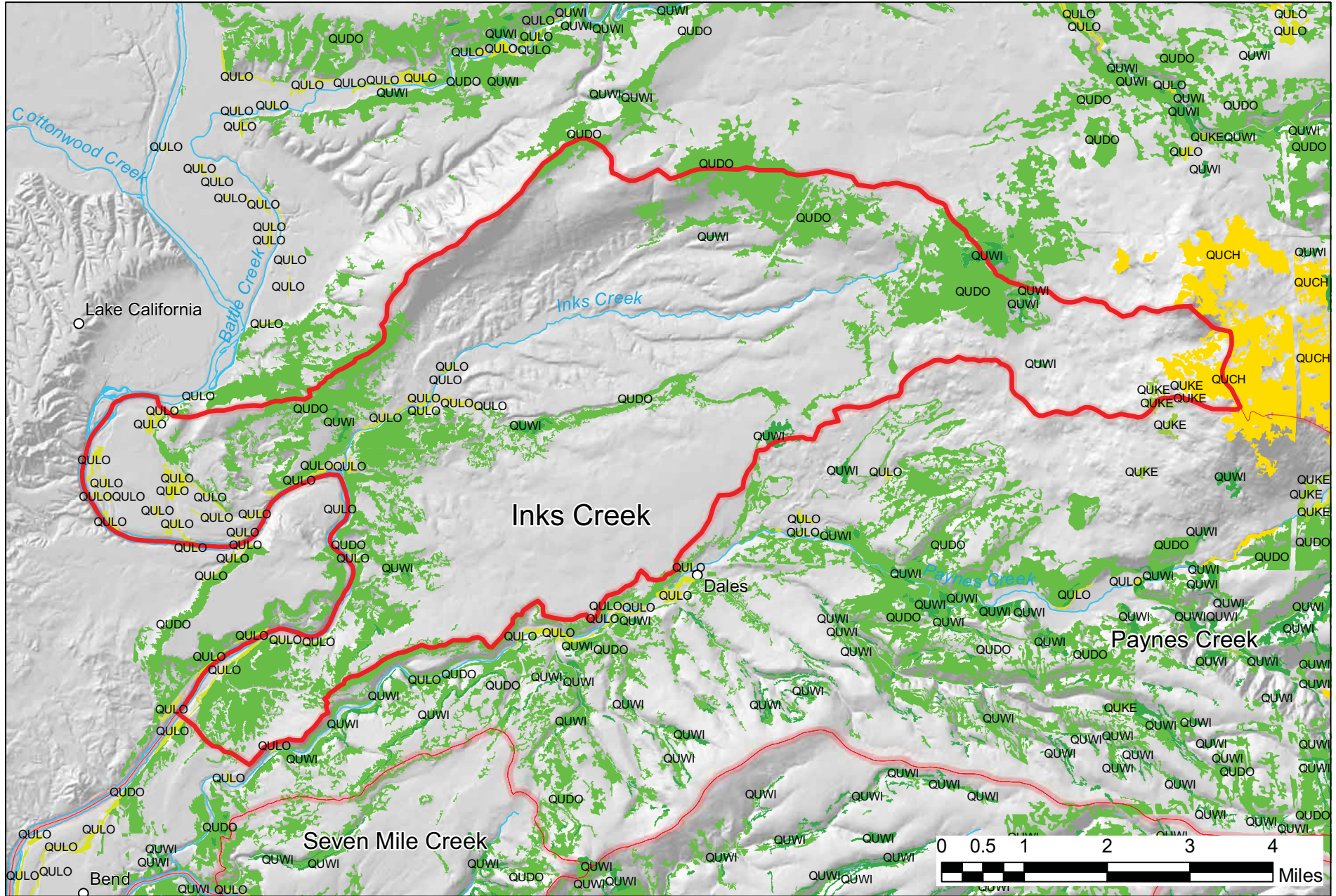
Tehama County Resource Conservation District (c) 2010

### Legend

- |  |  |
|--|--|
| <b>QUWI</b> Quercus wislizeni (Interior Live Oak Tree) | <b>QUCH</b> Quercus chrysolepis (Canyon Live Oak)        |
| <b>QUDO</b> Quercus douglasii (Blue Oak)               | <b>QUBE</b> Quercus berberidifolia (scrub oak)           |
| <b>QUKE</b> Quercus kelloggii (Black Oak)              | <b>QUDU</b> Quercus durata (Leather Oak)                 |
| <b>QULO</b> Quercus lobata (Valley Oak)                | <b>QUGAb</b> Quercus garryana/ var. breweri (Brewer Oak) |

Watershed Boundary



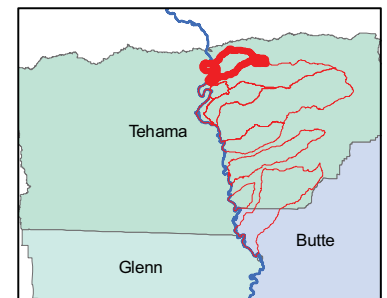
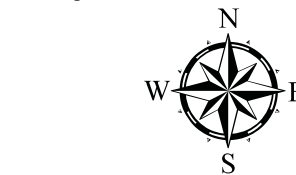


# Tehama East Watershed Assessment

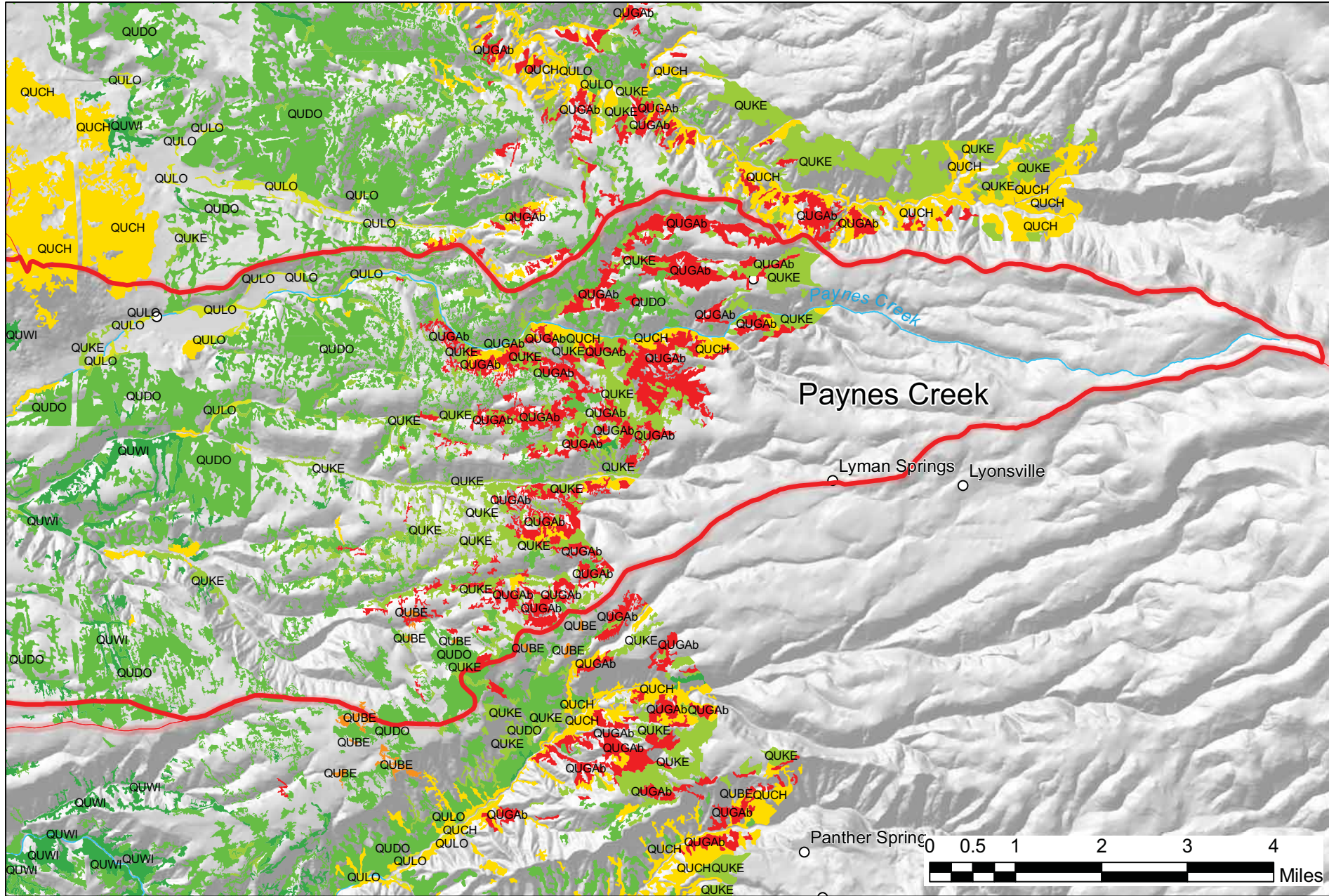
## Oak Woodlands TNC, CNPS, TCRCD Special Project Inks Creek

Tehama County Resource Conservation District (c) 2010

- Legend**
- QUWI Quercus wislizeni (Interior Live Oak Tree)
  - QUCH Quercus chrysolepis (Canyon Live Oak)
  - QUDO Quercus douglasii (Blue Oak)
  - QUBE Quercus berberidifolia (scrub oak)
  - QUKE Quercus kelloggii (Black Oak)
  - QUDU Quercus durata (Leather Oak)
  - QULO Quercus lobata (Valley Oak)
  - QUGab Quercus garryana/ var. breweri (Brewer Oak)



⬭ Watershed Boundary



# Tehama East Watershed Assessment

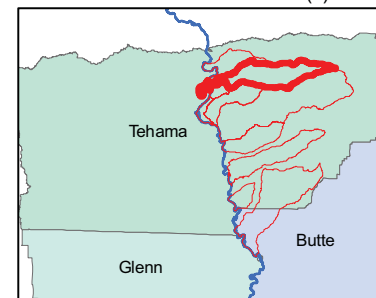
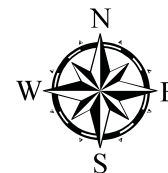
Oak Woodlands  
TNC, CNPS, TCRCD Special Project  
Paynes Creek - East

Tehama County Resource Conservation District (c) 2010

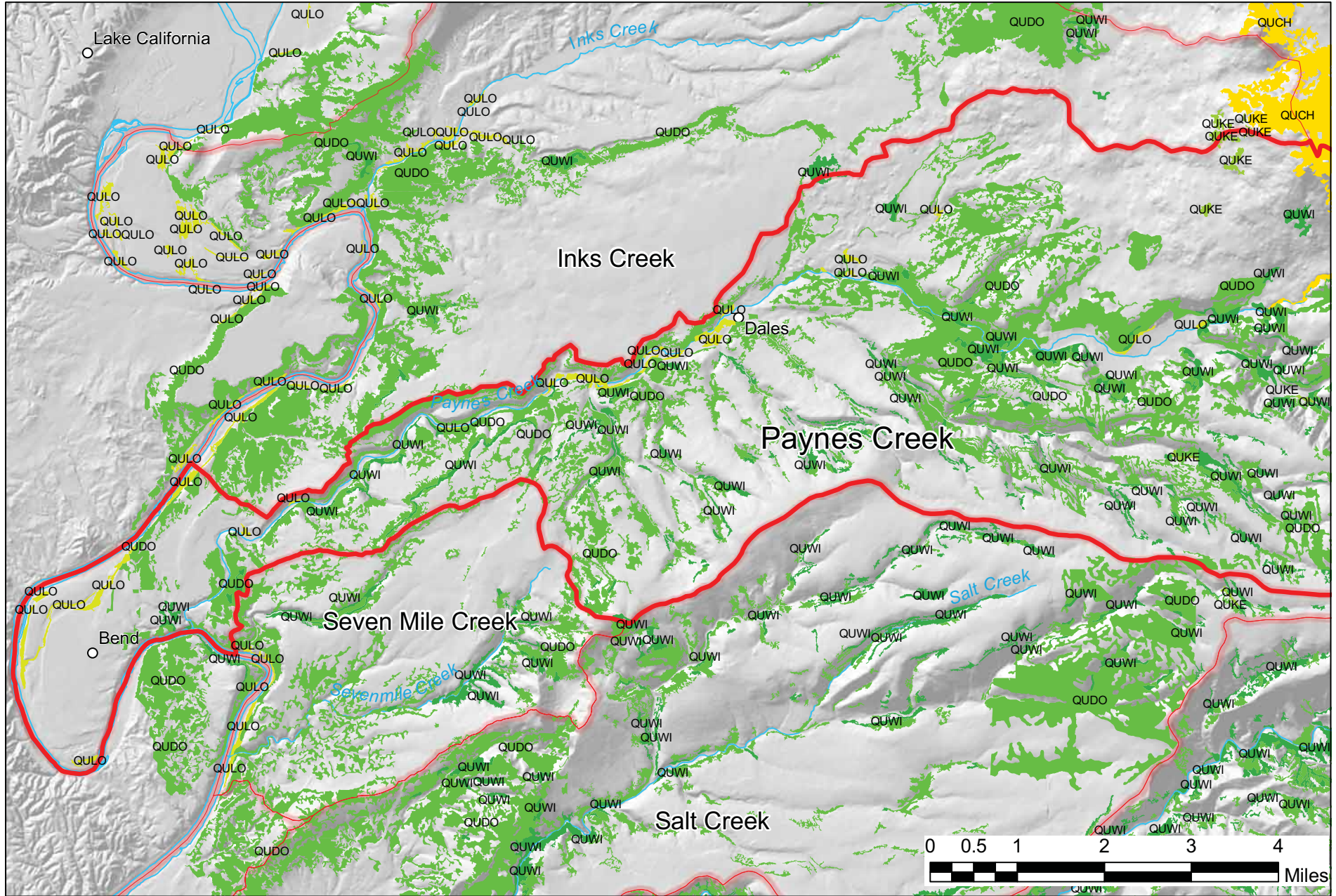
## Legend

- |  |  |
|--|--|
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QUWI</span> Quercus wislizeni (Interior Live Oak Tree) | <span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">QUCH</span> Quercus chrysolepis (Canyon Live Oak)        |
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QUDO</span> Quercus douglasii (Blue Oak)               | <span style="background-color: #FF8C00; border: 1px solid black; padding: 2px;">QUBE</span> Quercus berberidifolia (scrub oak)           |
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QUKE</span> Quercus kelloggii (Black Oak)              | <span style="background-color: #FF0000; border: 1px solid black; padding: 2px;">QUDU</span> Quercus durata (Leather Oak)                 |
| <span style="background-color: #FFD700; border: 1px solid black; padding: 2px;">QULO</span> Quercus lobata (Valley Oak)                | <span style="background-color: #FF0000; border: 1px solid black; padding: 2px;">QUGAb</span> Quercus garryana/ var. breweri (Brewer Oak) |

  Watershed Boundary







# Tehama East Watershed Assessment

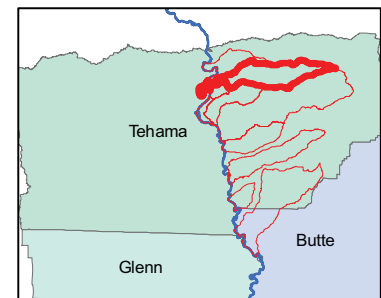
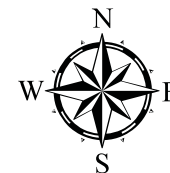
Oak Woodlands  
TNC, CNPS, TCRCD Special Project  
Paynes Creek - West

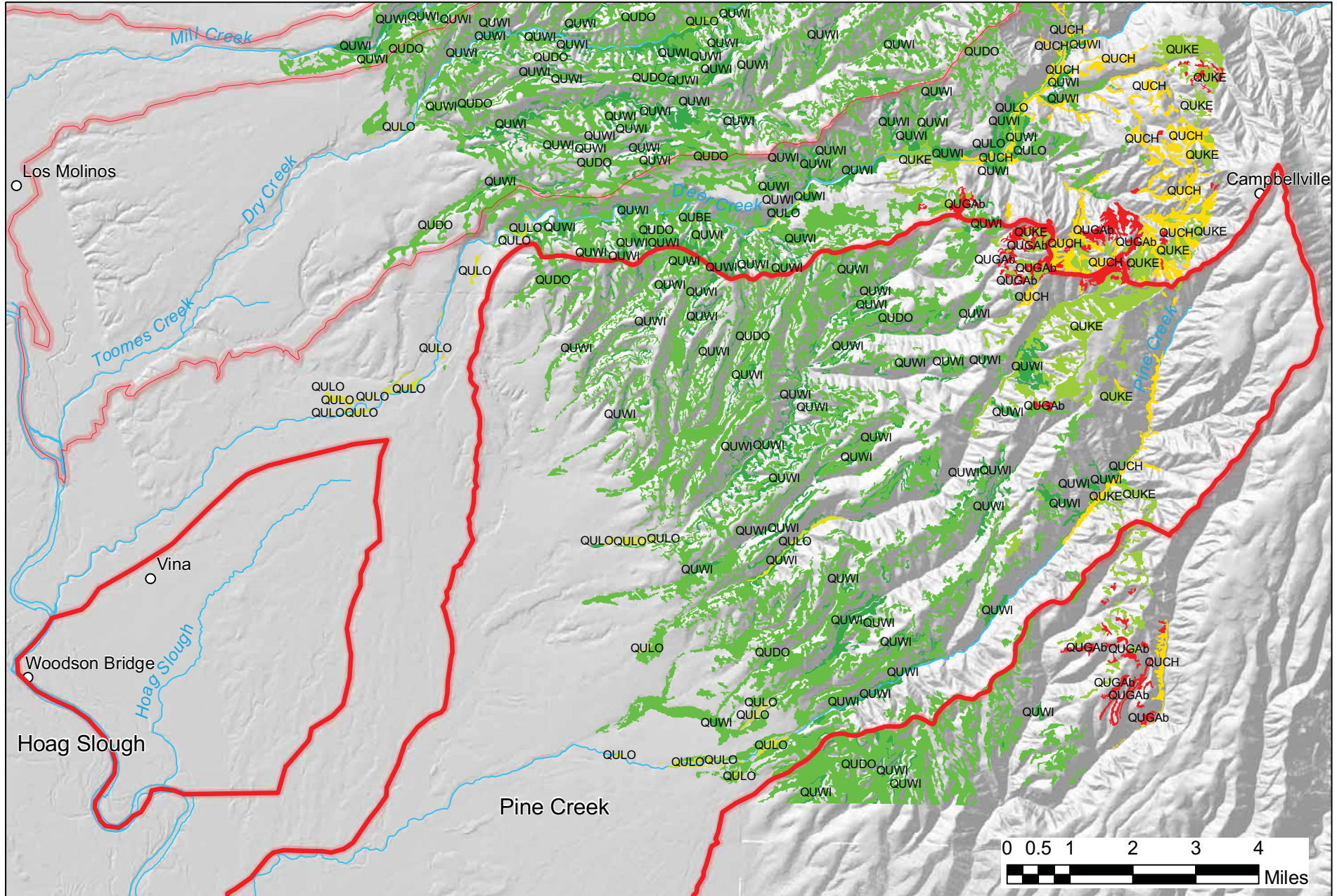
Tehama County Resource Conservation District (c) 2010

## Legend

- QUWI Quercus wislizeni (Interior Live Oak Tree)
- QUCH Quercus chrysolepis (Canyon Live Oak)
- QUDO Quercus douglasii (Blue Oak)
- QUBE Quercus berberidifolia (scrub oak)
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- QULO Quercus lobata (Valley Oak)
- QUGab Quercus garryana/ var. breweri (Brewer Oak)

Watershed Boundary





# Tehama East Watershed Assessment

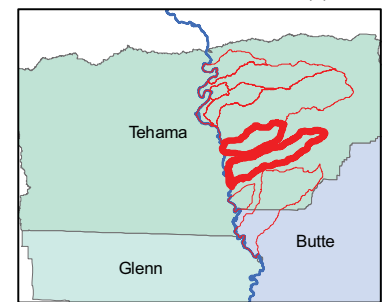
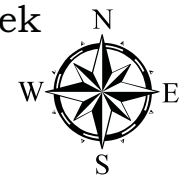
## Oak Woodlands TNC, CNPS, TCRCD Special Project Hoag Slough and Upper Pine Creek

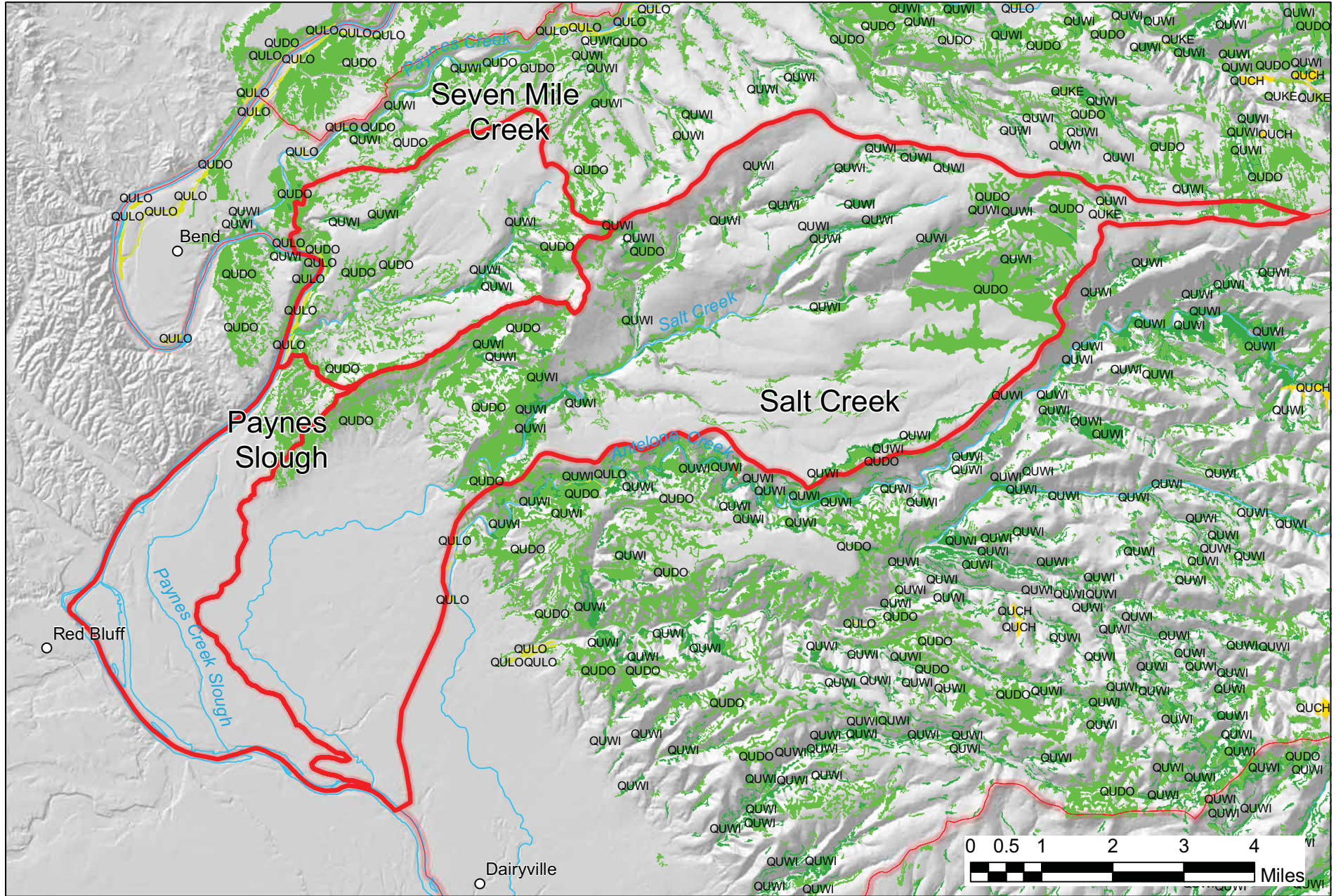
Tehama County Resource Conservation District (c) 2010

### Legend

- |  |  |
|--|--|
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QUWI</span> Quercus wislizeni (Interior Live Oak Tree) | <span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">QUCH</span> Quercus chrysolepis (Canyon Live Oak)        |
| <span style="background-color: #008000; border: 1px solid black; padding: 2px;">QUDO</span> Quercus douglasii (Blue Oak)               | <span style="background-color: #FFA500; border: 1px solid black; padding: 2px;">QUBE</span> Quercus berberidifolia (scrub oak)           |
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QUKE</span> Quercus kelloggii (Black Oak)              | <span style="background-color: #FF0000; border: 1px solid black; padding: 2px;">QUDU</span> Quercus durata (Leather Oak)                 |
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">QULO</span> Quercus lobata (Valley Oak)                | <span style="background-color: #FF0000; border: 1px solid black; padding: 2px;">QUGab</span> Quercus garryana/ var. breweri (Brewer Oak) |

  Watershed Boundary





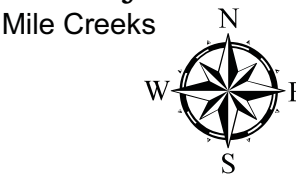
# Tehama East Watershed Assessment

Oak Woodlands  
 TNC, CNPS, TCRCD Special Project  
 Paynes Slough, Salt & Seven Mile Creeks

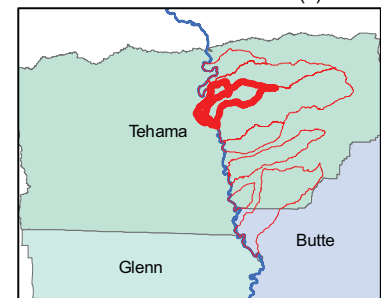
Tehama County Resource Conservation District (c) 2010

## Legend

- QUWI Quercus wislizeni (Interior Live Oak Tree)
- QUDO Quercus douglasii (Blue Oak)
- QUKE Quercus kelloggii (Black Oak)
- QULO Quercus lobata (Valley Oak)
- QUCH Quercus chrysolepis (Canyon Live Oak)
- QUBE Quercus berberidifolia (scrub oak)
- QUDU Quercus durata (Leather Oak)
- QUGab Quercus garryana/ var. breweri (Brewer Oak)



Watershed Boundary



Maps by Characteristics

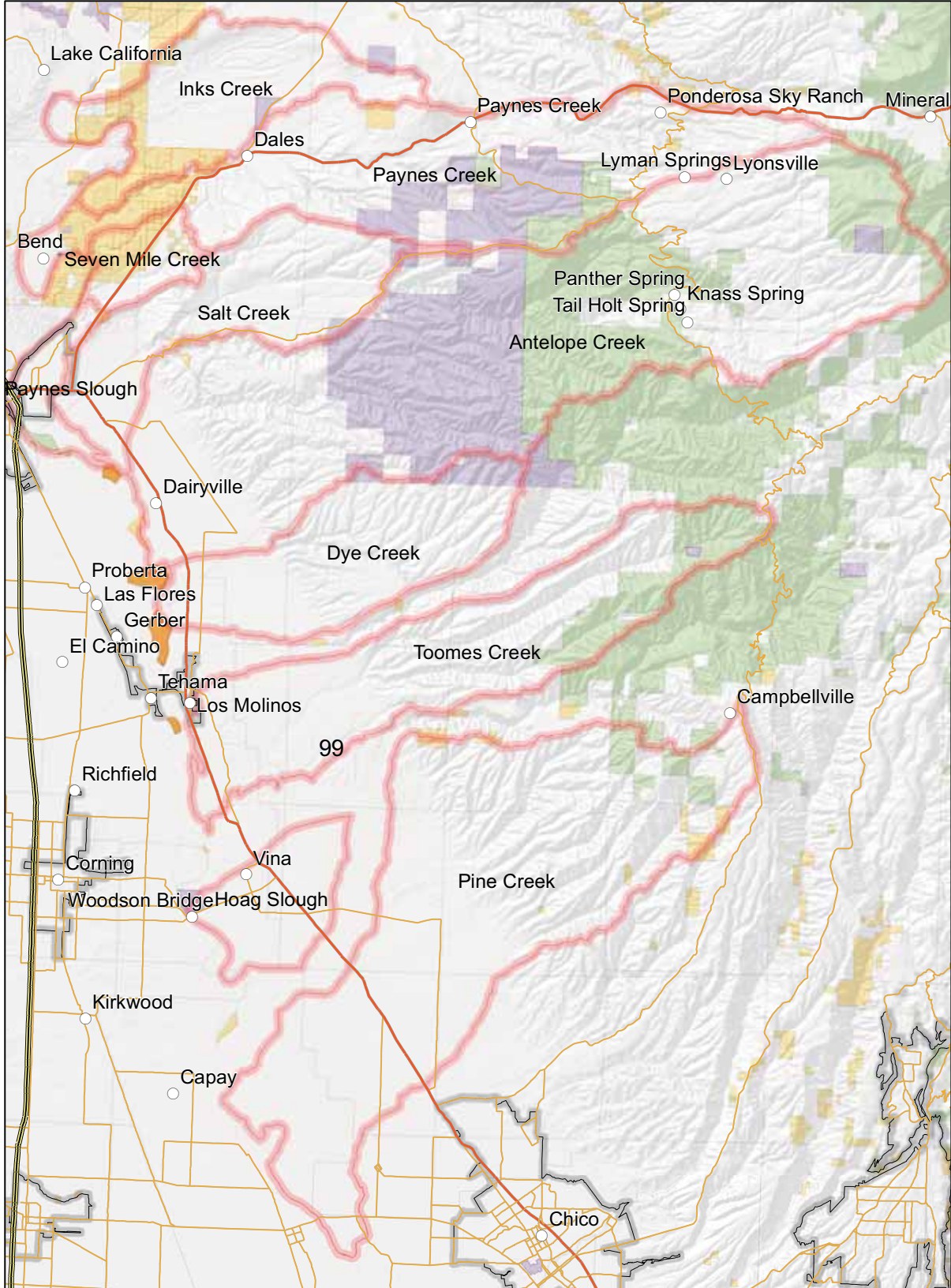
Land Ownership

Study Area .....	167
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Dye and Toomes Creek Watersheds .....	169
Inks Creek Watershed .....	170
Paynes Creek Watershed .....	171
Pine Creek and Hoag Slough Watersheds.....	172
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# Tehama East Watershed Assessment

## Land Ownership Tehama East Watersheds

The land tenure structure can affect the economic and social development of the land and its natural resource base. This system can be a instrument for conservation, by following prescribed rules and regulations that govern and managing that base. These systems are dynamic, and as the needs for the natural resources change, so to does the use of those lands change. They will respond to socio-economic and political factors that can change those resources utilized.




### Key

Land Ownership within the Tehama East Watersheds

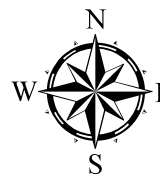
-  State Lands : 42,747 Acres
-  US National Forest : 44,925 Acres
-  US Bureau of Land Management : 16,078 Acres
-  US Fish and Wildlife : 27 Acres
-  Private : 337,967 Acres

<http://www.fs.fed.us/r5/rs/clearinghouse/gis-download.shtml>

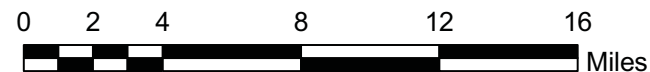
 Major Roads & Highways

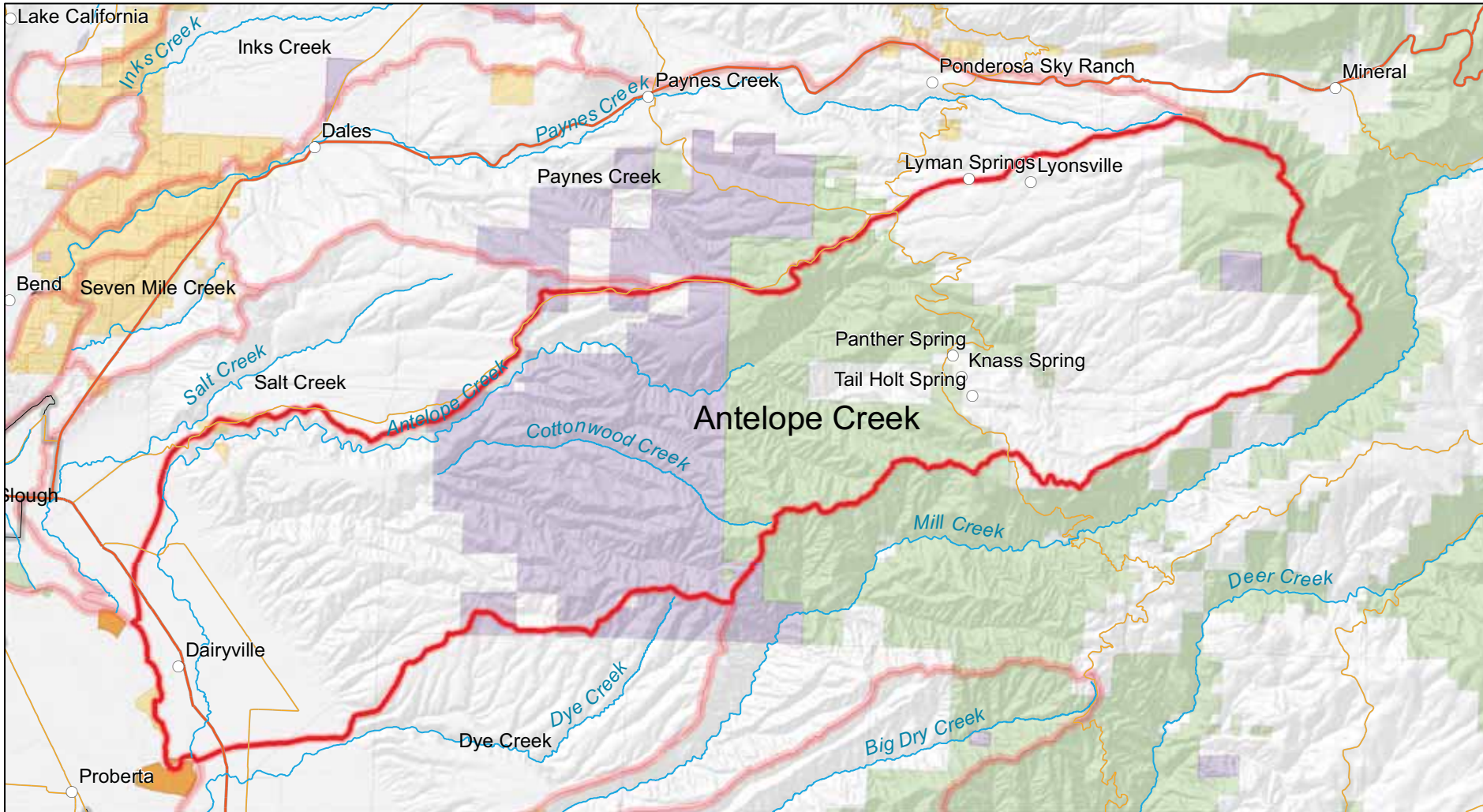
 Urban Areas

 Watershed Boundary



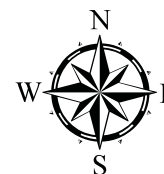
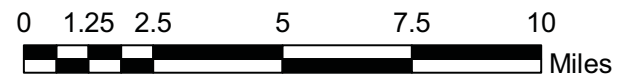
Tehama County Resource  
Conservation District  
(c) 2010





# Tehama East Watershed Assessment

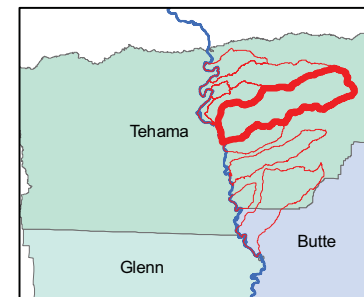
## Land Ownership Antelope Creek

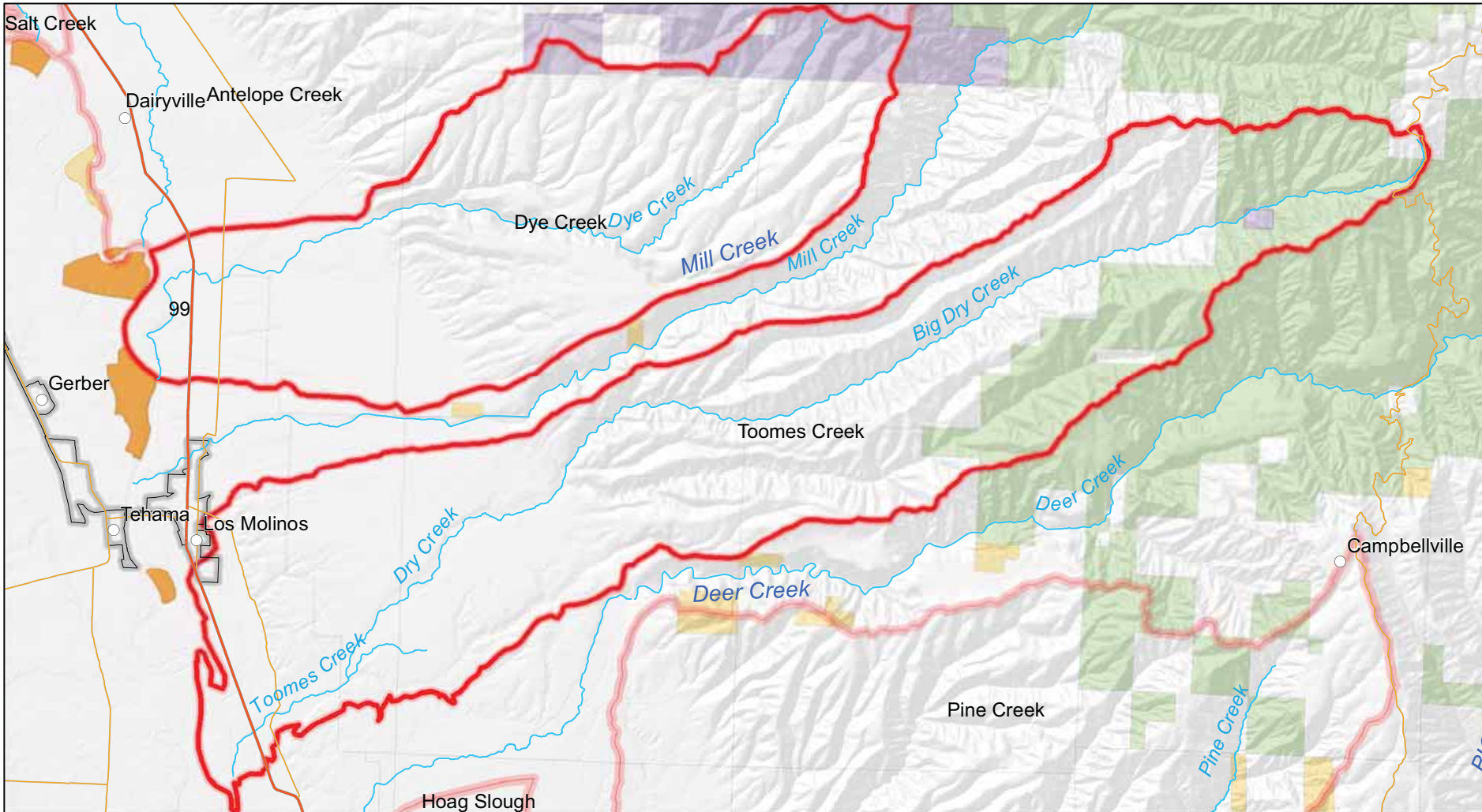


### Legend

-  State Lands
-  US National Forest
-  US Bureau of Land Management
-  US Fish and Wildlife
-  Private
-  Major Roads & Highways
-  Urban Areas
-  Watershed Boundary

State: 28,331 Acres  
 National Forest: 29,221 Acres  
 BLM: 183 Acres  
 USFWS: 28 Acres  
 Private: 71,290 Acres





# Tehama East Watershed Assessment

## Land Ownership Dye and Toomes Creeks

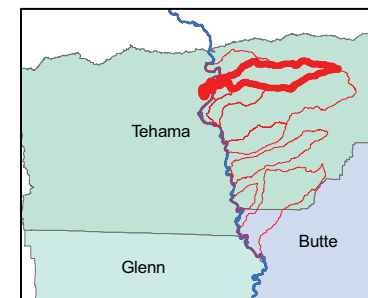
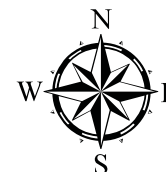


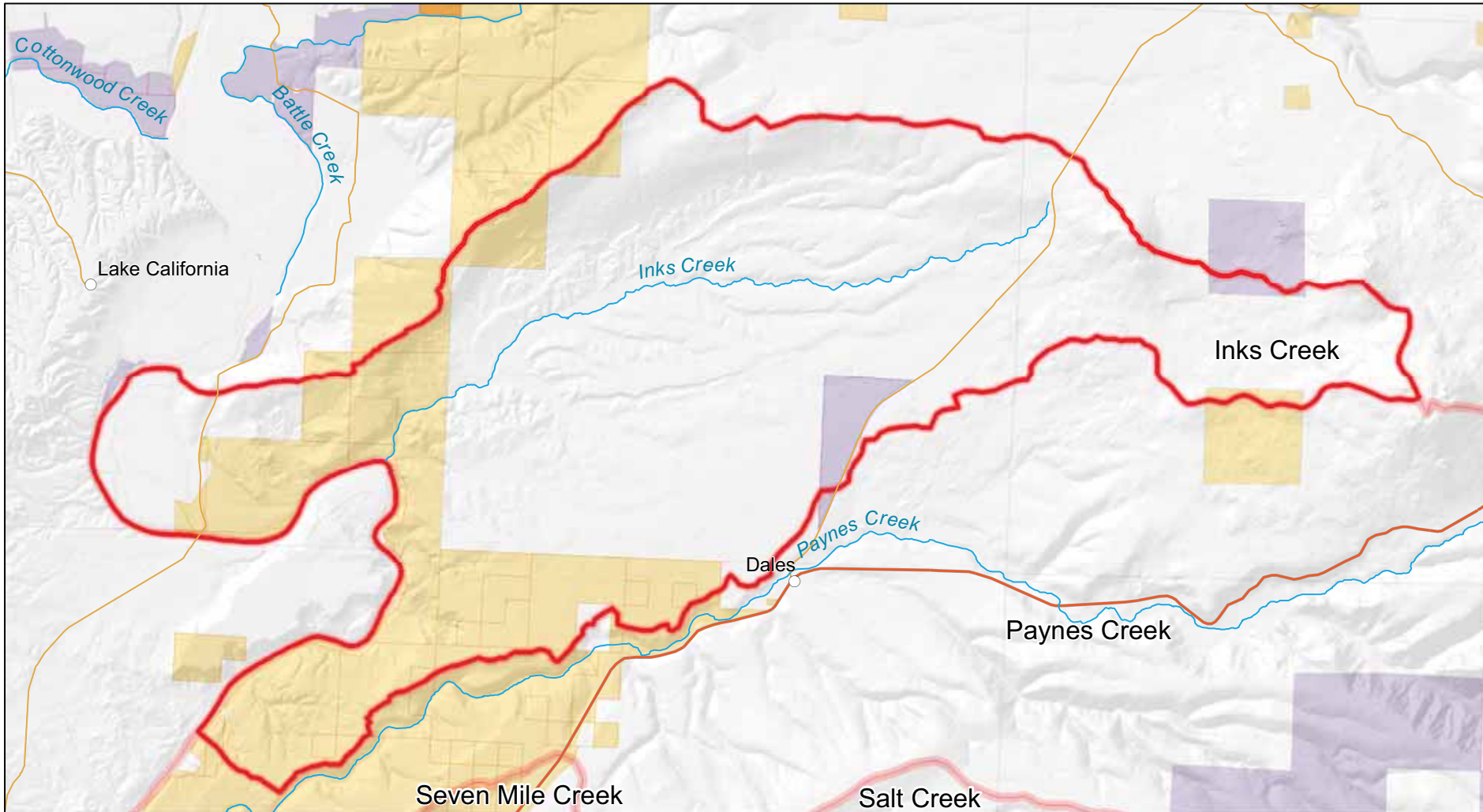
### Legend

- State Lands
- US National Forest
- US Bureau of Land Management
- US Fish and Wildlife
- Private
- Major Roads & Highways
- Urban Areas
- Watershed Boundary

Dye Creek Watershed  
 State Property: 2,379 Acres  
 National Forest: 0 Acres  
 BLM: 1 Acre  
 USFW: 27 Acres  
 Private: 29,184

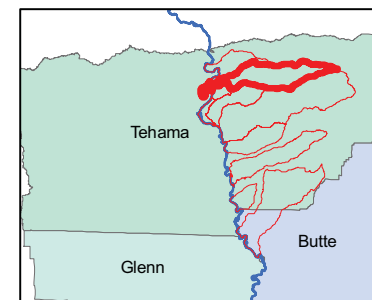
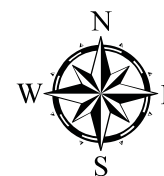
Toomes Creek Watershed  
 State Property: 100 Acres  
 National Forest: 9,023 Acres  
 BLM: 3 Acres  
 USFW: 27 Acres  
 Private: 39,665





# Tehama East Watershed Assessment

## Land Ownership Inks Creek

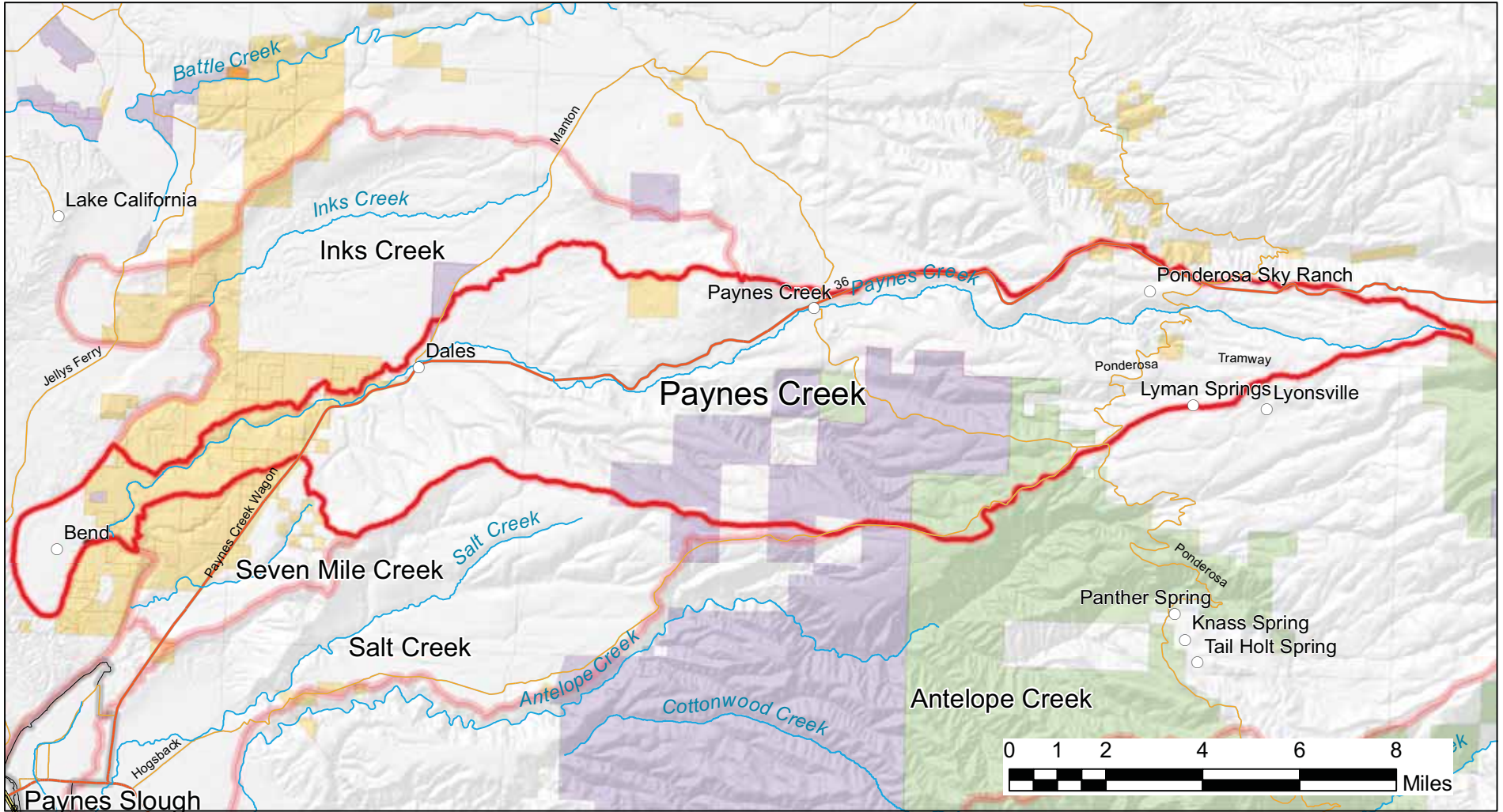


### Legend

- |  |  |
|--|--|
|  State Lands                  |  Major Roads & Highways |
|  US National Forest           |  Urban Areas            |
|  US Bureau of Land Management |  Watershed Boundary     |
|  US Fish and Wildlife         |  |
|  Private                      |  |

State: 456 Acres  
BLM: 6,218 Acres  
Private: 19,504 Acres

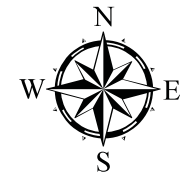




Tehama County Resource Conservation District (c) 2010

# Tehama East Watershed Assessment

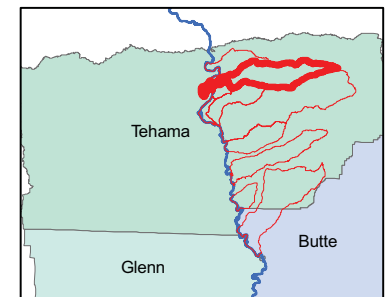
## Land Ownership Paynes Creek



### Legend

- |  |  |
|--|--|
|  State Lands                  |  Major Roads & Highways |
|  US National Forest           |  Urban Areas            |
|  US Bureau of Land Management |  Watershed Boundary     |
|  US Fish and Wildlife         |  |
|  Private                      |  |

State: 10,392 Acres  
 National Forest: 3,514 Acres  
 BLM: 4,721 Acres  
 Private: 42,783 Acres



# Tehama East Watershed Assessment

## Land Ownership Hoag Slough and Pine Creek


State Lands: 130 Acres  
 US Forest Service: 2,877 Acres  
 BLM: 1,303 Acres  
 USFWS: 0  
 Private: 85,608 Acres

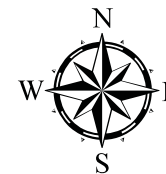
### Legend

-  State Lands
-  US National Forest
-  US Bureau of Land Management
-  US Fish and Wildlife
-  Private

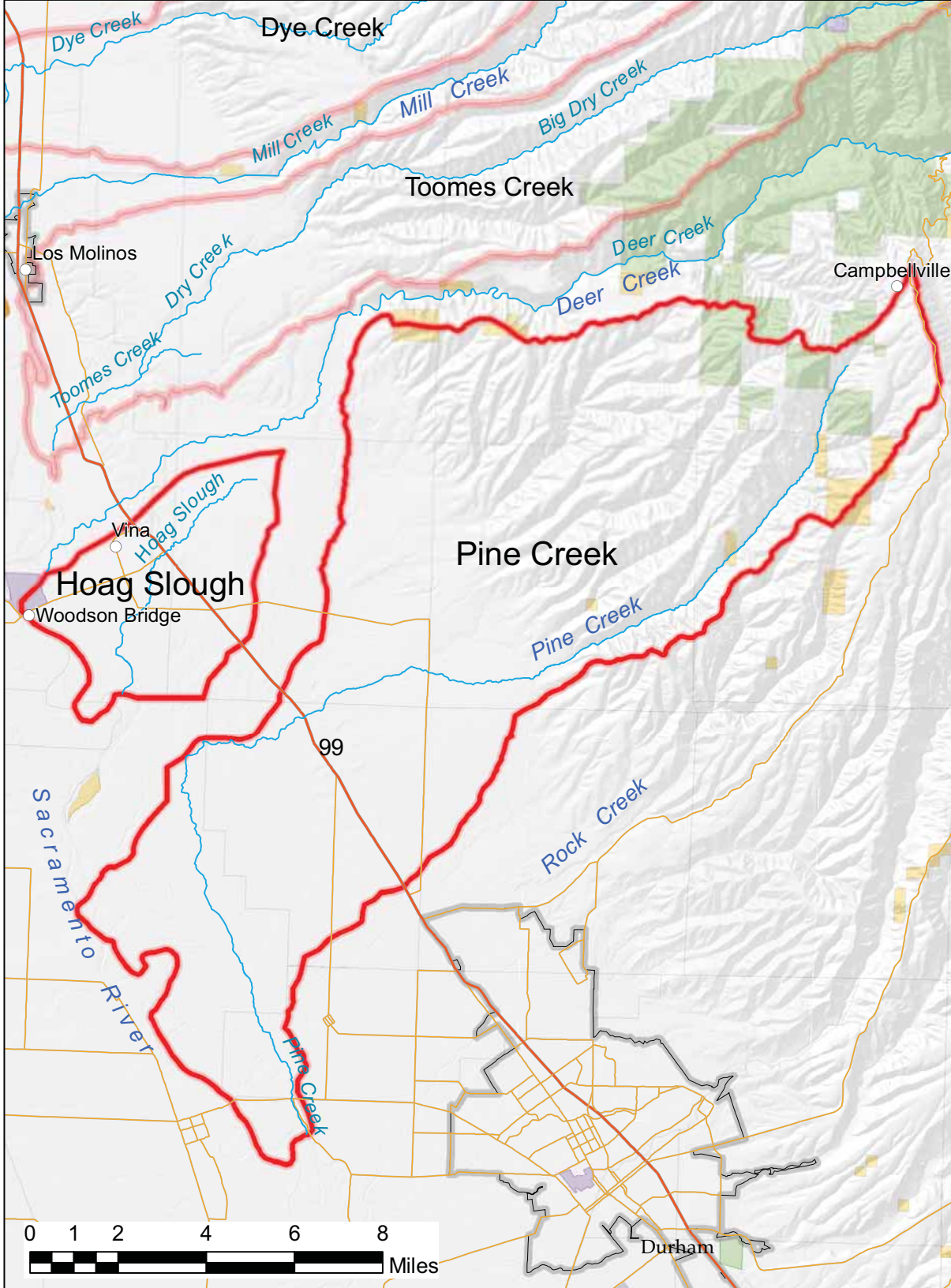
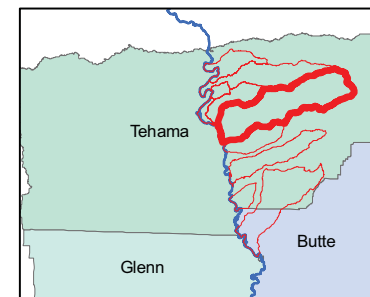
 Major Roads & Highways

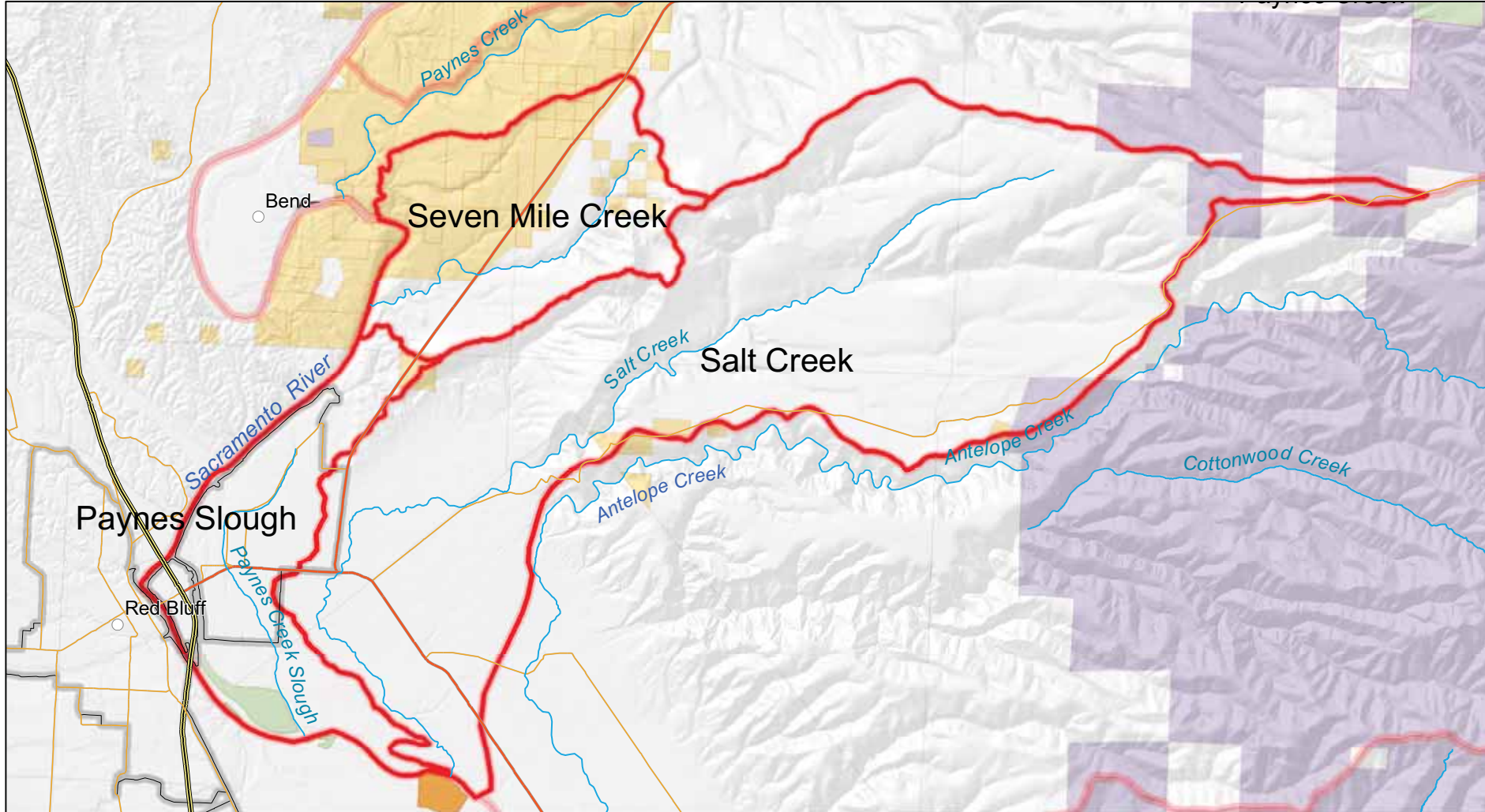
 Urban Areas

 Watershed Boundary



Tehama County Resource Conservation District (c) 2010













# Tehama East Watershed Assessment

## Land Ownership Paynes Slough, Salt, and Seven Mile Creeks

Tehama County Resource Conservation District (c) 2010



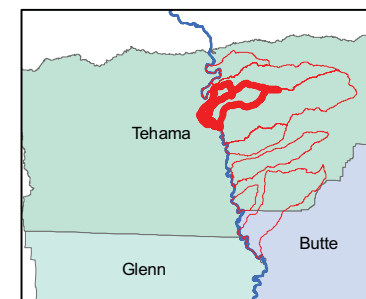
### Legend

-  Major Roads & Highways
-  Urban Areas
-  Watershed Boundary
-  State Lands
-  US National Forest
-  US Bureau of Land Management
-  US Fish and Wildlife
-  US National Park Service

Paynes Slough  
 State: 0 Acres  
 National Forest: 288 Acres  
 BLM: 89 Acres  
 USFWS: 0 Acres  
 Private: 5551 Acres

Seven Mile Creek  
 State: 0 Acres  
 National Forest: 0 Acres  
 BLM: 3,315 Acres  
 USFWS: 0 Acres  
 Private: 3,497 Acres

Salt Creek  
 State: 959 Acres  
 National Forest: 0 Acres  
 BLM: 223 Acres  
 USFWS: 0 Acres  
 Private: 28244 Acres



Maps by Characteristics

Passage Assessment

Study Area .....	175
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# Tehama East Watershed Assessment

## Passage Assessment Database

### Tehama East Watersheds






"The Passage Assessment Database (PAD) is an ongoing inventory of known and potential barriers to anadromous fish in California. It compiles currently available fish passage information from more than 100 data sources, and allows past and future barrier assessments to be standardized and stored in one place. The inventory is to be used to identify barriers suitable for removal or modification to restore spawning and riparian habitat for salmon and steelhead, and to enhance aquatic and riparian habitat."

The PAD is intended to be compatible with a variety of other data sets related to anadromous fish issues. All PAD records are saved with geographic location information. This file can be used to represent the known and potential barriers on maps or to provide latitude/longitude coordinates. Each barrier record is indexed to the 24k high-resolution NHD allowing the user to combine the PAD with other fisheries data tied to the same hydrography.


Quoted from:  
[http://www.calfish.org/Portals/0/DataMaps/DataDownload/PAD\\_December2009.htm](http://www.calfish.org/Portals/0/DataMaps/DataDownload/PAD_December2009.htm)

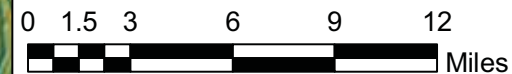
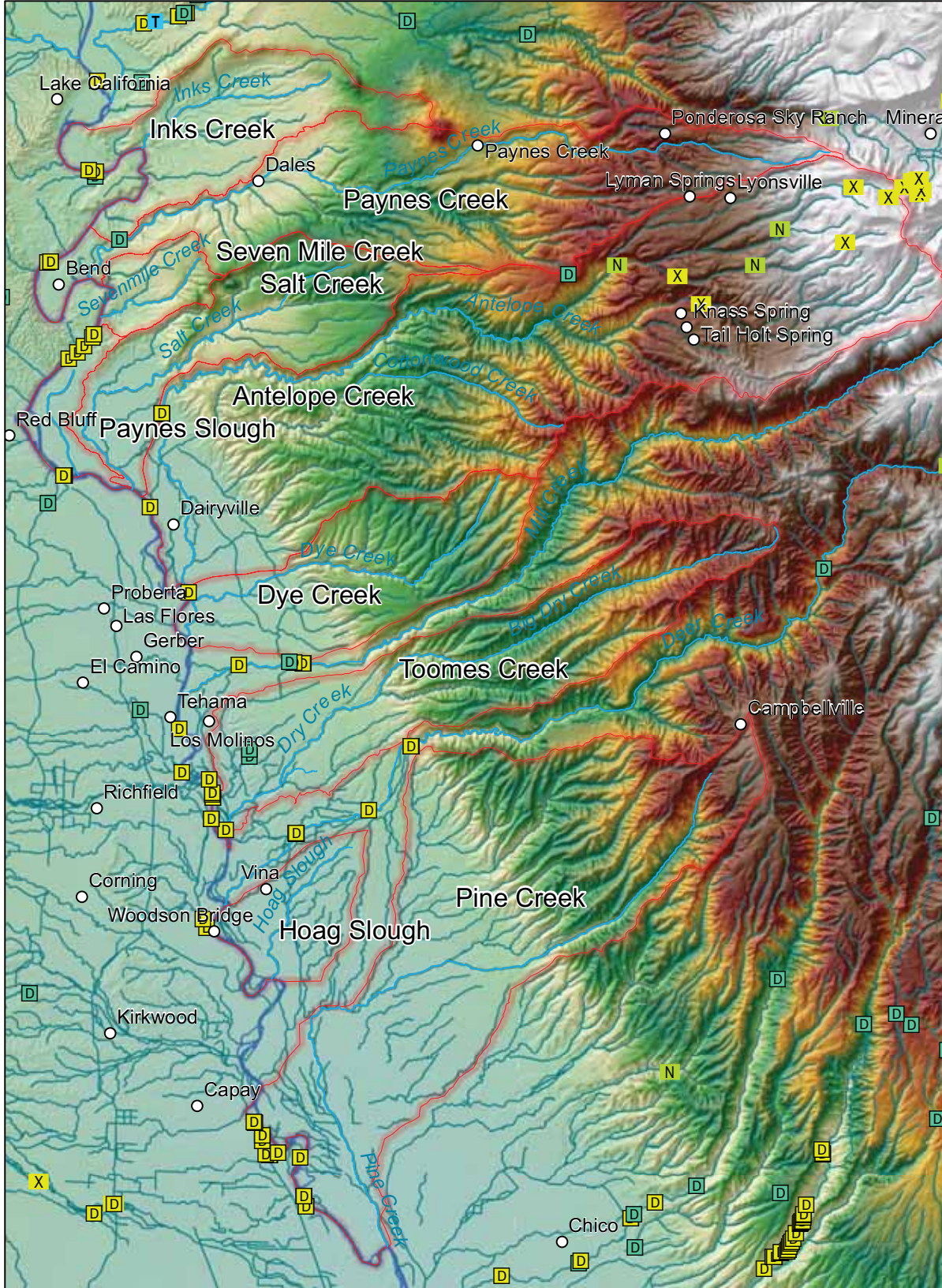
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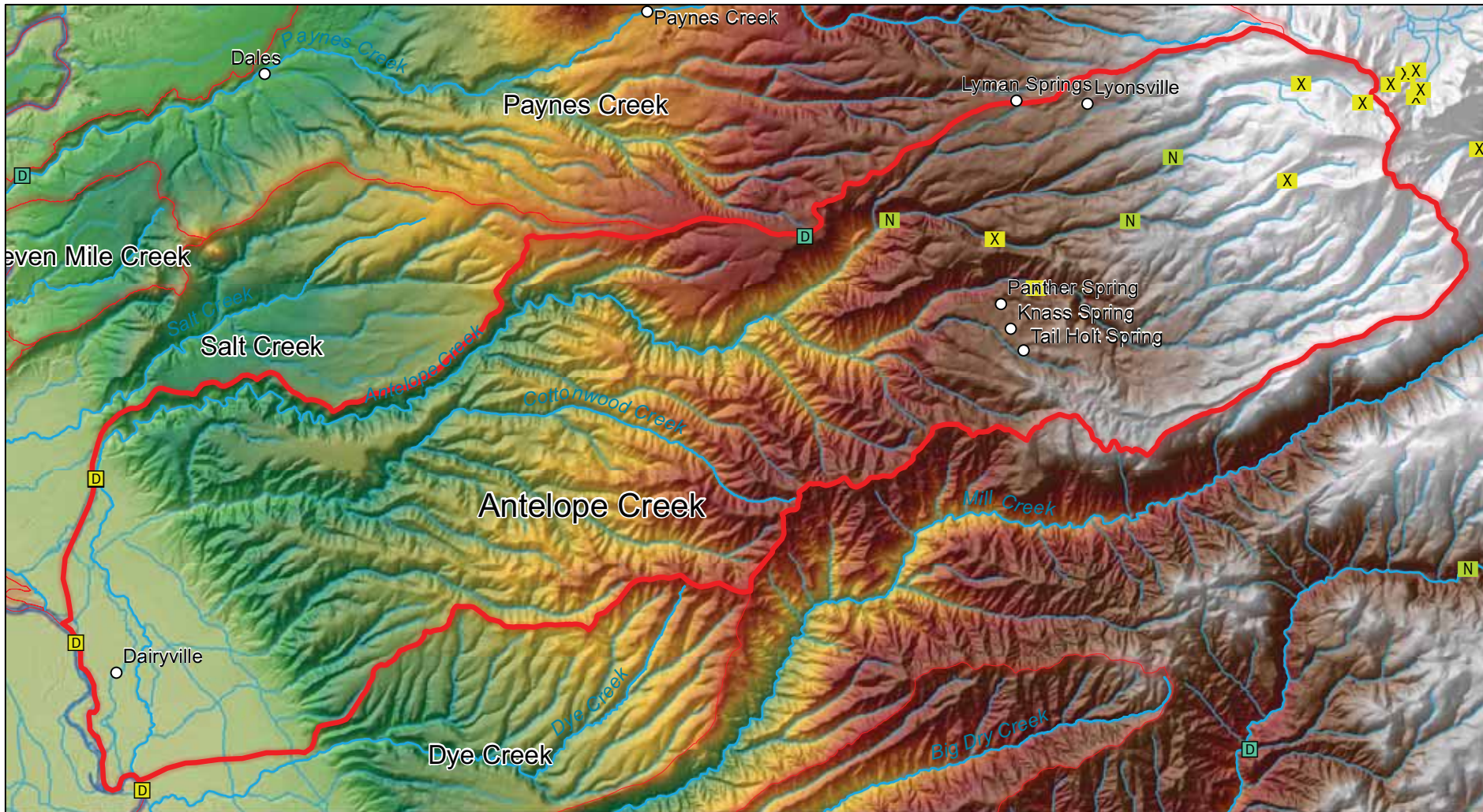
#### Site Type

-  Dam
-  Diversion
-  Fish trap
-  Non-structural
-  Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

 Watershed Boundary





# Tehama East Watershed Assessment

Passage Assessment Database  
Antelope Creek



Tehama County Resource Conservation District  
(c) 2010

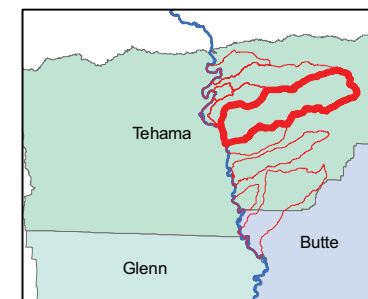
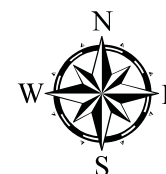
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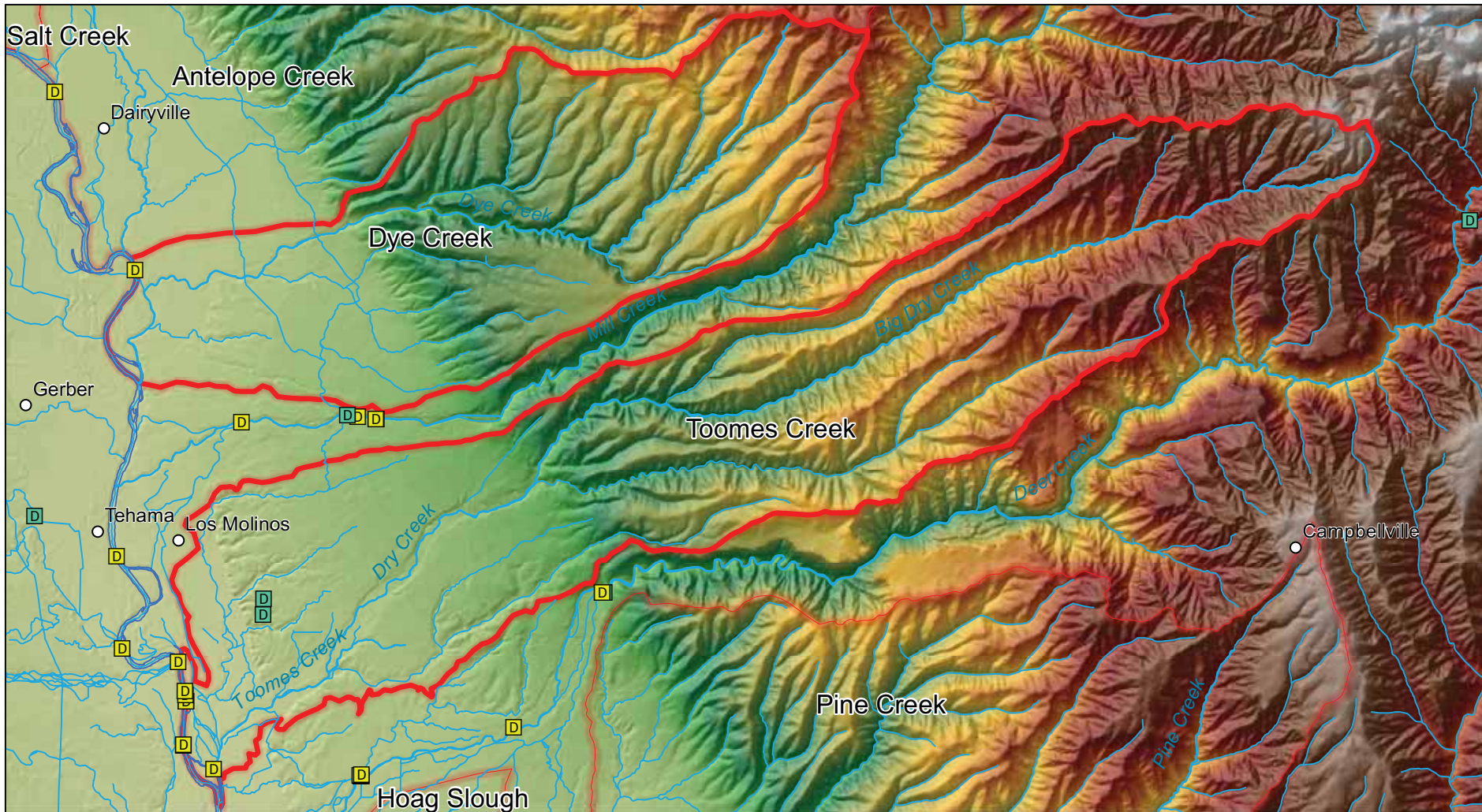
Site Type

- Dam
- Diversion
- Fish trap
- Non-structural
- Road crossing

<http://www.calfish.org/DataandMaps/CalFishDataDownloads/tabid/93/Default.aspx>

Watershed Boundary





# Tehama East Watershed Assessment






Passage Assessment Database  
Dye and Toomes Creeks




Tehama County Resource  
Conservation District  
(c) 2010

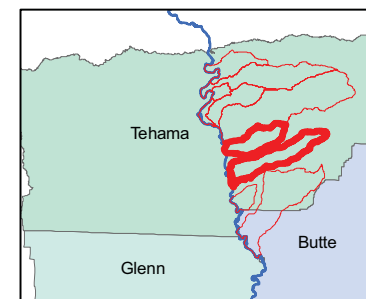
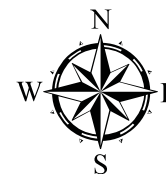
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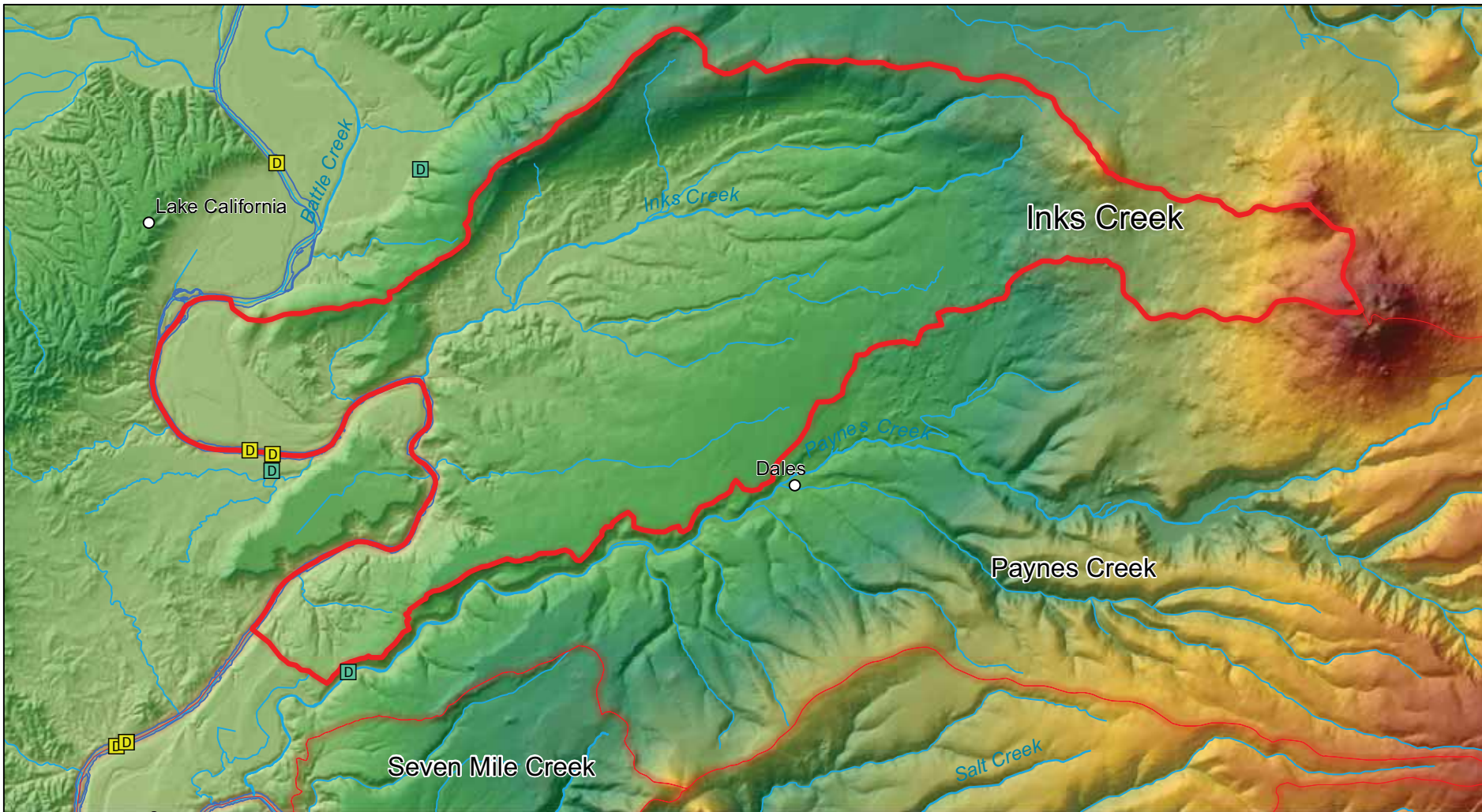
Site Type

-  Dam
-  Diversion
-  Fish trap
-  Non-structural
-  Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

 Watershed Boundary





# Tehama East Watershed Assessment

Passage Assessment Database  
Inks Creek



Tehama County Resource  
Conservation District  
(c) 2010

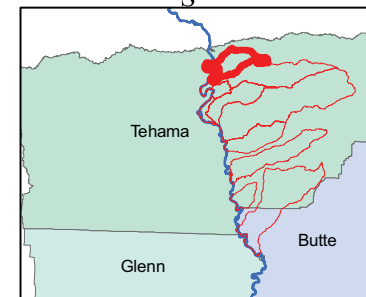
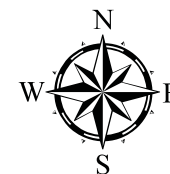
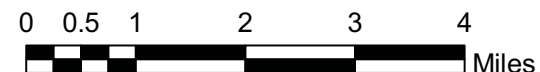
## Legend

Site Type

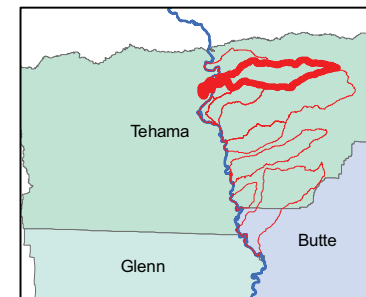
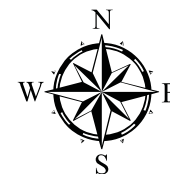
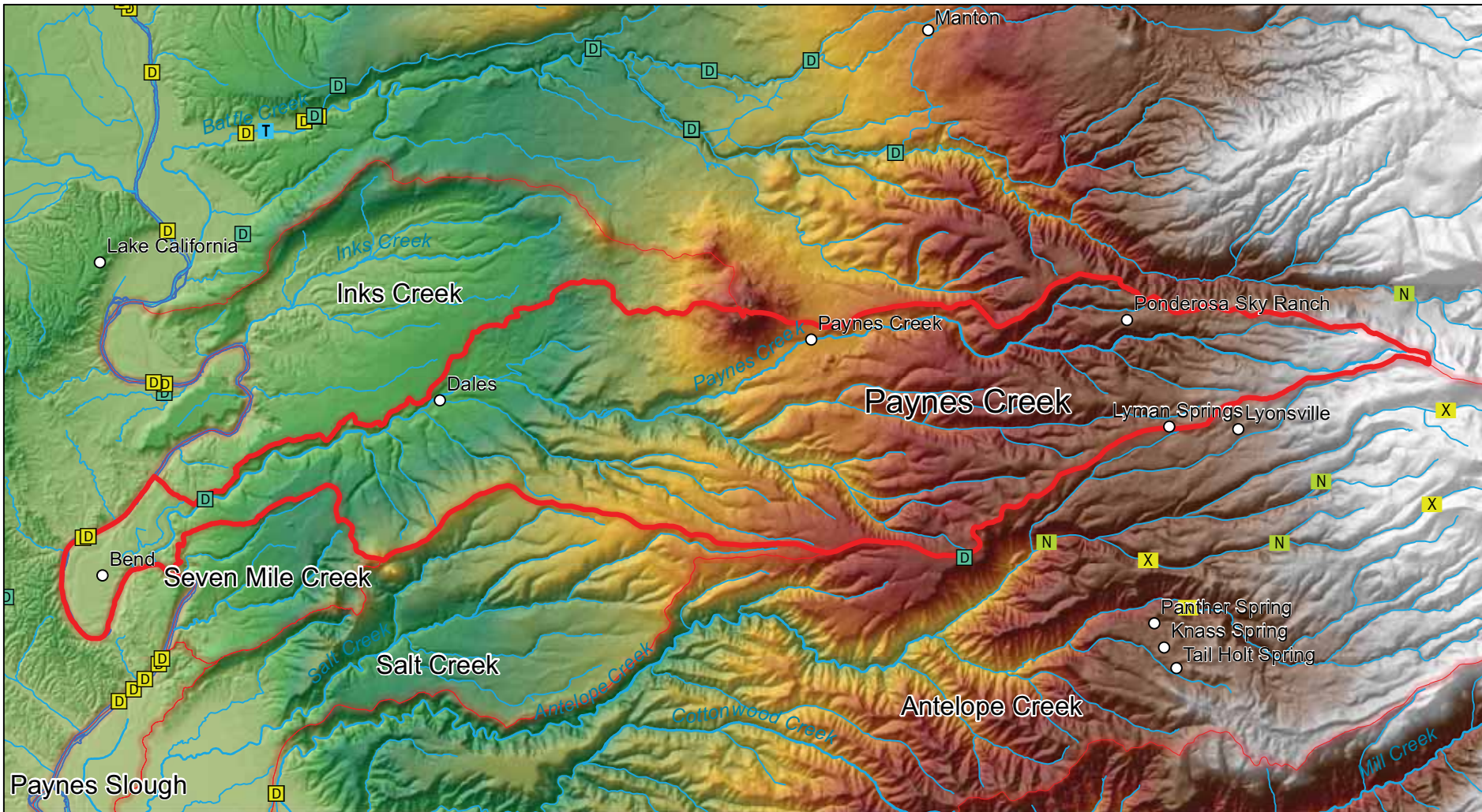
- Dam
- Diversion
- Fish trap
- Non-structural
- Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

Watershed Boundary







# Tehama East Watershed Assessment

Passage Assessment Database  
Paynes Creek



Tehama County Resource Conservation District  
(c) 2010

## Legend

Site Type

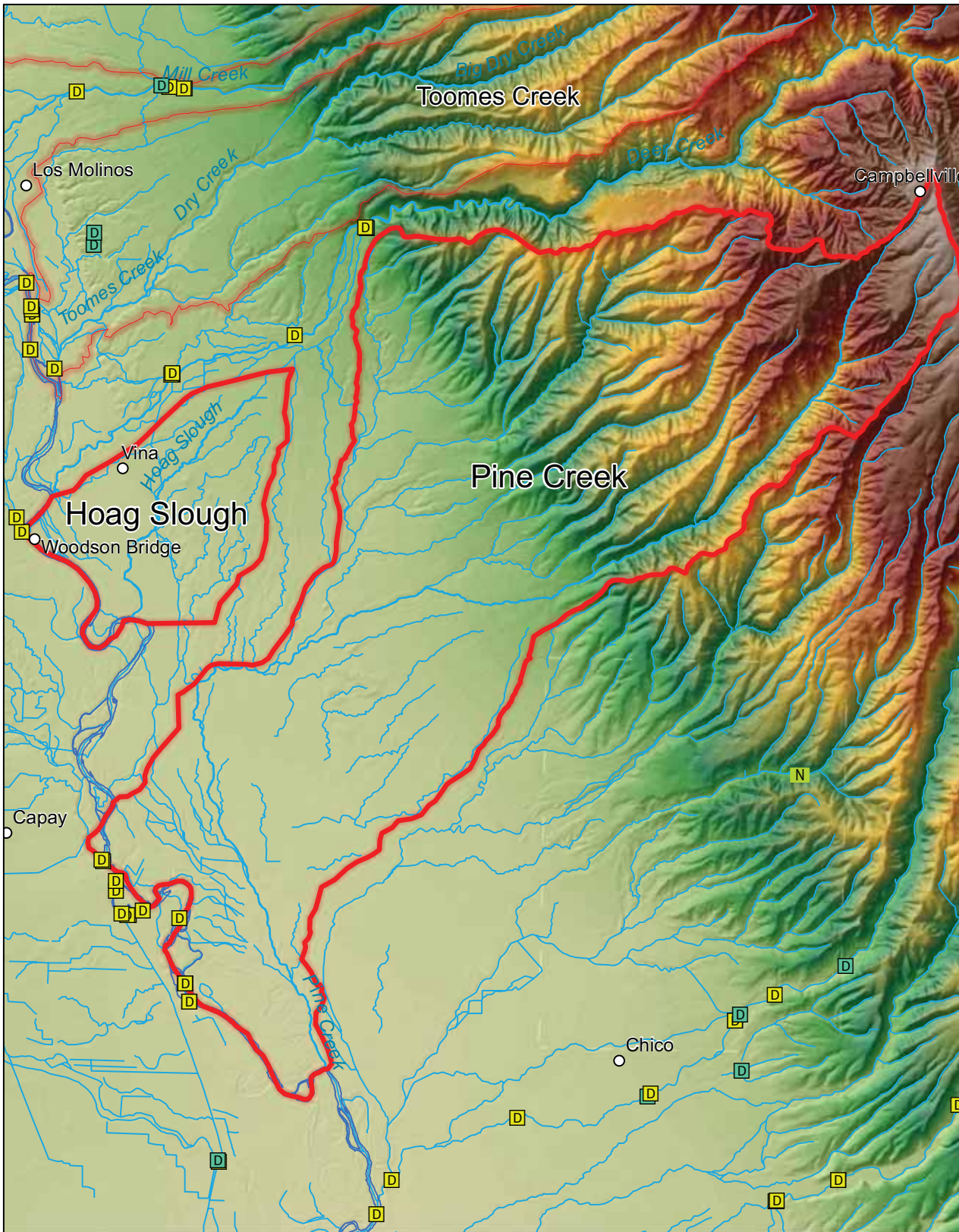
- Dam
- Diversion
- Fish trap
- Non-structural
- Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

Watershed Boundary

# Tehama East Watershed Assessment

Passage Assessment Database  
Hoag Slough and Pine Creek



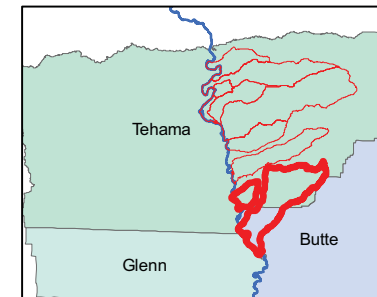
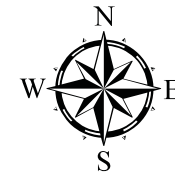
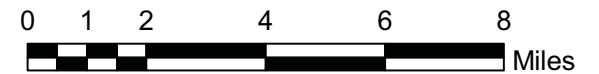
## Legend

### Site Type

- Dam
- Diversion
- Fish trap
- Non-structural
- Road crossing

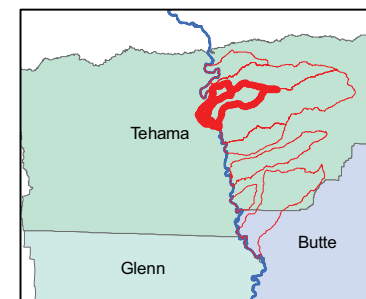
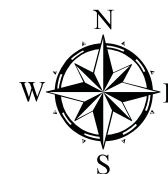
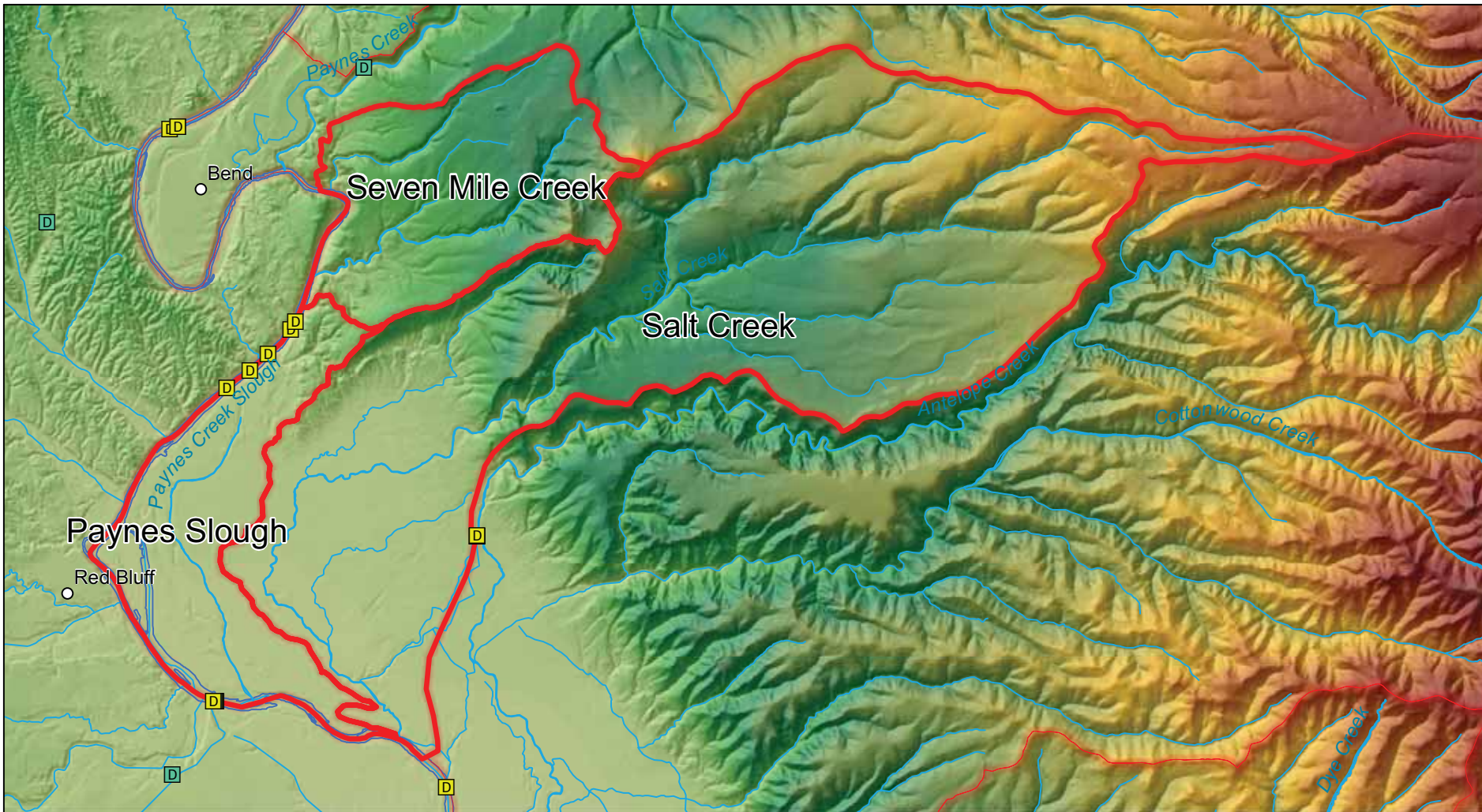
<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

Watershed Boundary



Tehama County Resource  
Conservation District  
(c) 2010





# Tehama East Watershed Assessment

Passage Assessment Database  
Paynes Slough,  
Salt, and Seven Mile Creeks



Tehama County Resource  
Conservation District  
(c) 2010

## Legend

Site Type

- Dam
- Diversion
- Fish trap
- Non-structural
- Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

Watershed Boundary

Maps by Characteristics

Riparian Vegetation

Study Area .....	183
Antelope Creek Watershed .....	184
Dye and Toomes Creek Watersheds .....	185
Inks Creek Watershed .....	186
Paynes Creek Watershed .....	187
Pine Creek and Hoag Slough Watersheds.....	188
Paynes Slough, Salt, and Creek Watersheds .....	189

# Tehama East Watershed Assessment

## Riparian Vegetation in Hardwood Rangelands








### Tehama East Watersheds

"Hardwood rangelands below 5000' elevation were originally mapped by Dr. Norm Pillsbury (Cal Poly SLO) under contract by California Department of Forestry and Fire Protection (CDF). Polygons were delineated on 1981 1:24,000 scale black and white air photos, transferred to 1:100,000 scale base maps, and digitized. The data were updated by Pacific Meridian Resources under contract from CDF using 1990 LANDSAT TM imagery. This GRID format data represent a portion of the base classification data used to update delineated polygons for a 375 meter buffer around perennial streams. Each pixel is coded based on life form (e.g. riparian, hardwood, conifer, shrub).


In response to concerns over the extent and condition of California's hardwood rangelands, the Board of Forestry asked the University of California, California Department of Forestry and Fire Protection, and the California Department of Fish and Game to develop a program of research, education, and monitoring designed to conserve hardwood rangelands."

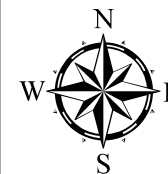
Quoted from: <http://frap.cdf.ca.gov/data/frapgisdata/output/riparian.txt>

#### KEY

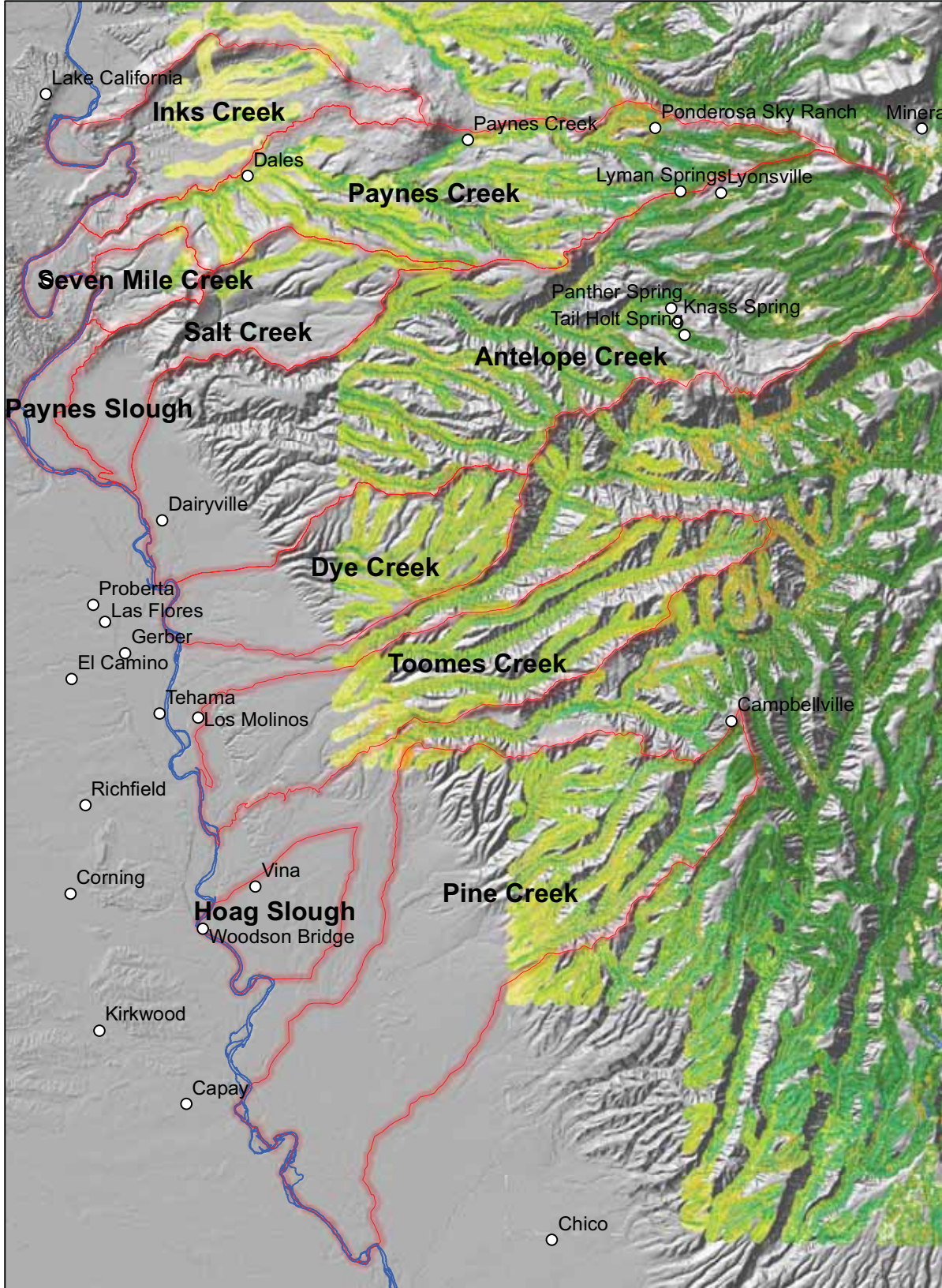
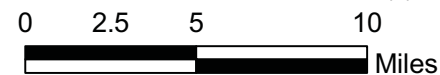
-  Riparian
-  Hardwood Range w/<70% Canopy
-  Shrub
-  Conifer
-  Herbaceous
-  Water
-  Other: Urban, Marsh, Rock, Barren

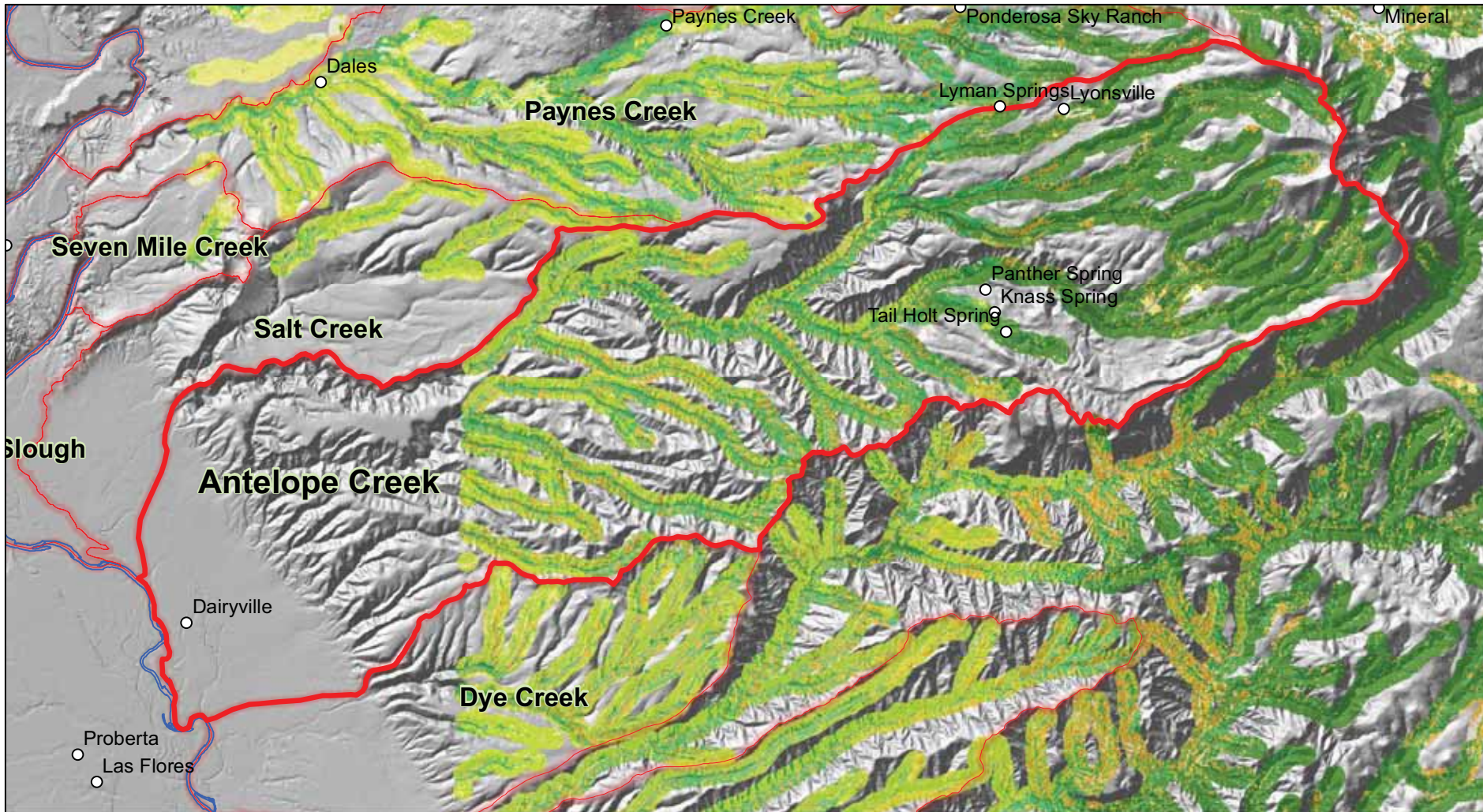
<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=riparian>

 Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010



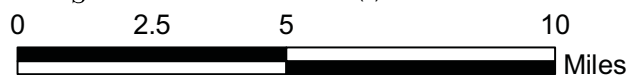


# Tehama East Watershed Assessment

Riparian Vegetation  
in Hardwood Rangelands  
Antelope Creek



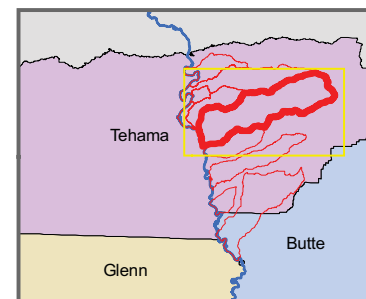
Tehama County Resource Conservation District  
(c) 2010

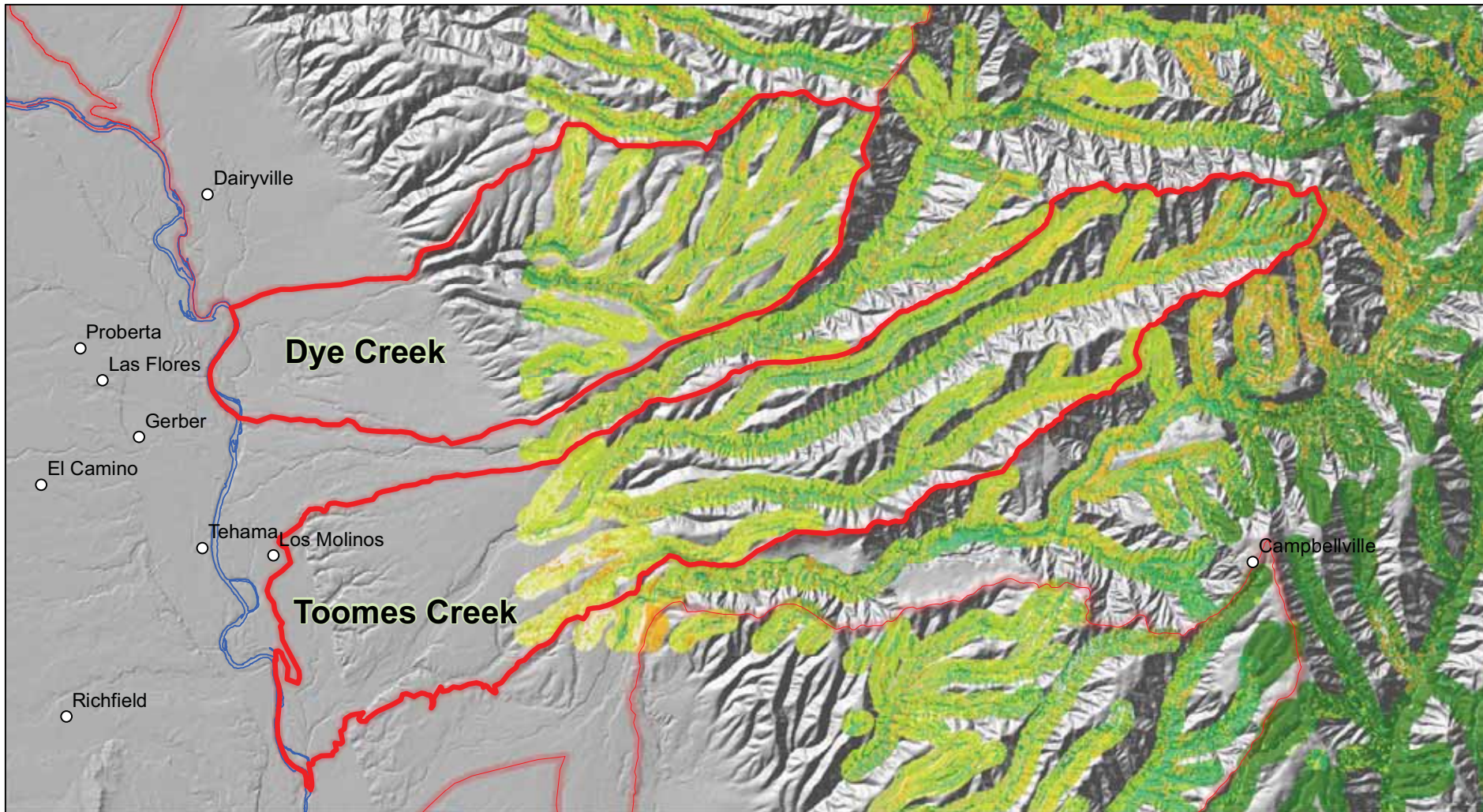


## KEY

- Riparian
- Hardwood Range w/<70% Canopy
- Shrub
- Conifer
- Herbaceous
- Water
- Other: Urban, Marsh, Rock, Barren

Watershed Boundary



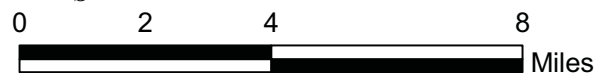


# Tehama East Watershed Assessment

Riparian Vegetation  
in Hardwood Rangelands  
Dye and Toomes Creeks



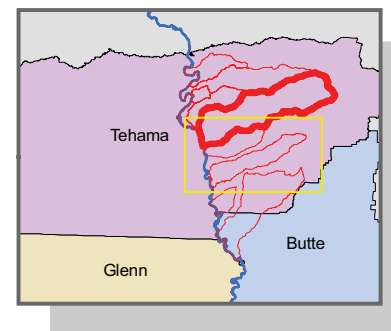
Tehama County Resource Conservation District  
(c) 2010

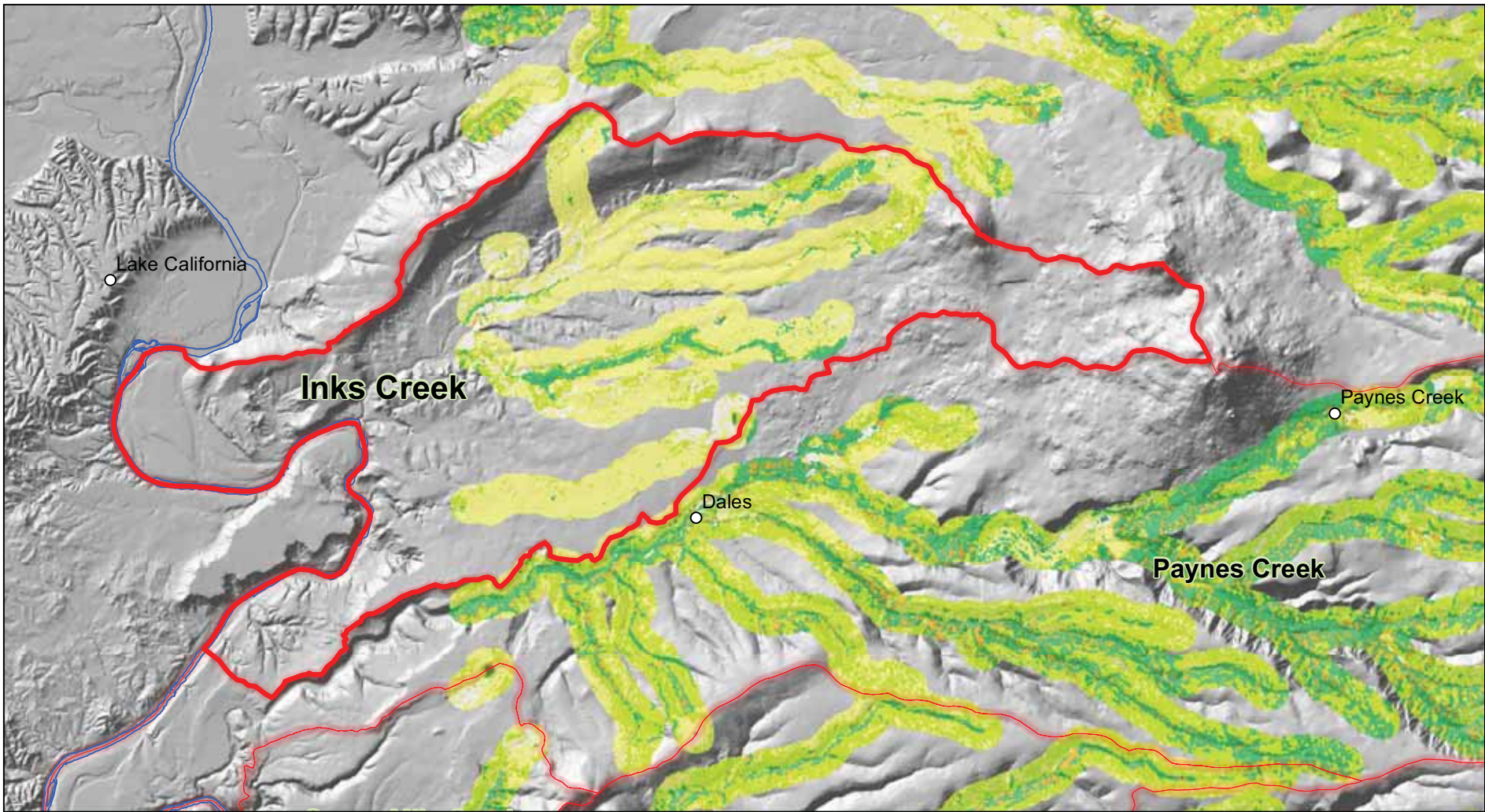


## KEY

- Riparian
- Hardwood Range w/<70% Canopy
- Shrub
- Conifer
- Herbaceous
- Water
- Other: Urban, Marsh, Rock, Barren

Watershed Boundary



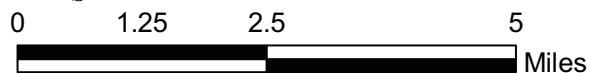


# Tehama East Watershed Assessment

Riparian Vegetation  
in Hardwood Rangelands  
Inks Creek



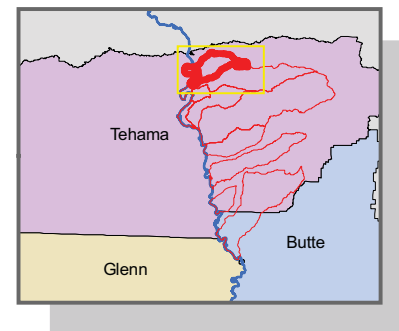
Tehama County Resource Conservation District  
(c) 2010



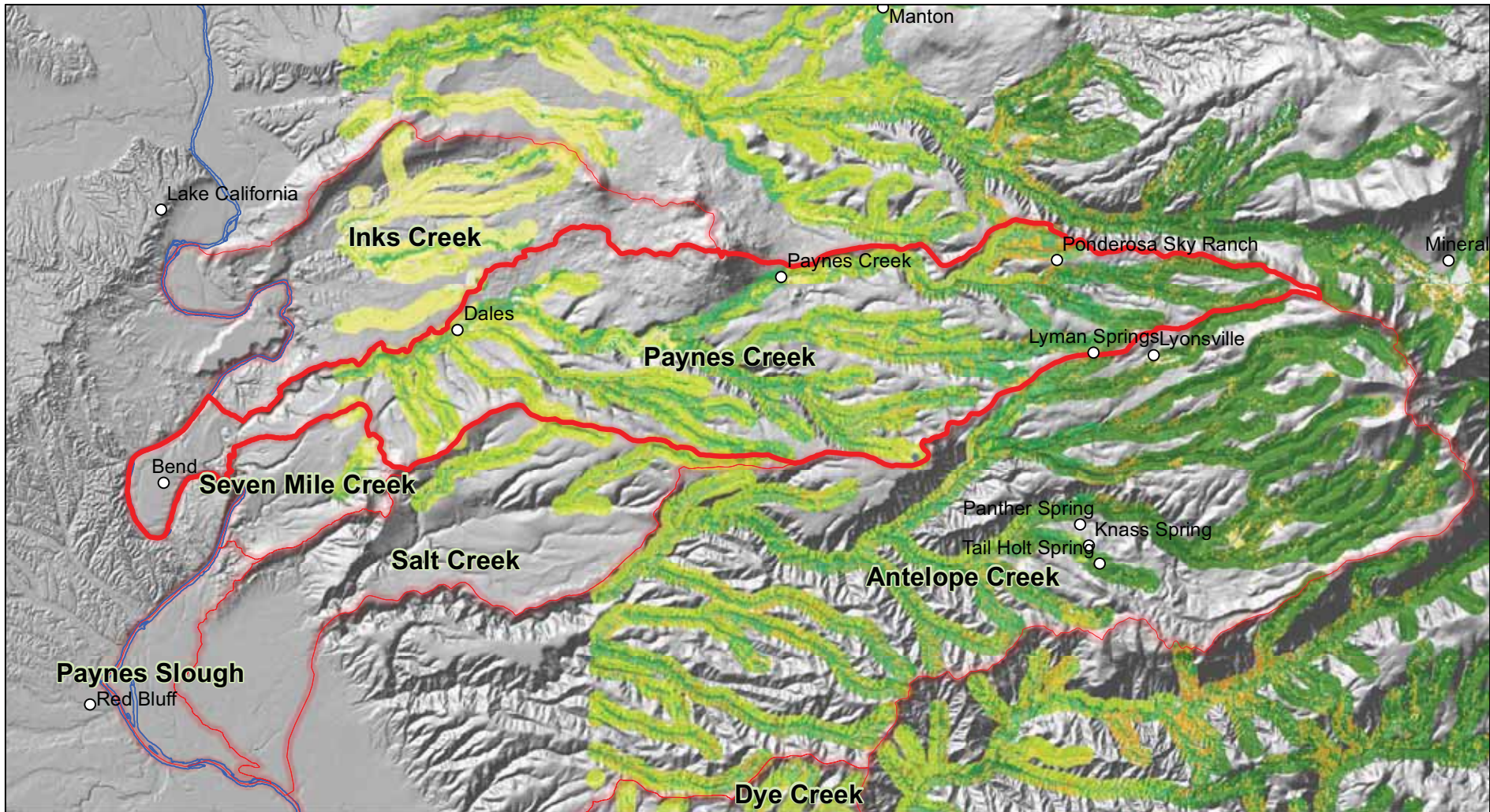
## KEY

- Riparian
- Hardwood Range w/<70% Canopy
- Shrub
- Conifer
- Herbaceous
- Water
- Other: Urban, Marsh, Rock, Barren

Watershed Boundary





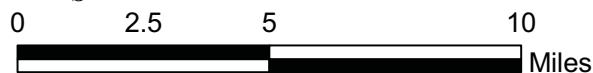


# Tehama East Watershed Assessment

Riparian Vegetation  
in Hardwood Rangelands  
Paynes Creek



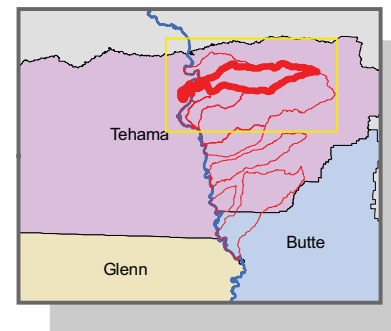
Tehama County Resource Conservation District  
(c) 2010



## KEY

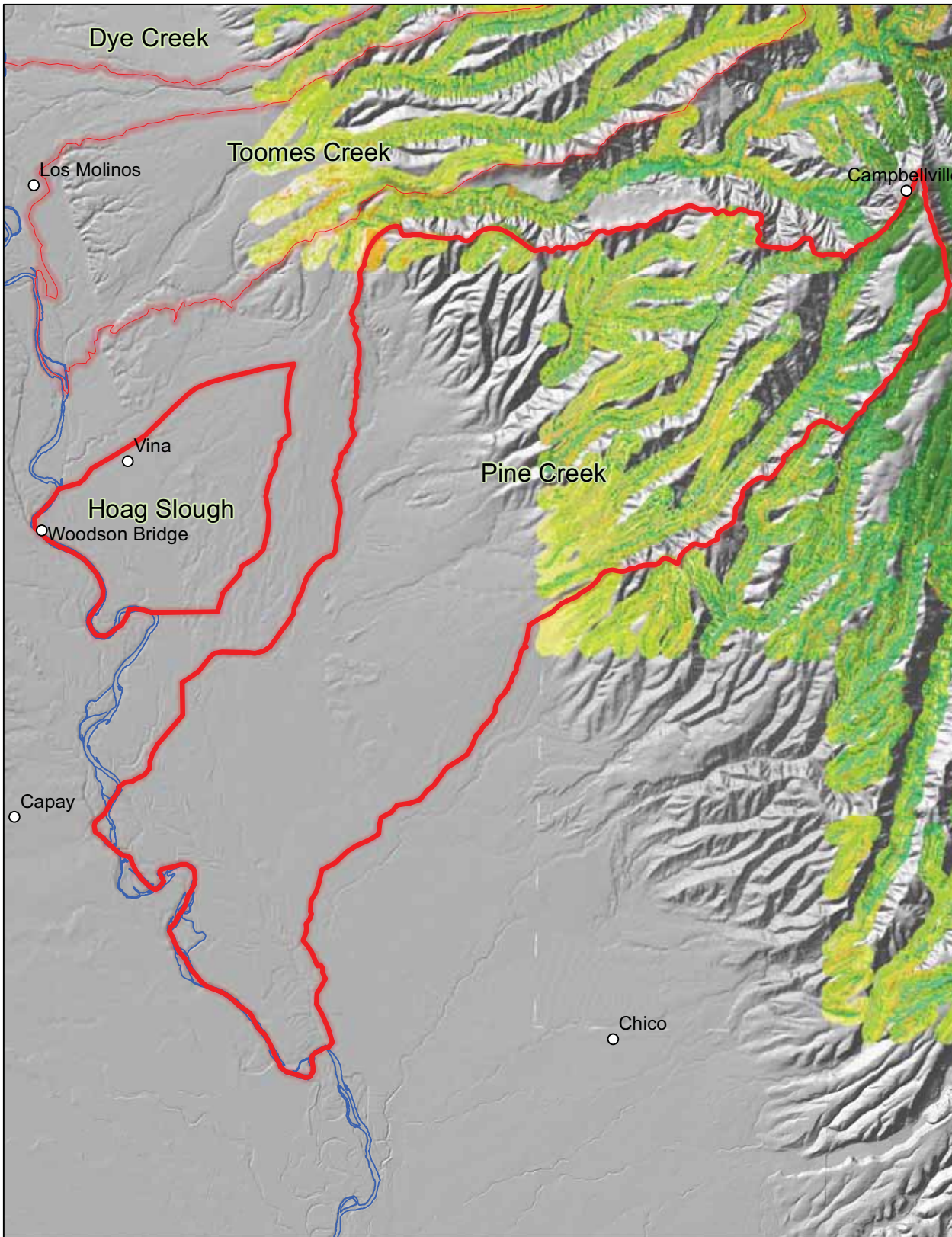
- Riparian
- Hardwood Range w/<70% Canopy
- Shrub
- Conifer
- Herbaceous
- Water
- Other: Urban, Marsh, Rock, Barren

Watershed Boundary











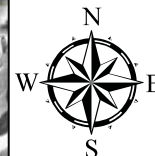
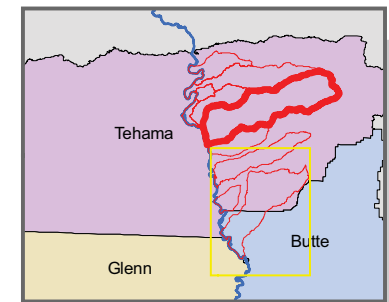
# Tehama East Watershed Assessment

## Riparian Vegetation in Hardwood Rangelands Antelope Creek

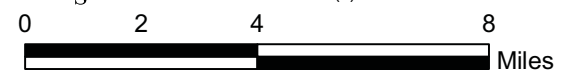


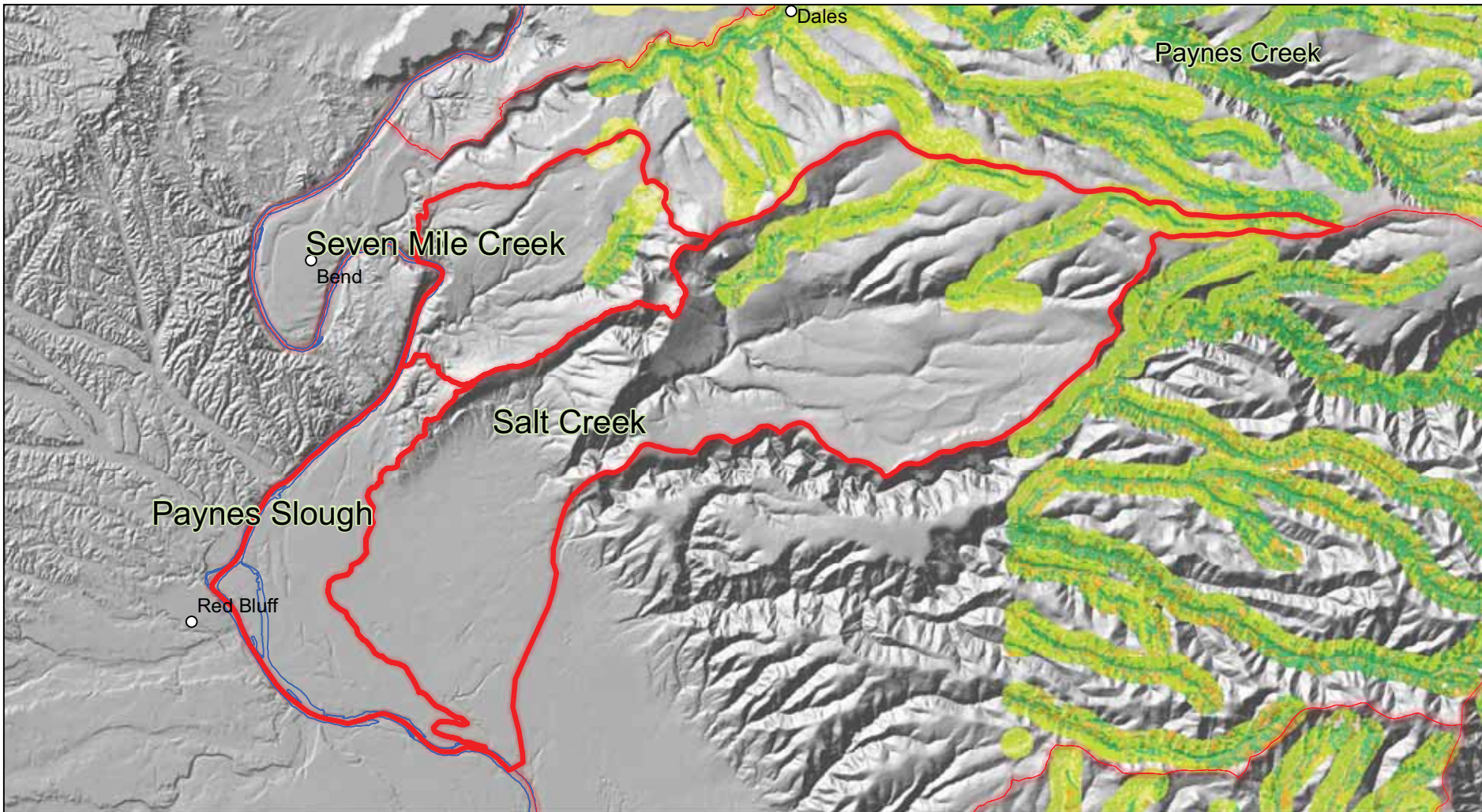
### KEY

-  Riparian
-  Hardwood Range w/<70% Canopy
-  Shrub
-  Conifer
-  Herbaceous
-  Water
-  Other: Urban, Marsh, Rock, Barren
-  Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010



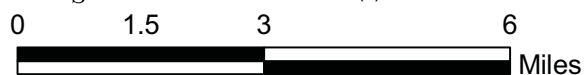


# Tehama East Watershed Assessment

Riparian Vegetation  
in Hardwood Rangelands  
Antelope Creek



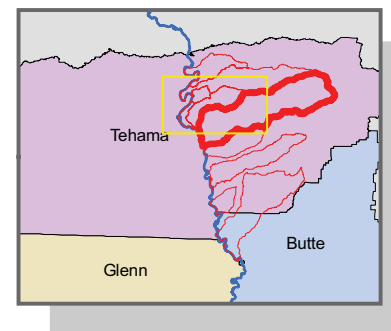
Tehama County Resource Conservation District  
(c) 2010



## KEY

- Riparian
- Hardwood Range w/<70% Canopy
- Shrub
- Conifer
- Herbaceous
- Water
- Other: Urban, Marsh, Rock, Barren

Watershed Boundary



Maps by Characteristics

Roads

Study Area .....	191
Antelope Creek Watershed .....	192
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Inks Creek Watershed .....	194
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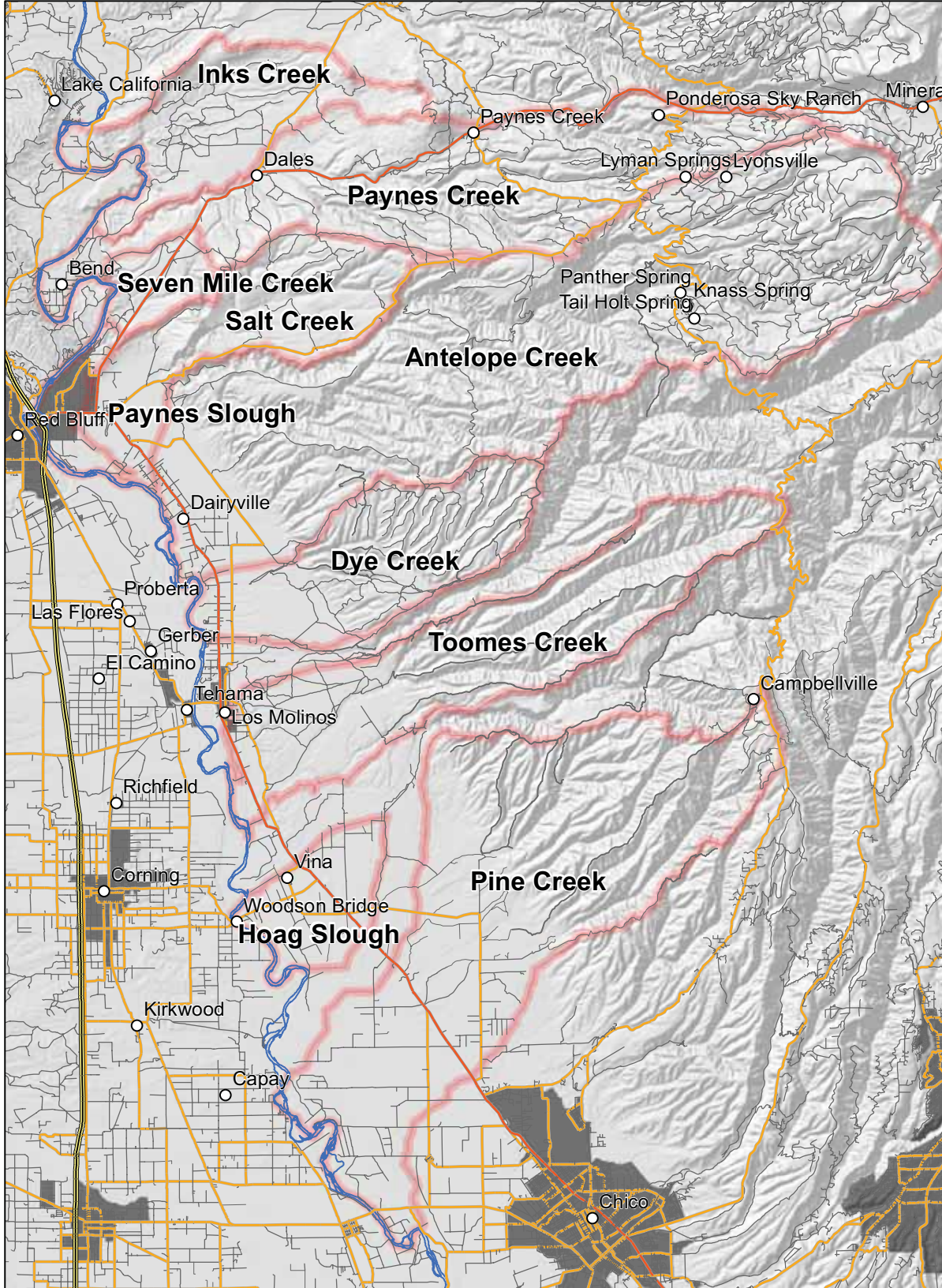
# Tehama East Watershed Assessment

## Roadways

### Tehama East Watersheds

"Vehicles and the highways affect wildlife in several significant ways. Road kills account for substantial mortality of many species, including deer, owls, and snakes. More deer are killed by collisions with vehicles than by hunting. Habitat is eliminated and fragmented by roads and highways. Oil and other chemicals from roads pollute aquatic ecosystems. And invasive species are often introduced along highways."

Quoted from:  
[www.dfg.ca.gov/wildlife/WAP/docs/report/ch6-strengthening.pdf](http://www.dfg.ca.gov/wildlife/WAP/docs/report/ch6-strengthening.pdf) - 2007-08-20

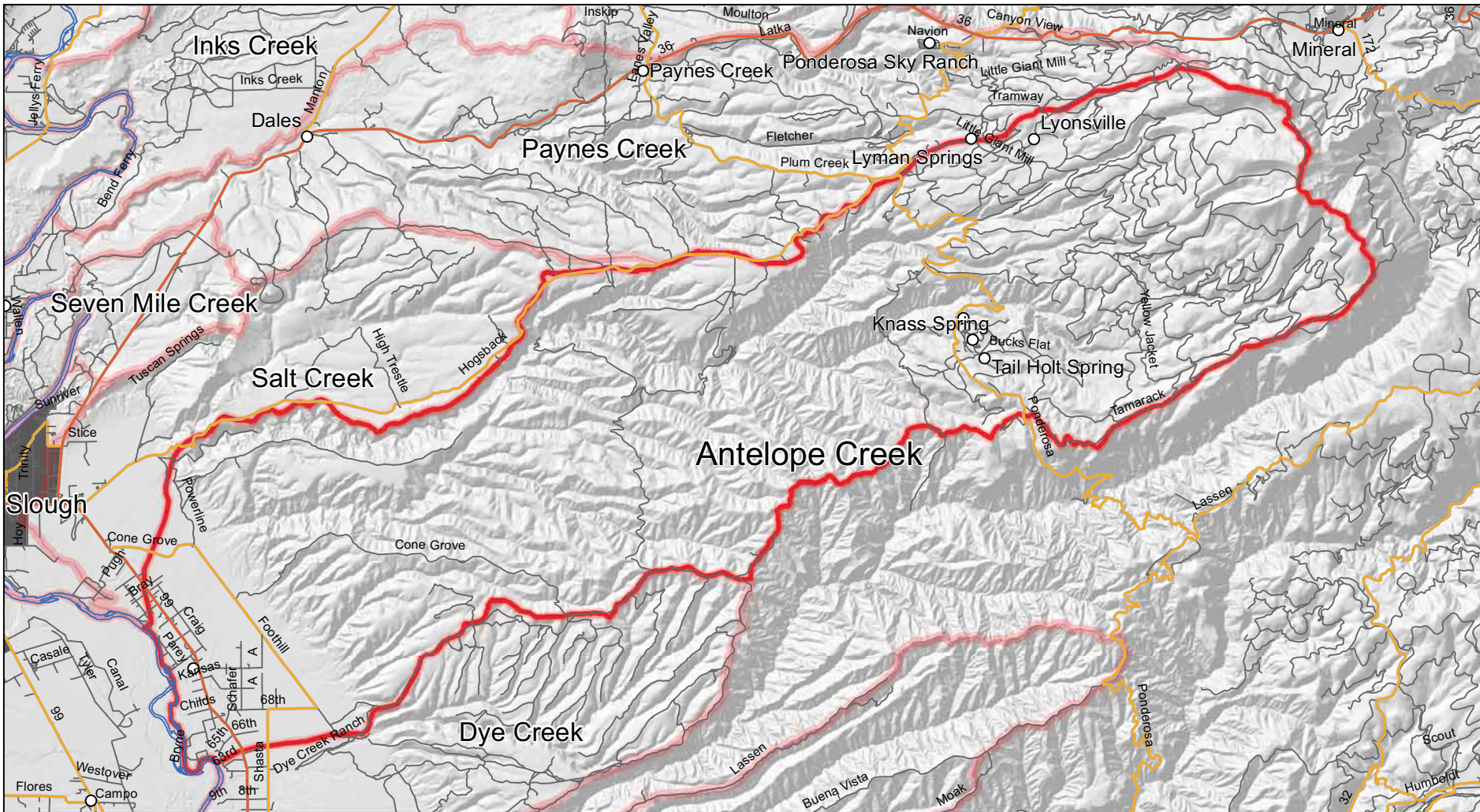


### Legend

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Other Road
-  Ramp
-  Ferry
-  Pedestrian Way
-  Urban Areas
-  Watershed Boundary

ESRI





# Tehama East Watershed Assessment

## Roadways Antelope Creek

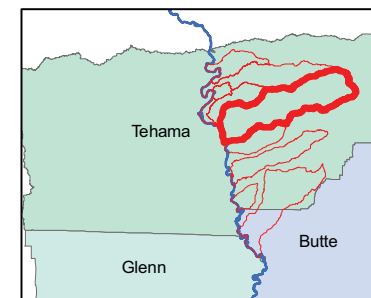
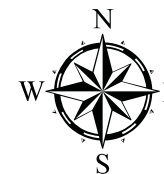


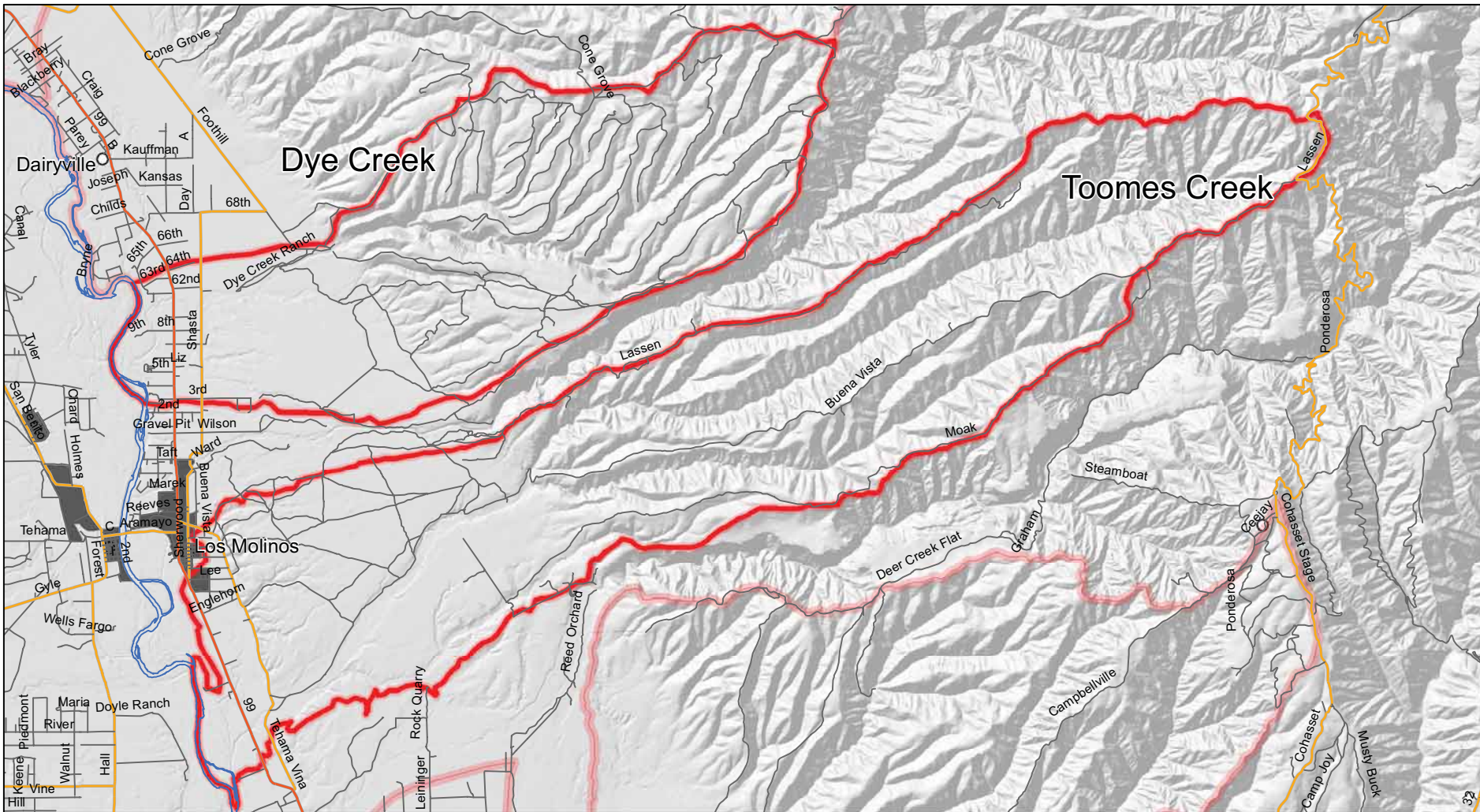
Tehama County Resource  
Conservation District  
(c) 2010



### Legend

- |                |            |                |                    |
|----------------|------------|----------------|--------------------|
| Limited Access | Local Road | Ramp           | Urban Areas        |
| Highway        | Minor Road | Ferry          | Watershed Boundary |
| Major Road     | Other Road | Pedestrian Way |                    |



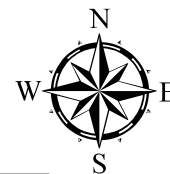


# Tehama East Watershed Assessment

Roadways  
Dye and Toomes Creeks

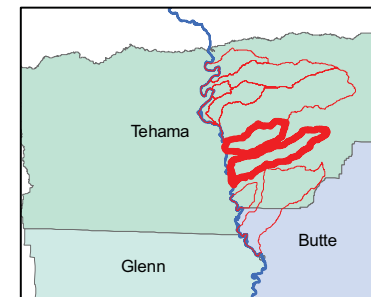


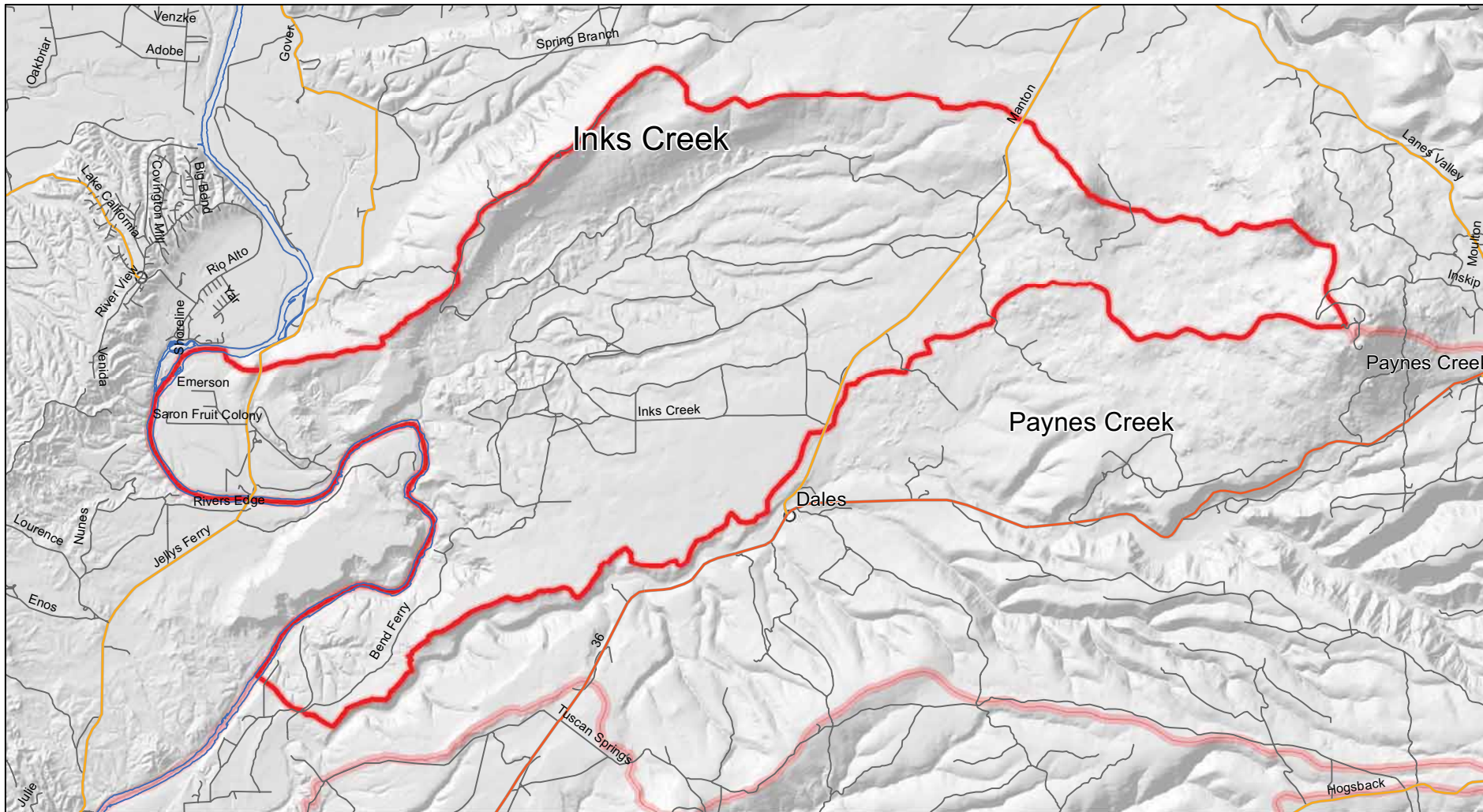
Tehama County Resource  
Conservation District  
(c) 2010



## Legend

- |  |                |  |            |  |                |  |                    |
|--|----------------|--|------------|--|----------------|--|--------------------|
|  | Limited Access |  | Local Road |  | Ramp           |  | Urban Areas        |
|  | Highway        |  | Minor Road |  | Ferry          |  | Watershed Boundary |
|  | Major Road     |  | Other Road |  | Pedestrian Way |  |                    |





# Tehama East Watershed Assessment

Roadways  
Inks Creek

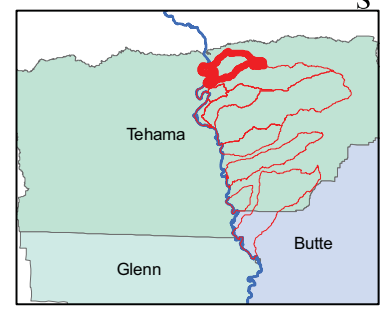


Tehama County Resource  
Conservation District  
(c) 2010

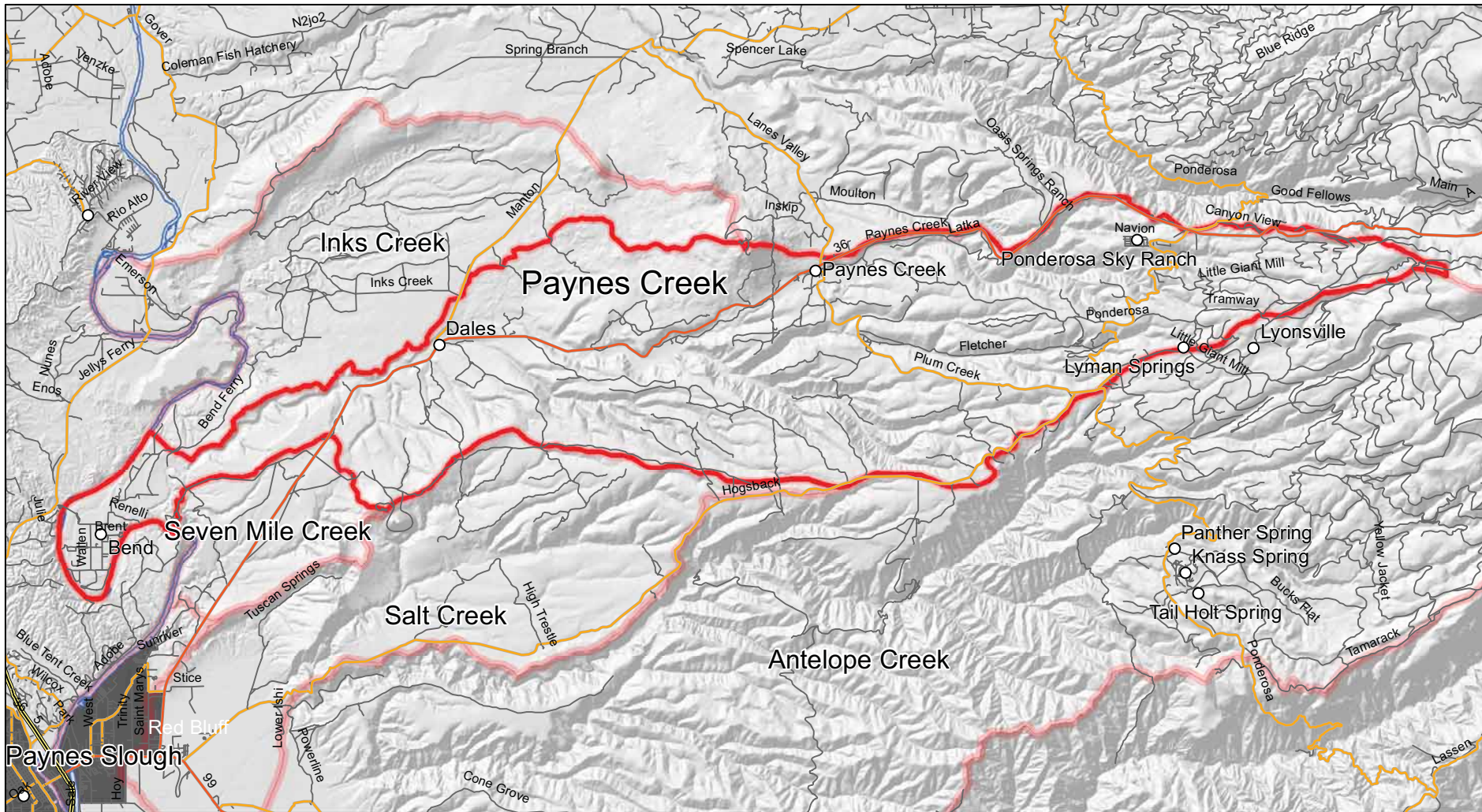


## Legend

- |                |            |                |                    |
|----------------|------------|----------------|--------------------|
| Limited Access | Local Road | Ramp           | Urban Areas        |
| Highway        | Minor Road | Ferry          | Watershed Boundary |
| Major Road     | Other Road | Pedestrian Way |                    |





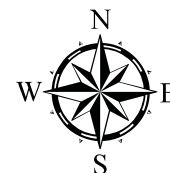


# Tehama East Watershed Assessment

Roadways  
Paynes Creek

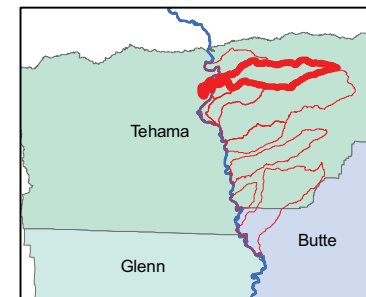


Tehama County Resource  
Conservation District  
(c) 2010



## Legend












- |  |                |  |            |  |                |  |                    |
|--|----------------|--|------------|--|----------------|--|--------------------|
|  | Limited Access |  | Local Road |  | Ramp           |  | Urban Areas        |
|  | Highway        |  | Minor Road |  | Ferry          |  | Watershed Boundary |
|  | Major Road     |  | Other Road |  | Pedestrian Way |  |                    |



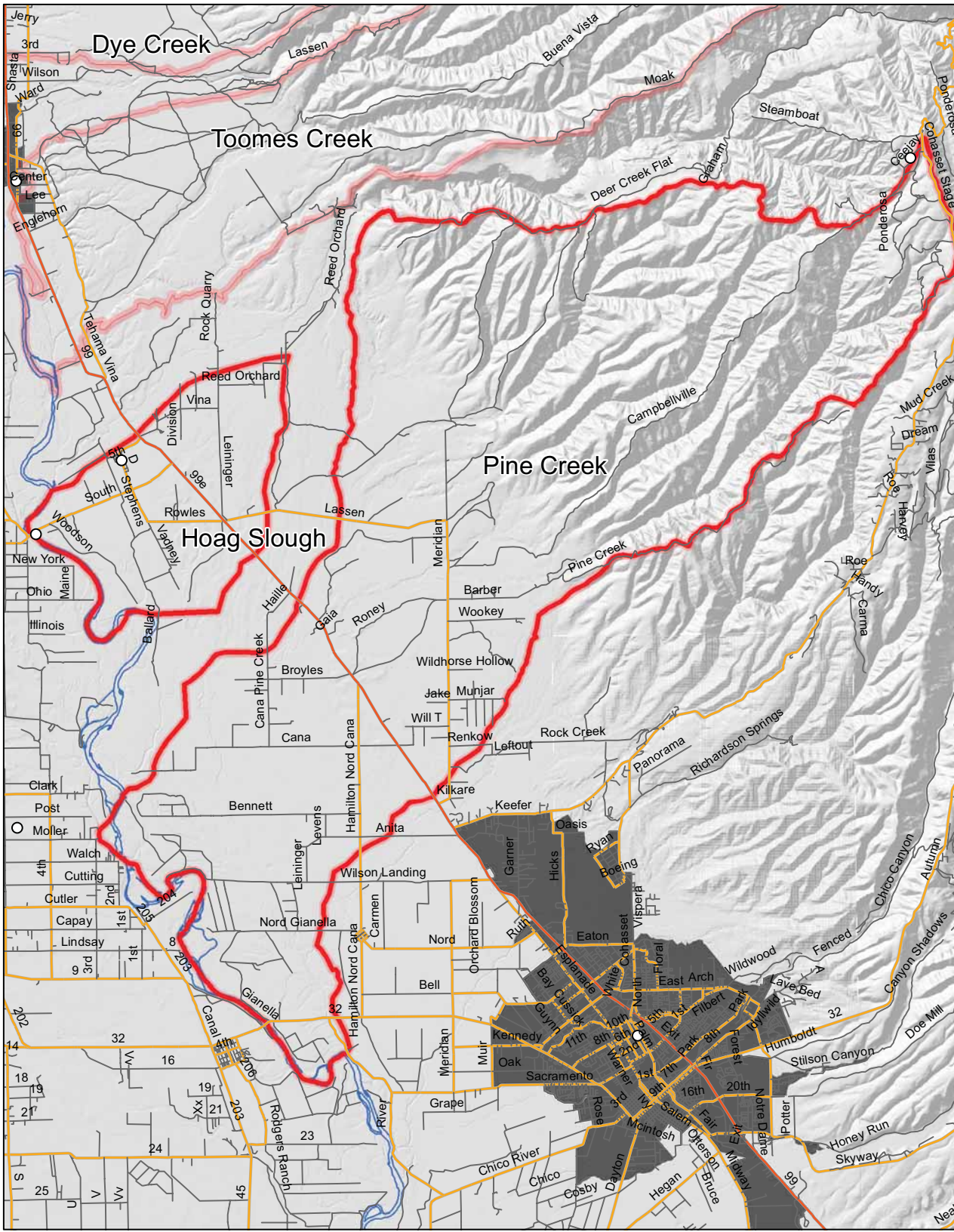
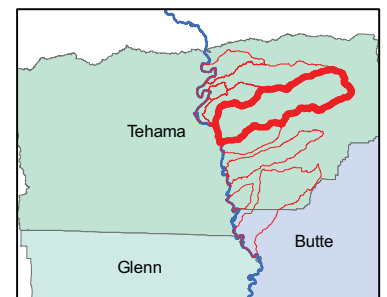
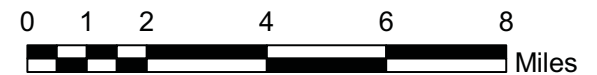
# Tehama East Watershed Assessment

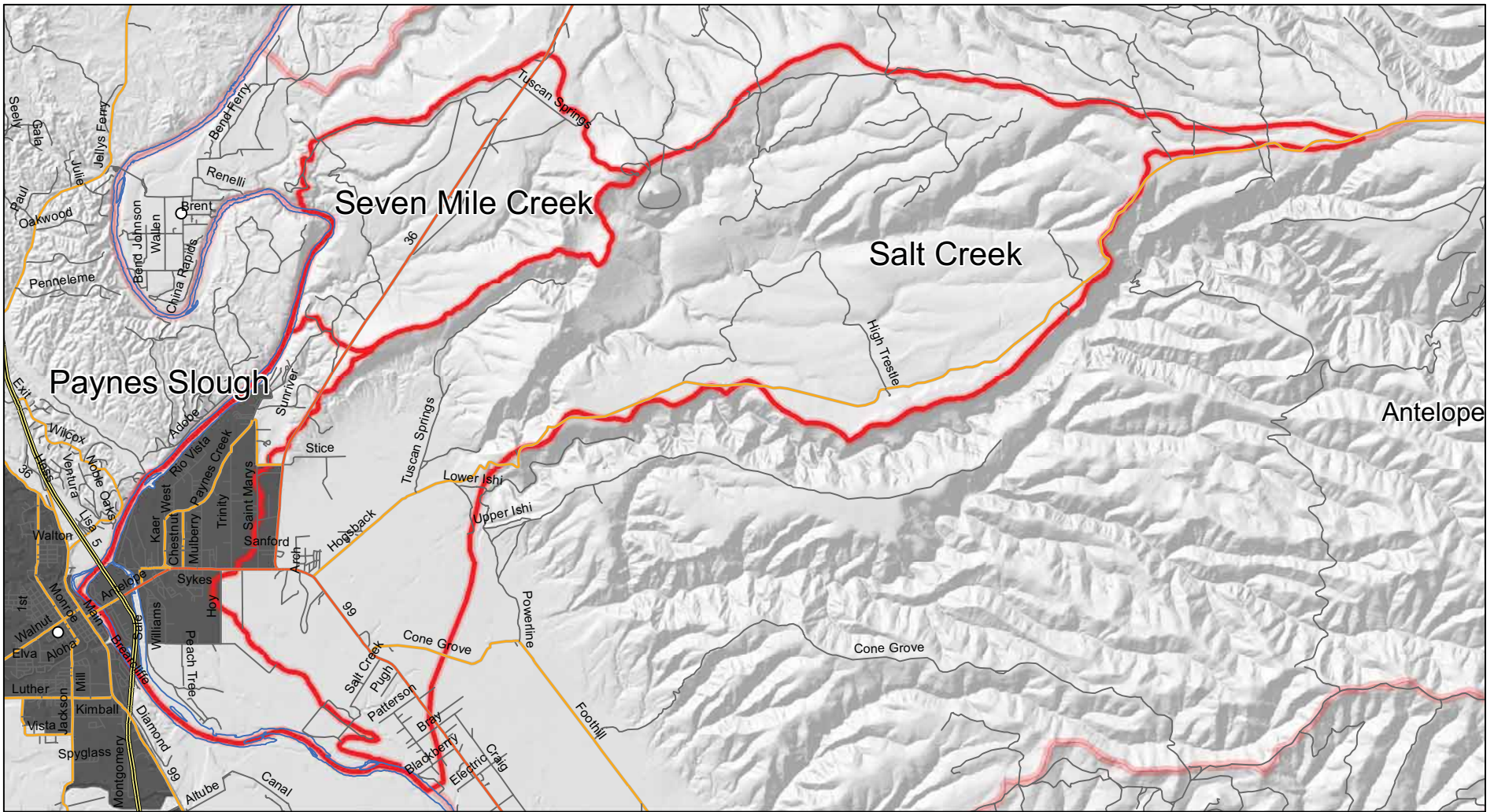
Roadways  
Hoag Slough and Pine Creek

## Legend

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Other Road
-  Ramp
-  Ferry
-  Pedestrian Way
-  Urban Areas
-  Watershed Boundary

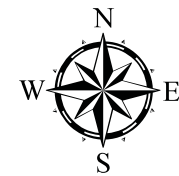
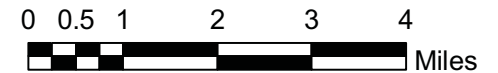
Tehama County Resource  
Conservation District  
(c) 2010





# Tehama East Watershed Assessment

Roadways  
Paynes Slough,  
Salt, and Seven Mile Creeks

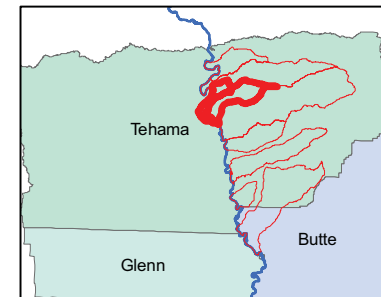


## Legend

- |  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |



Tehama County Resource  
Conservation District  
(c) 2010



Maps by Characteristics

Soils: Highly Erodible Lands

Study Area .....	199
Antelope Creek Watershed .....	200
Dye and Toomes Creek Watersheds .....	201
Inks Creek Watershed .....	202
Paynes Creek Watershed .....	203
Pine Creek and Hoag Slough Watersheds.....	204
Paynes Slough, Salt, and Creek Watersheds .....	205

# Tehama East Watershed Assessment

## NRCS Soils Highly Erodible Soils Tehama East Watersheds

### Highly Erodible Land - Highly Erodible Soil Map Unit List

Definition. Highly erodible land is defined by the Sodbuster, Conservation Reserve, and Conservation Compliance parts of the Food Security Act of 1985 and the Food, Agriculture, Conservation, and Trade Act of 1990. Determinations for highly erodible land are based on an erodibility index as defined in the National Food Security Act Manual.


Policy. Lists of highly erodible and potential highly erodible map units are maintained in the field office technical guide. Policy and procedures for developing and maintaining the lists are given in part 511 of the National Food Security Act Manual.

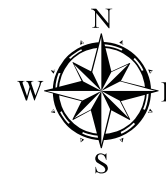
Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part622.html>

### KEY

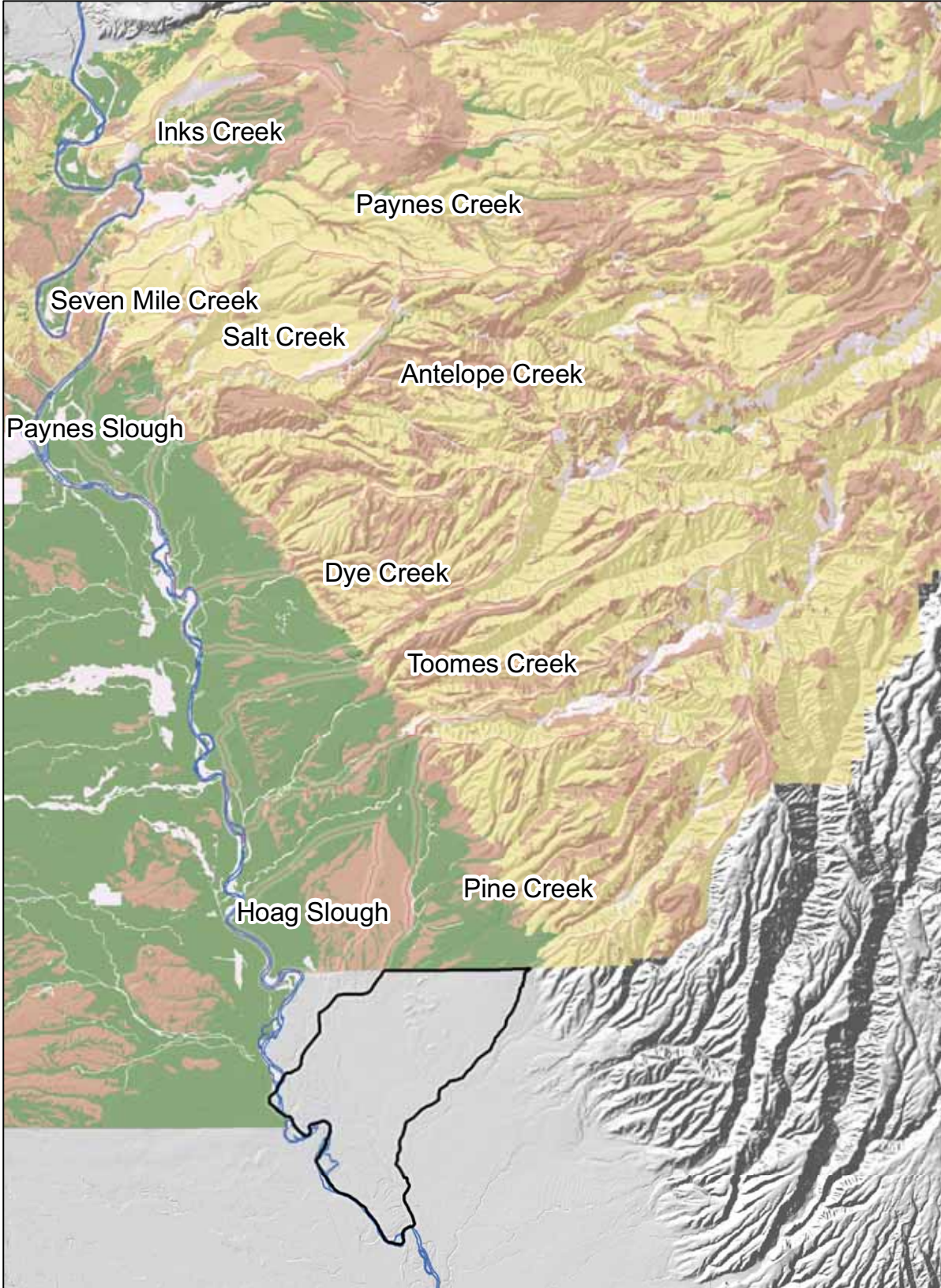
#### Highly Erodible Land Classification

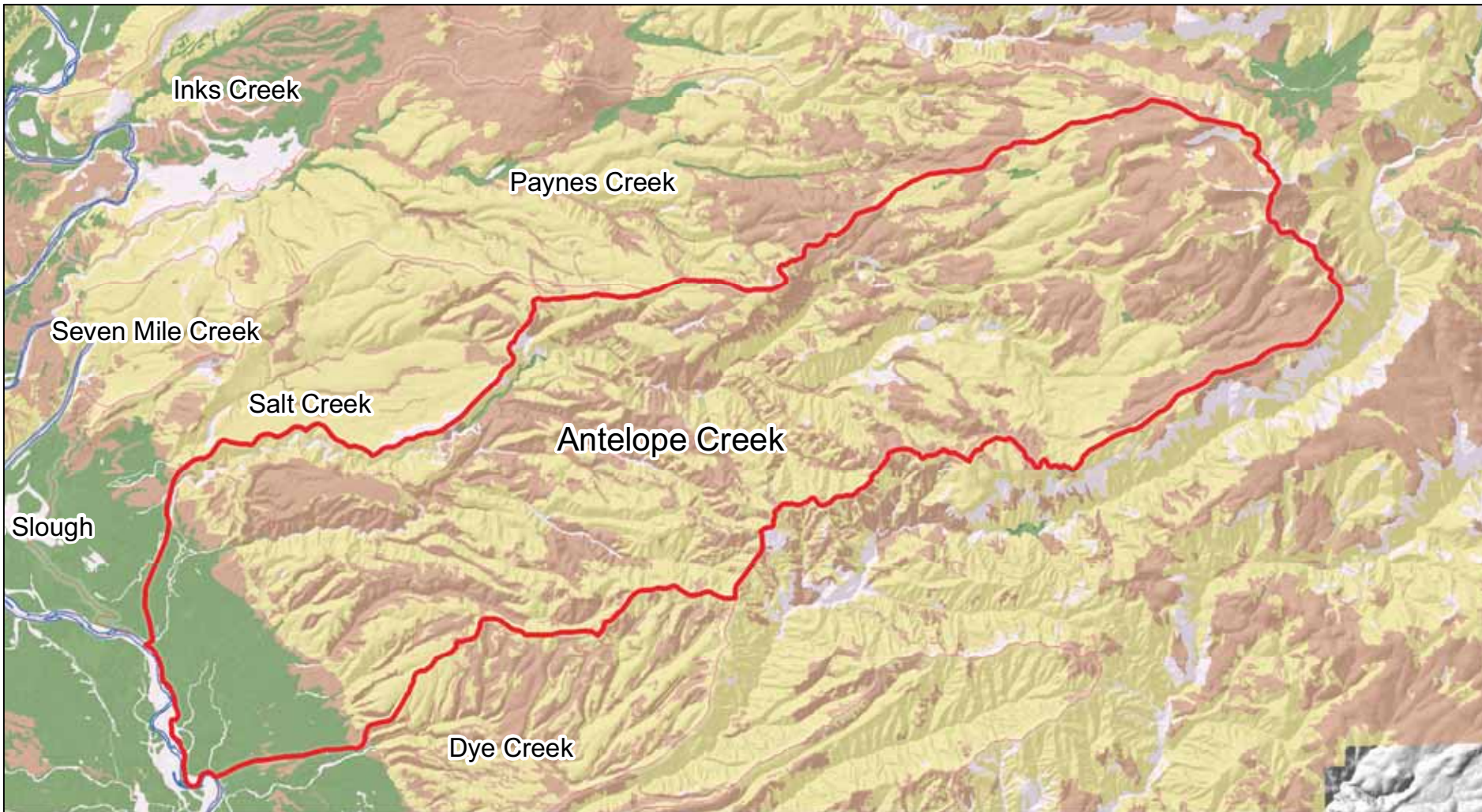
-  1
-  2
-  3
-  Code Unknown

 Watershed Boundary



Tehama County Resource Conservation District  
 (c) 2010





# Tehama East Watershed Assessment

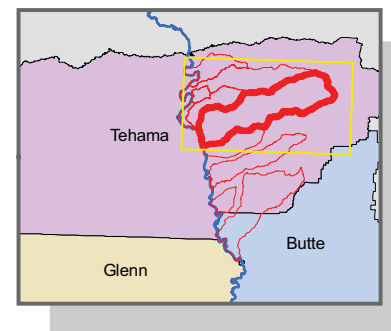
NRCS Soils Highly Erodible Soils  
Antelope Creek

## KEY

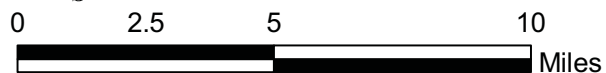
Highly Erodible Land Classification

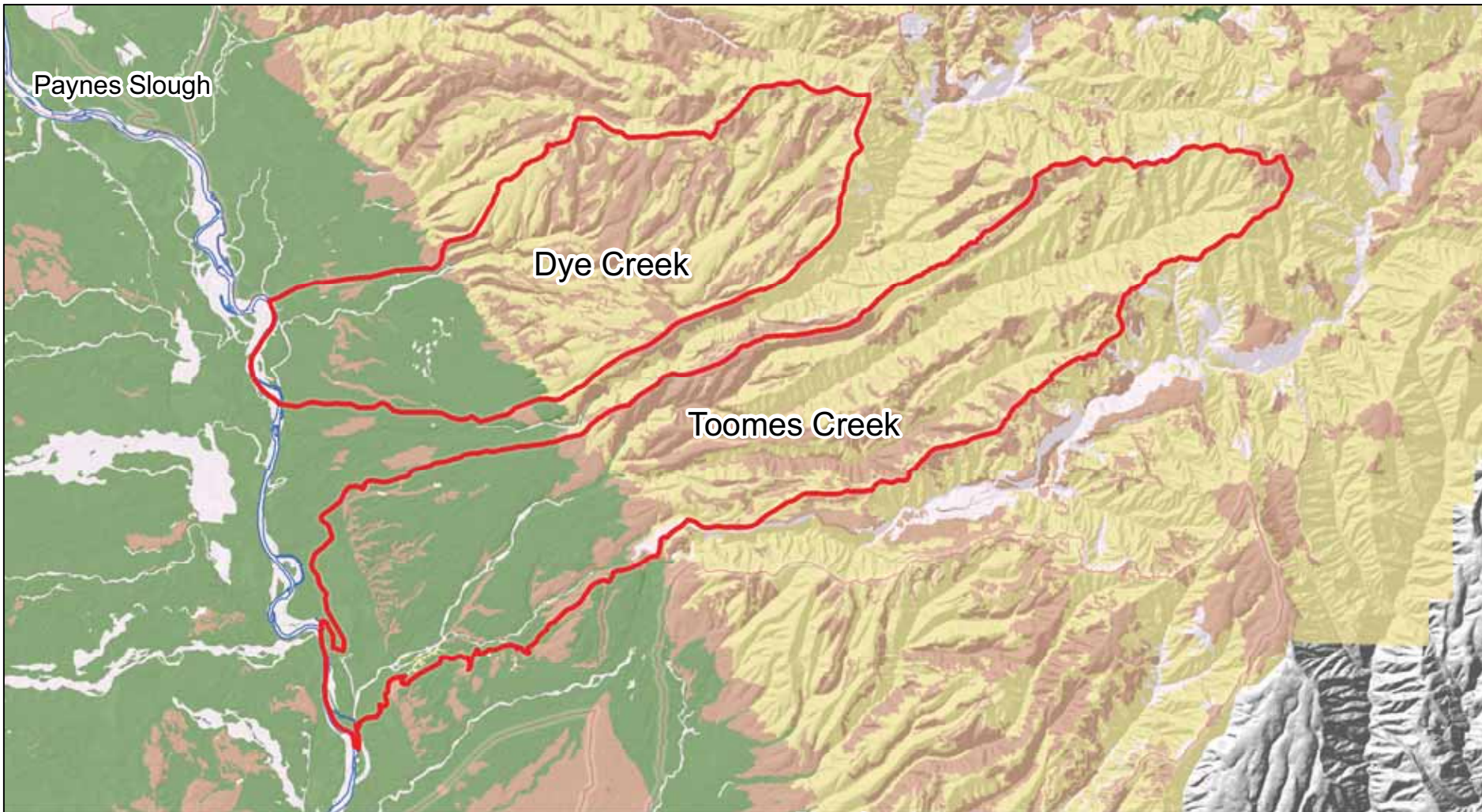
- 1
- 2
- 3
- Code Unknown

Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010





# Tehama East Watershed Assessment

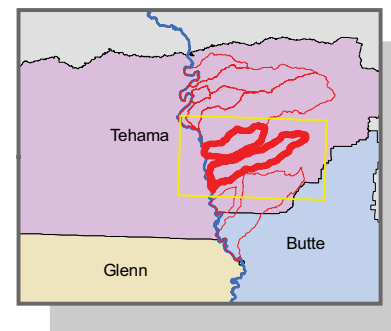
NRCS Soils Highly Erodible Soils  
Dye and Toomes Creeks

## KEY

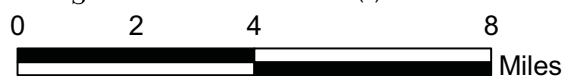
### Highly Erodible Land Classification

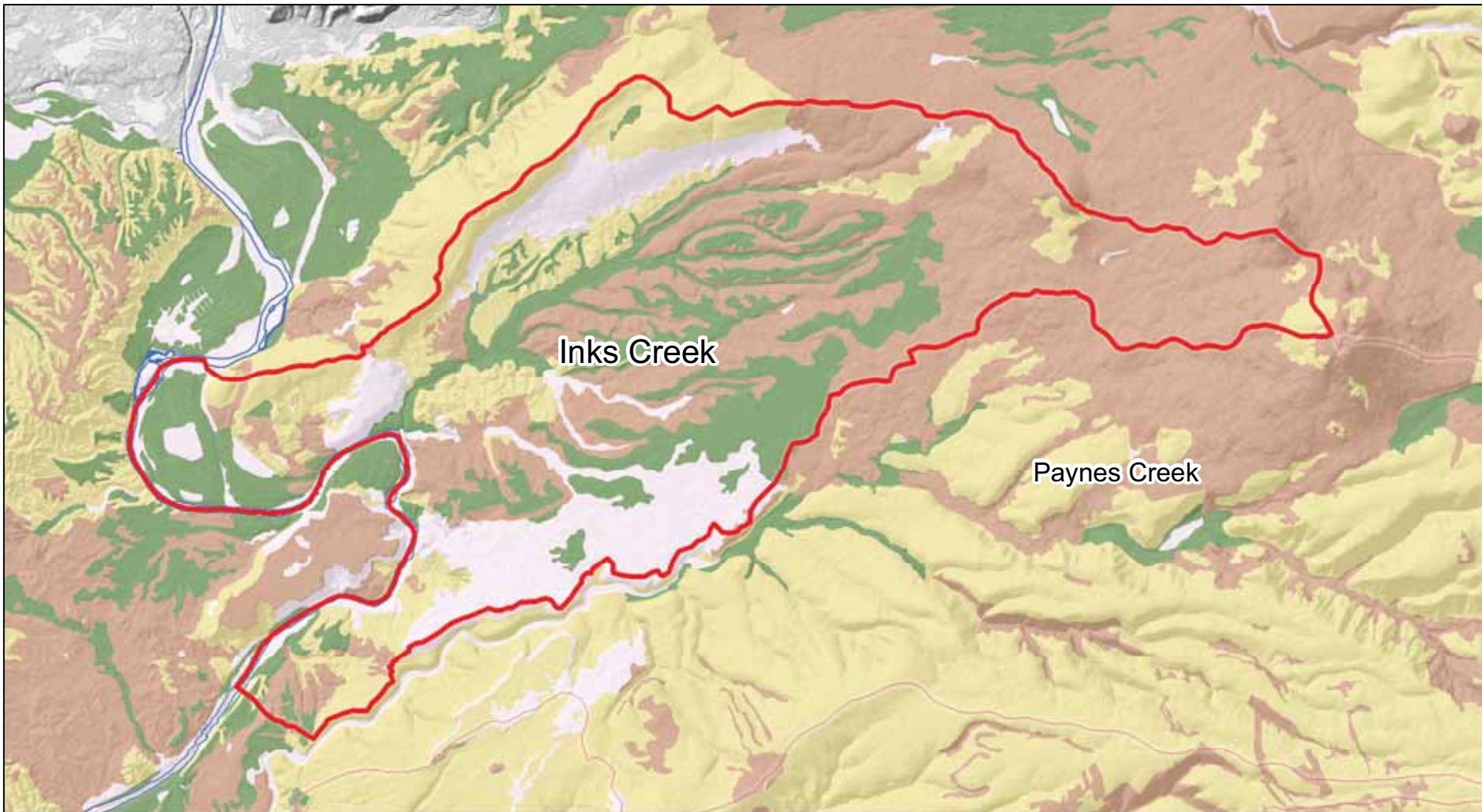
- 1
- 2
- 3
- Code Unknown

Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010





# Tehama East Watershed Assessment

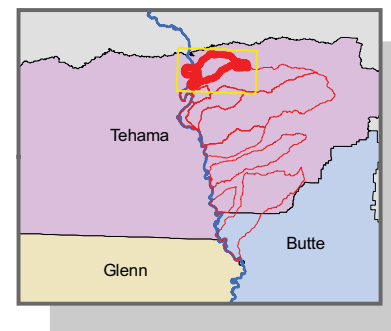
NRCS Soils Highly Erodible Soils  
Inks Creek

## KEY

Highly Erodible Land Classification

- 1
- 2
- 3
- Code Unknown

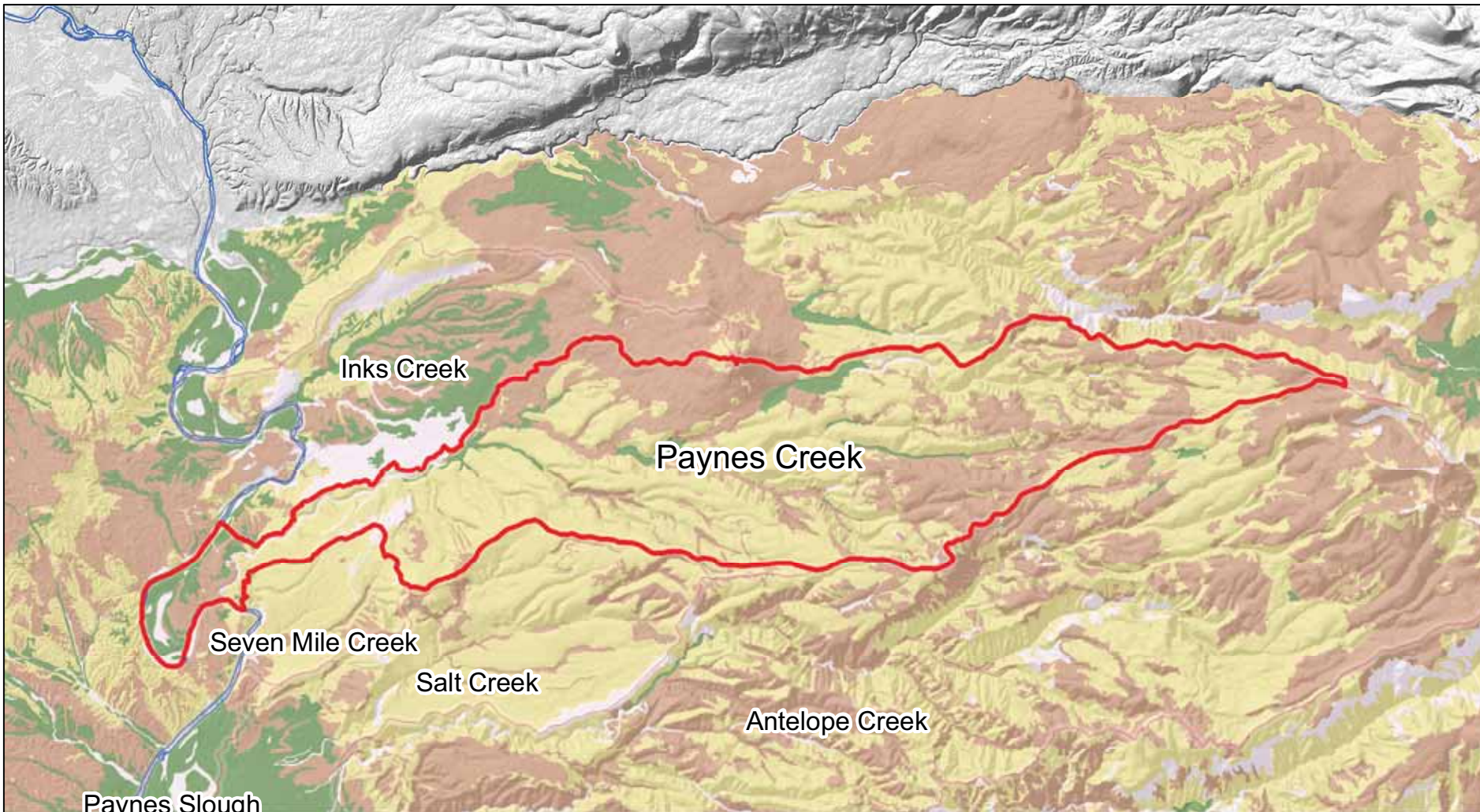
Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010







# Tehama East Watershed Assessment

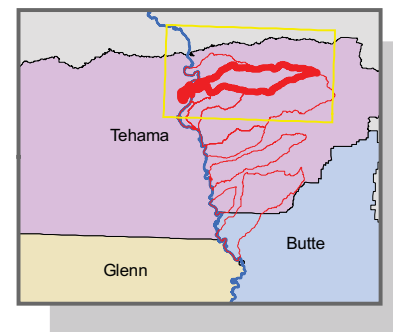
NRCS Soils Highly Erodible Soils  
Paynes Creek

## KEY

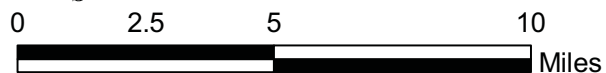
Highly Erodible Land Classification

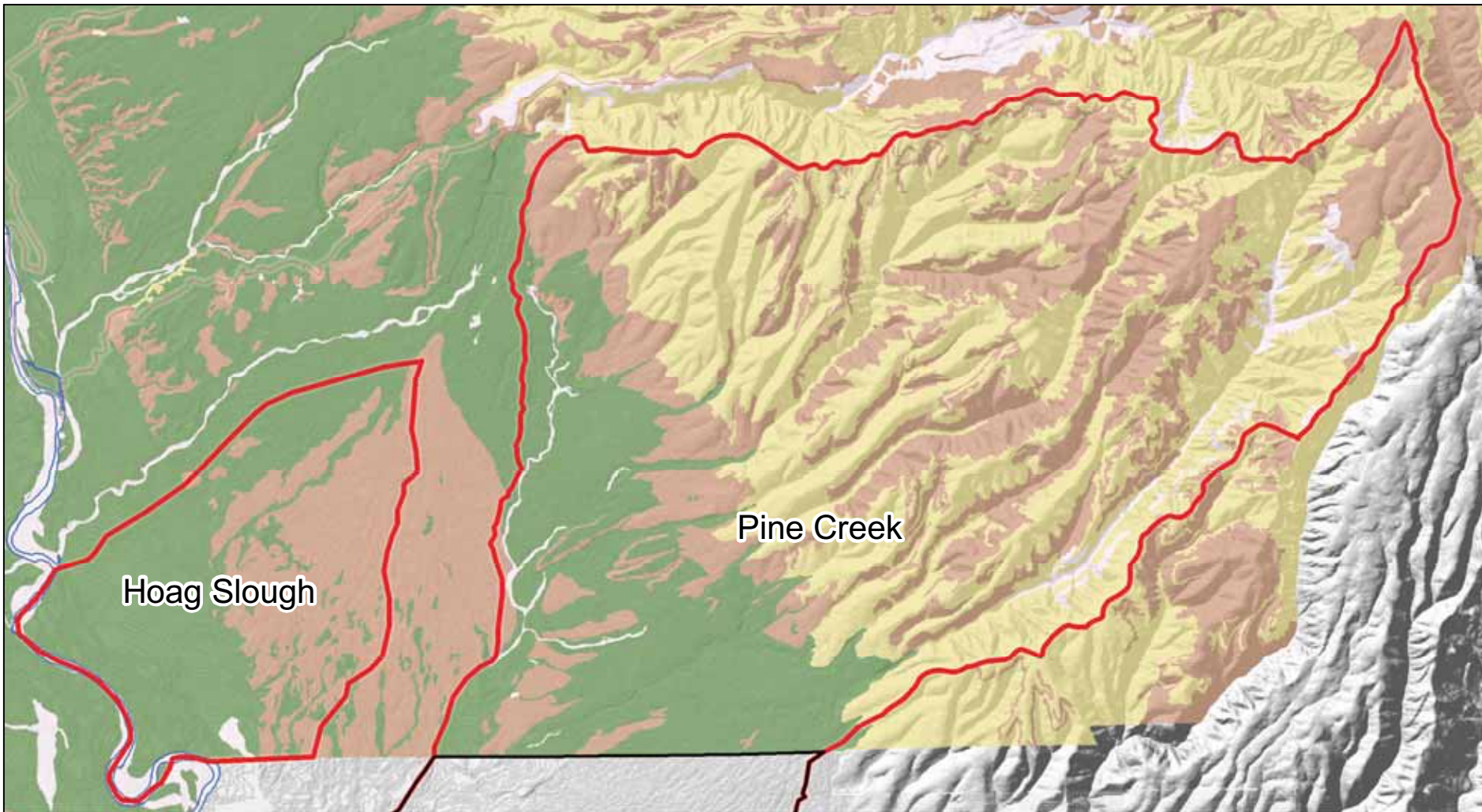
- 1
- 2
- 3
- Code Unknown

Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010



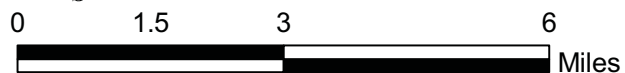


# Tehama East Watershed Assessment

NRCS Soils Highly Erodible Soils  
Hoag Slough and Upper Pine Creek



Tehama County Resource Conservation District  
(c) 2010

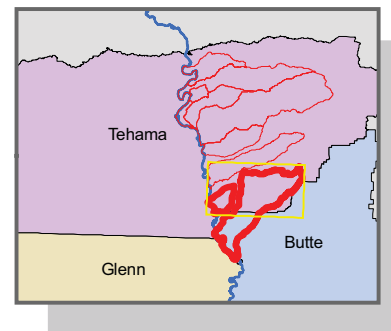


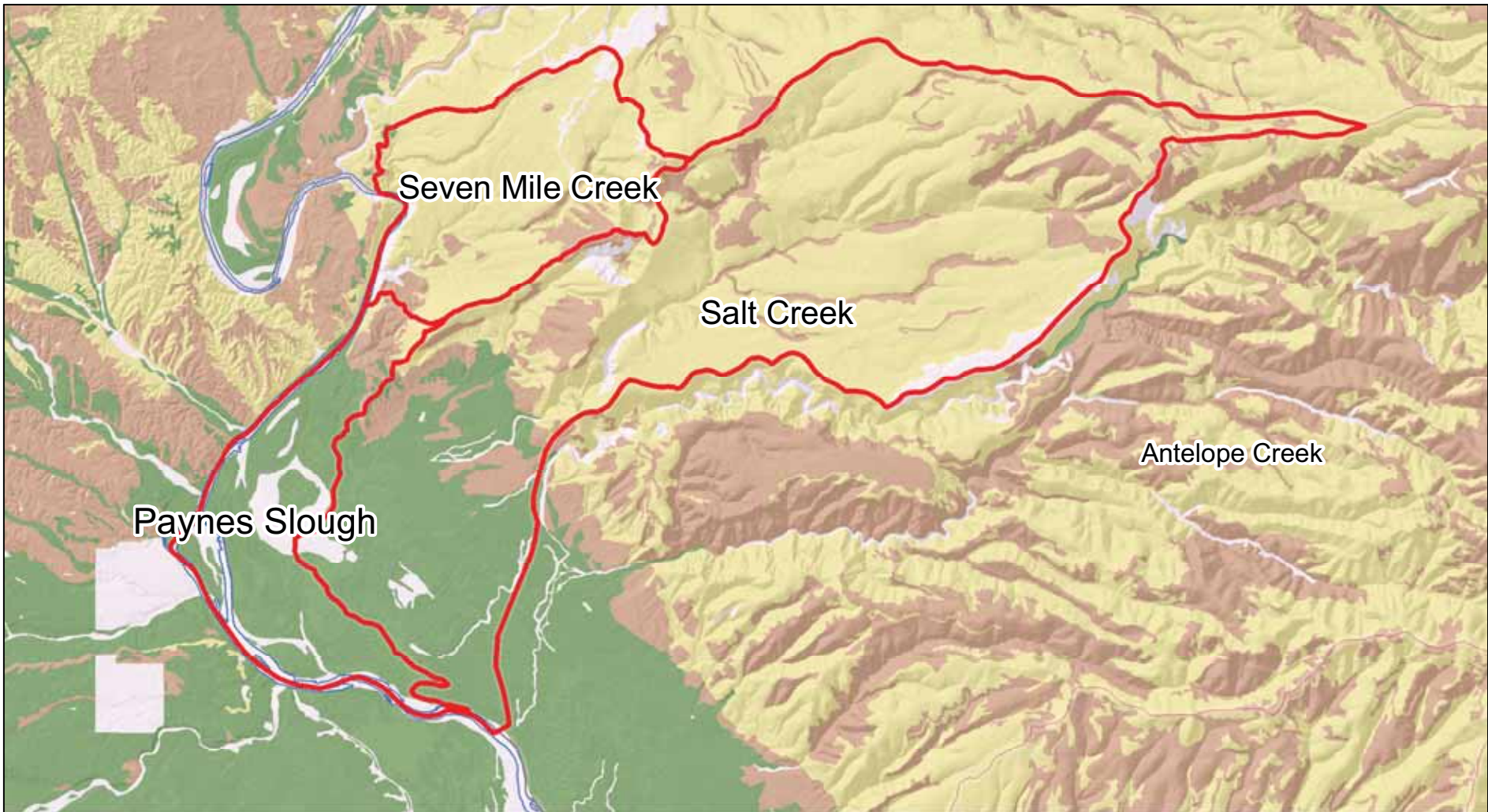
## KEY

Highly Erodible Land Classification

- 1
- 2
- 3
- Code Unknown

Watershed Boundary



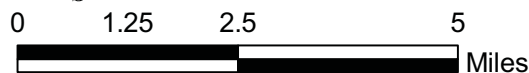


# Tehama East Watershed Assessment

NRCS Soils Highly Erodible Soils  
Paynes Slough,  
Salt, and Seven Mile Creeks



Tehama County Resource Conservation District  
(c) 2010

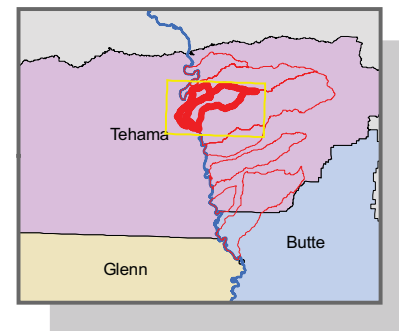


## KEY

Highly Erodible Land Classification

- 1
- 2
- 3
- Code Unknown

Watershed Boundary



Maps by Characteristics

Soils: Hydric Soils

Study Area .....	207
Antelope Creek Watershed .....	208
Dye and Toomes Creek Watersheds .....	209
Inks Creek Watershed .....	210
Paynes Creek Watershed .....	211
Pine Creek and Hoag Slough Watersheds.....	212
Paynes Slough, Salt, and Creek Watersheds .....	213

# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Tehama East Watersheds

## "Hydric Soils

The definition of a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.
















## Concept

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are hydric if the soil, in an unaltered state, was hydric. Some series, designated as hydric, have phases that are not hydric depending on water table, flooding, and ponding characteristics."


Quoted from:

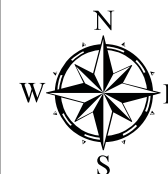
<http://soils.usda.gov/use/hydric/overview.html>

## KEY

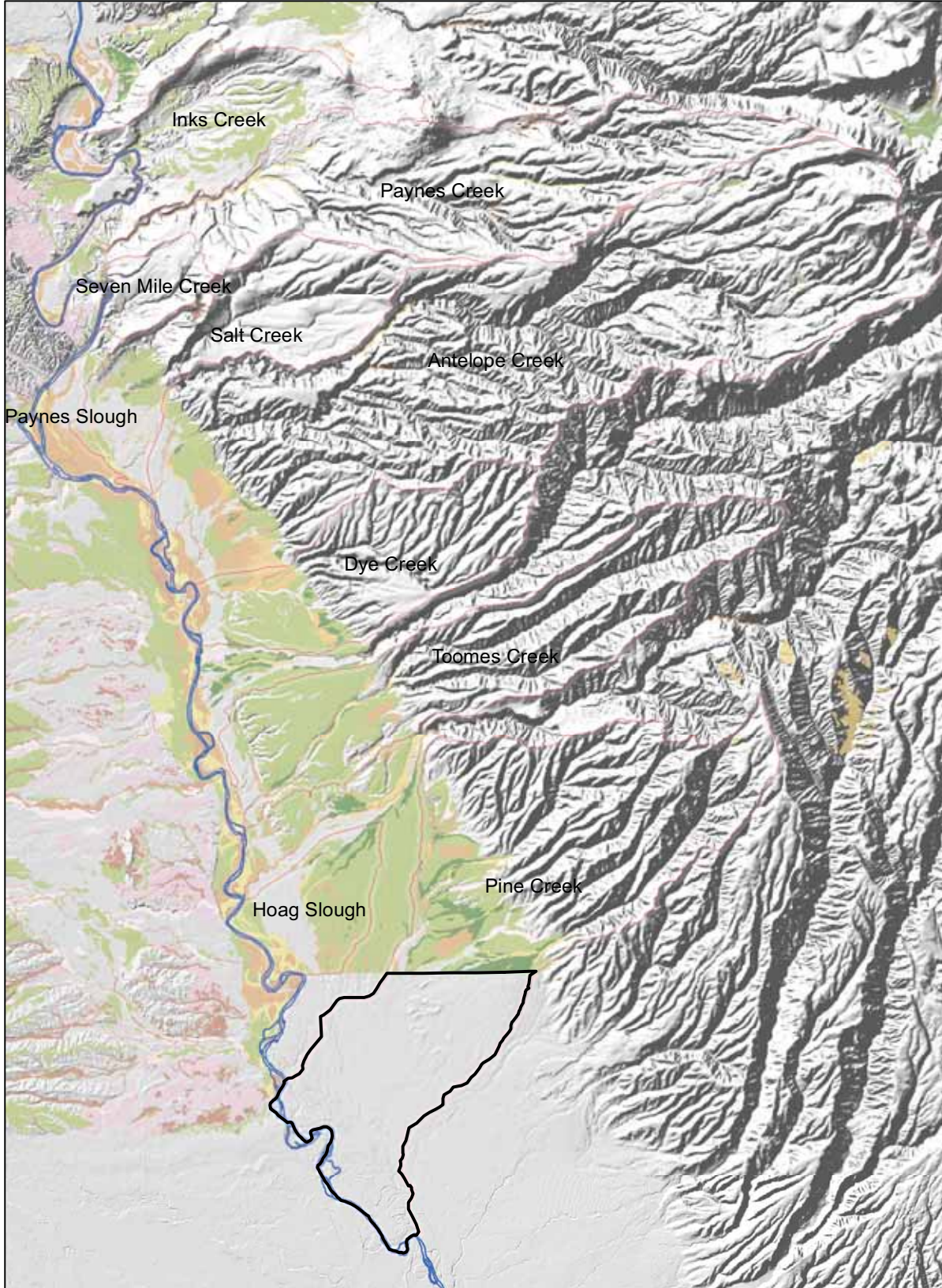
Hydric Percentage		40	
	1		60
	2		85
	3		100
	5		C
	10		CX
	25		X
	35		Code Unknown

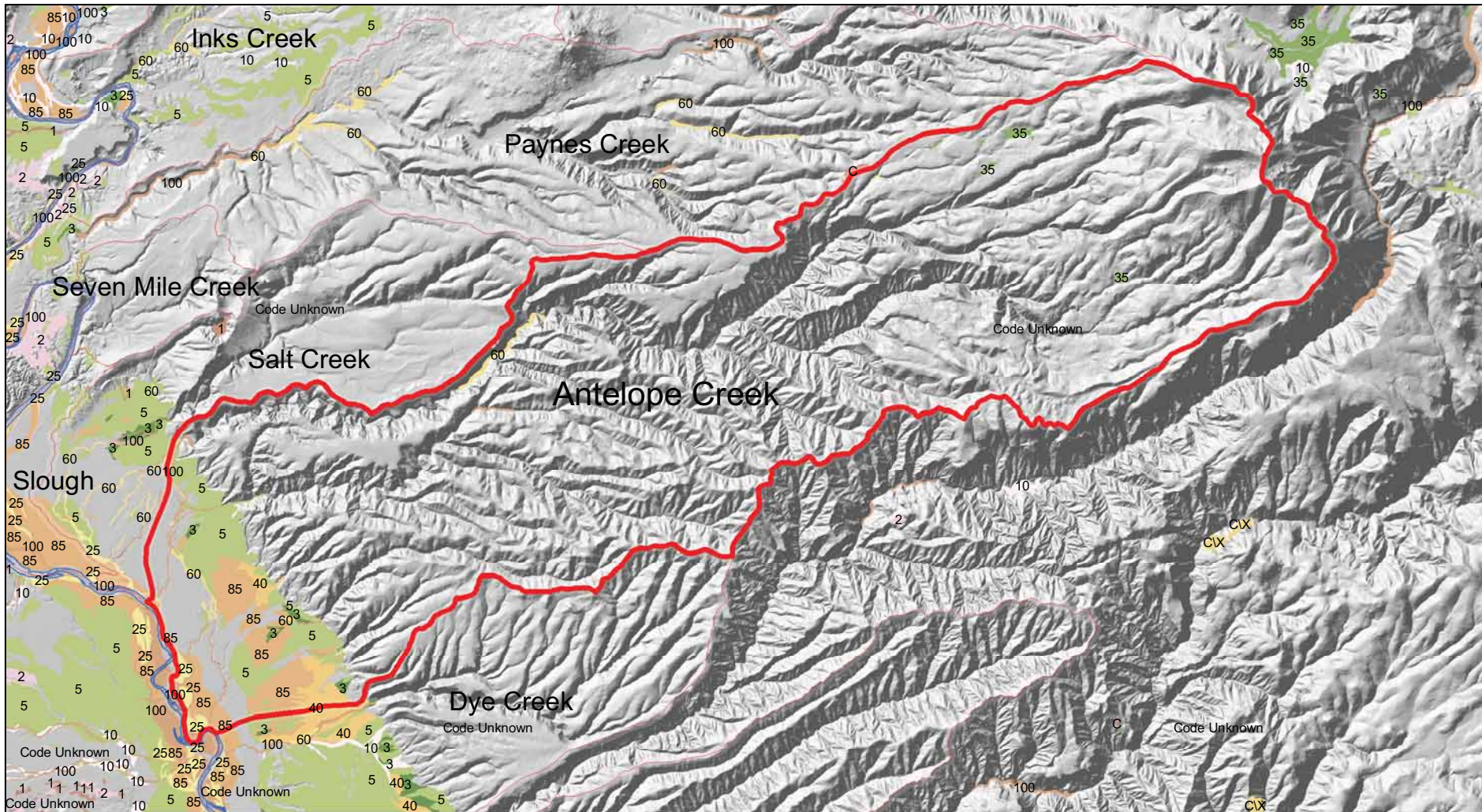
 South Pine Creek Watersheds within the Butte County Soils Database

 Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010



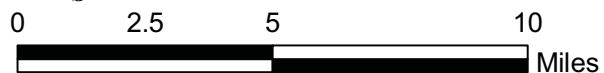


# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Antelope Creek



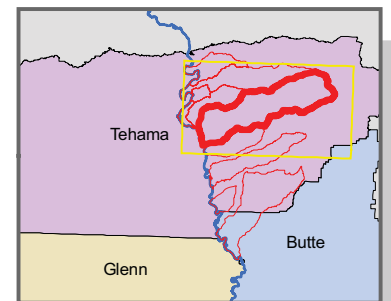
Tehama County Resource Conservation District  
(c) 2010

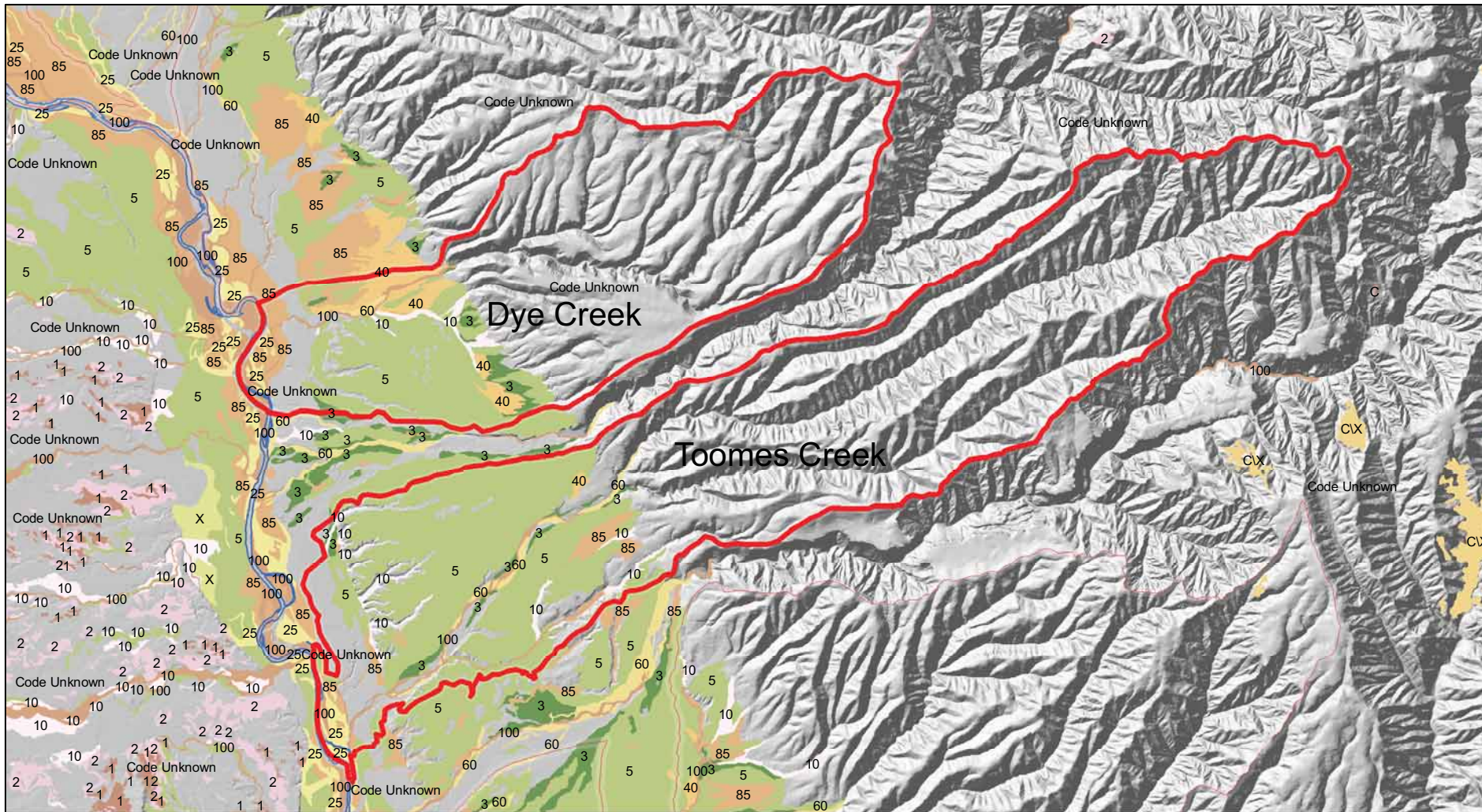


## KEY

Hydric Percentage	
	1
	2
	3
	5
	10
	25
	35
	40
	60
	85
	100
	C
	CIX
	X
	Code Unknown

Watershed Boundary





# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Dye And Toomes Creeks



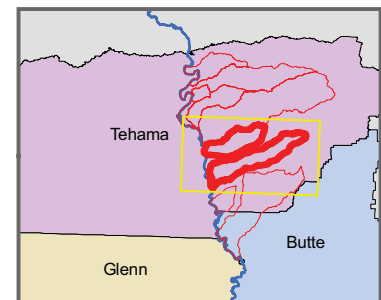
Tehama County Resource Conservation District  
(c) 2010

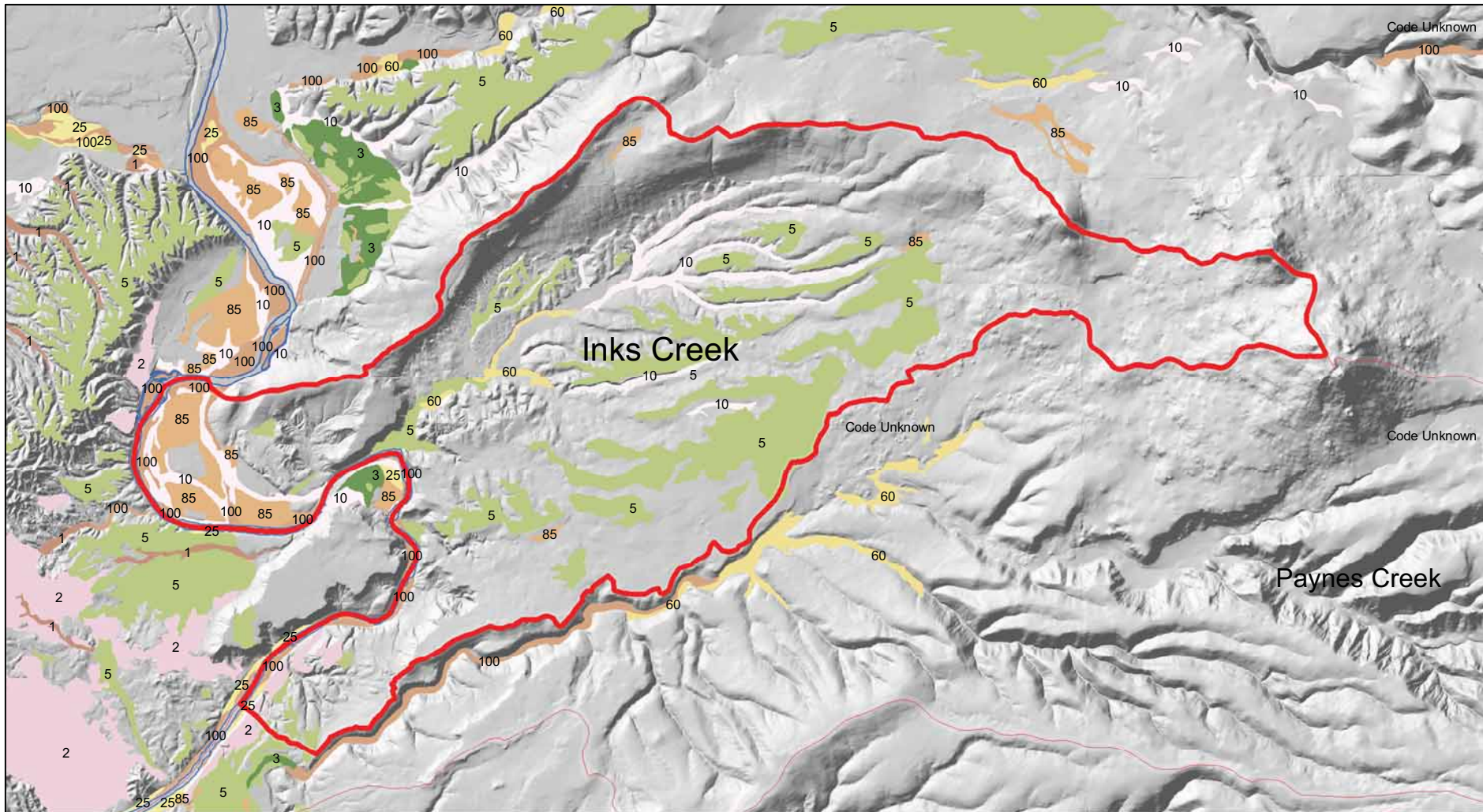


## KEY

Hydric Percentage	Color	Value
1	Light Brown	1
2	Pink	2
3	Light Green	3
5	Medium Green	5
10	Light Yellow	10
25	Yellow	25
35	Dark Green	35
40	Light Orange	40
60	Yellow-Green	60
85	Orange	85
100	Dark Orange	100
C	Reddish Brown	C
CX	Yellow	CX
X	Light Green	X
Code Unknown	White	Code Unknown

Watershed Boundary



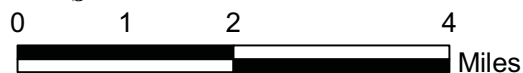


# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Inks Creek



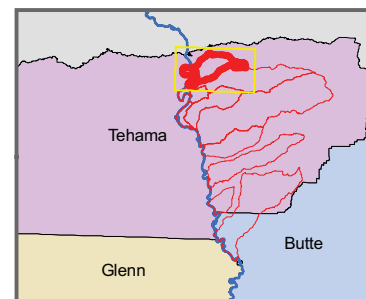
Tehama County Resource Conservation District  
(c) 2010



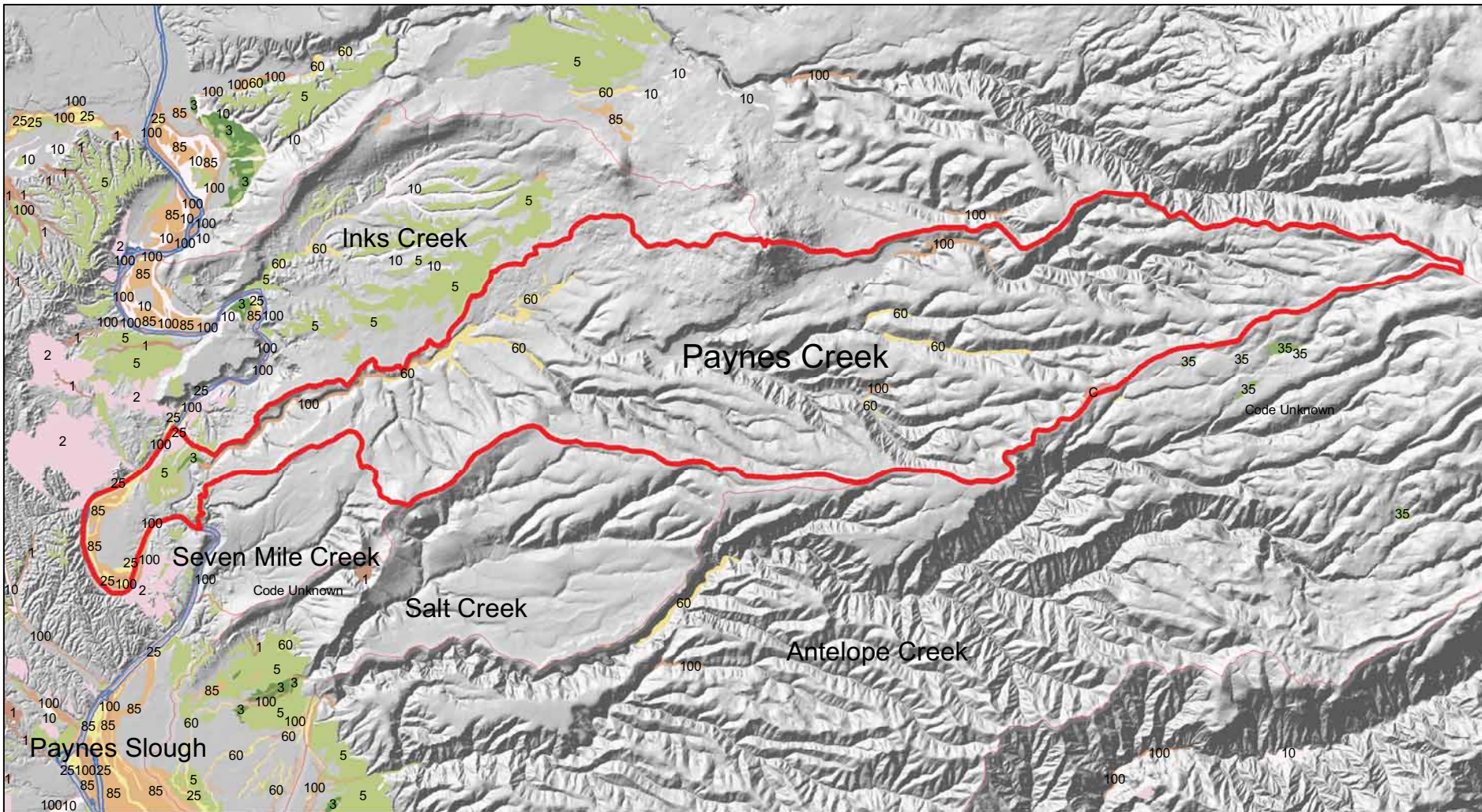
## KEY

Hydric Percentage	
	1
	2
	3
	5
	10
	25
	35
	40
	60
	85
	100
	C
	CX
	X
	Code Unknown

Watershed Boundary





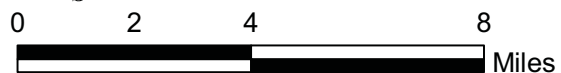


# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Paynes Creek



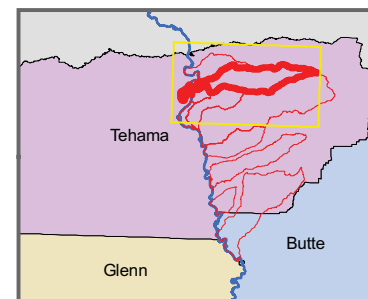
Tehama County Resource Conservation District  
(c) 2010

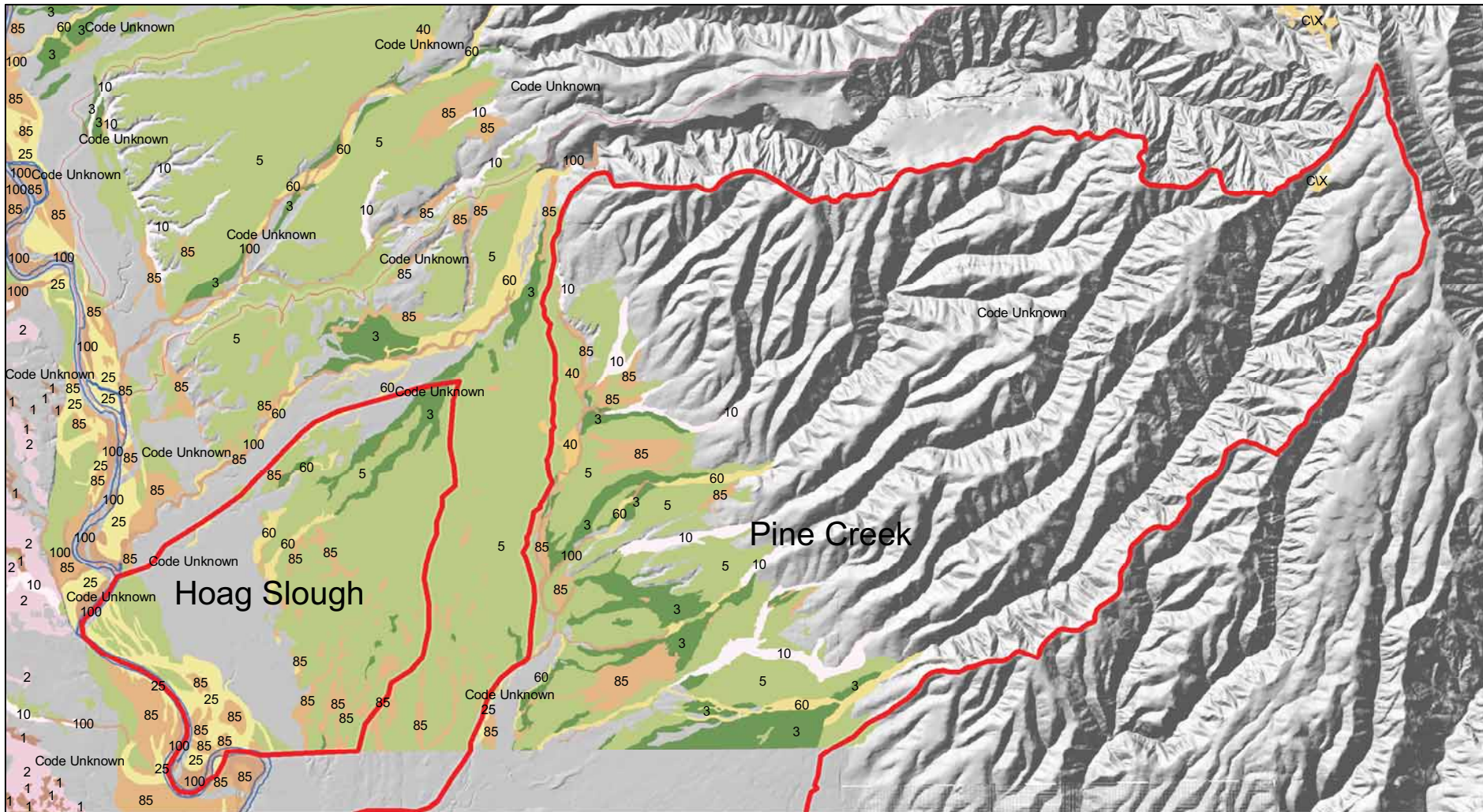


## KEY

Hydric Percentage		40	
	1		60
	2		85
	3		100
	5		C
	10		CX
	25		X
	35		Code Unknown

Watershed Boundary



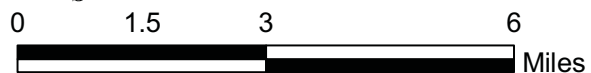


# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Hoag Slough and  
Upper Pine Creek



Tehama County Resource Conservation District  
(c) 2010



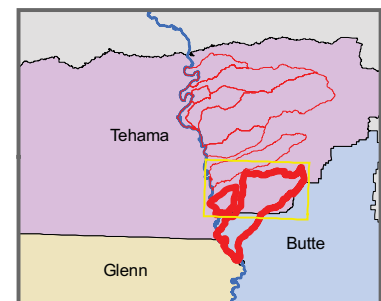
## KEY

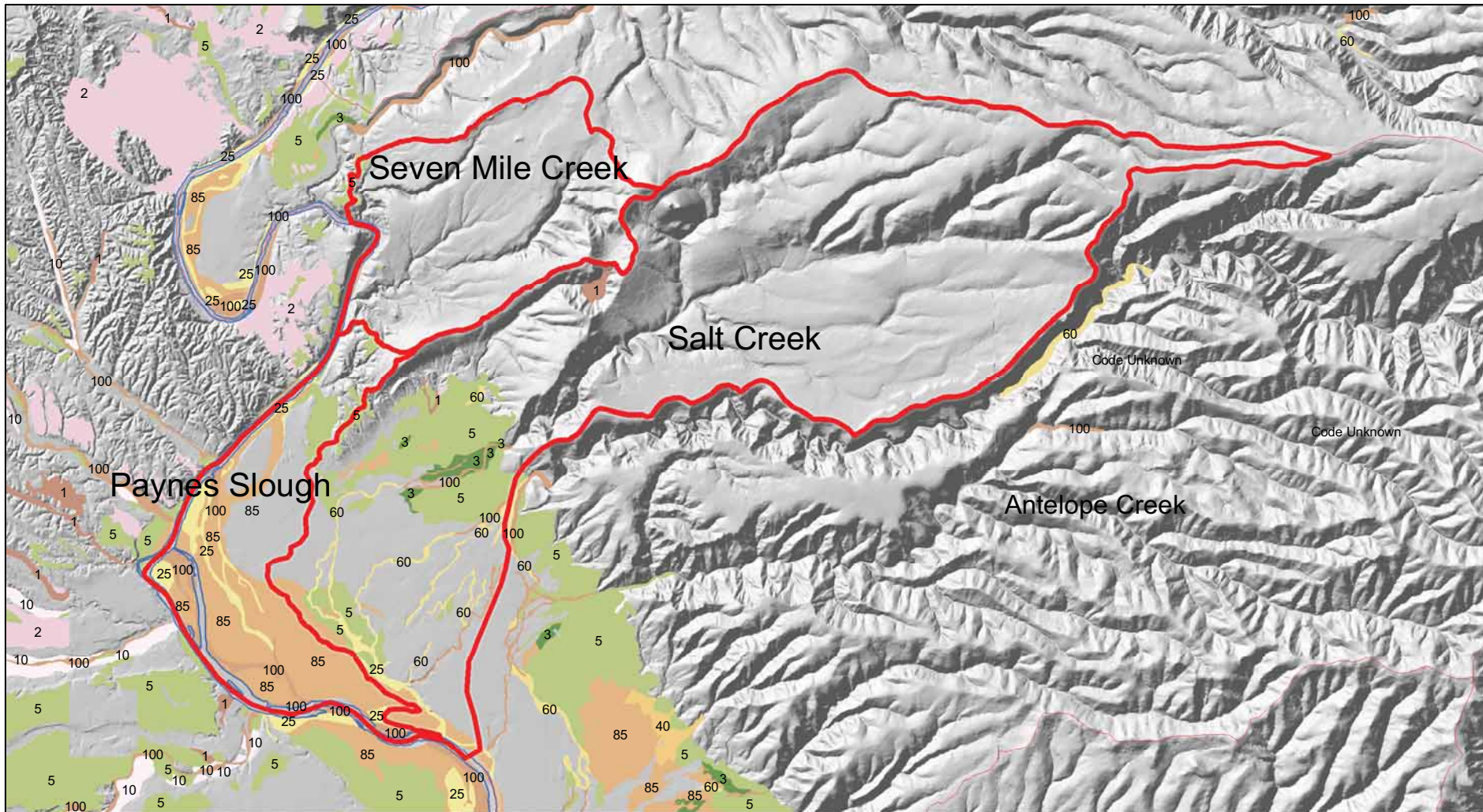
Hydric Percentage

- 1
- 2
- 3
- 5
- 10
- 25
- 35

- 40
- 60
- 85
- 100
- C
- CIX
- X
- Code Unknown

Watershed Boundary



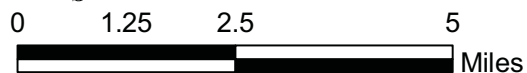


# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Paynes Slough,  
Salt and Seven Mile Creeks



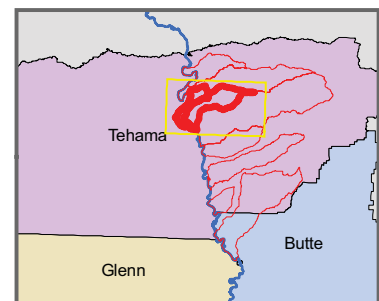
Tehama County Resource Conservation District  
(c) 2010



## KEY

Hydric Percentage	
	1
	2
	3
	5
	10
	25
	35
	40
	60
	85
	100
	C
	CX
	X
	Code Unknown

Watershed Boundary



Maps by Characteristics

Soils: Hydrologic Soils

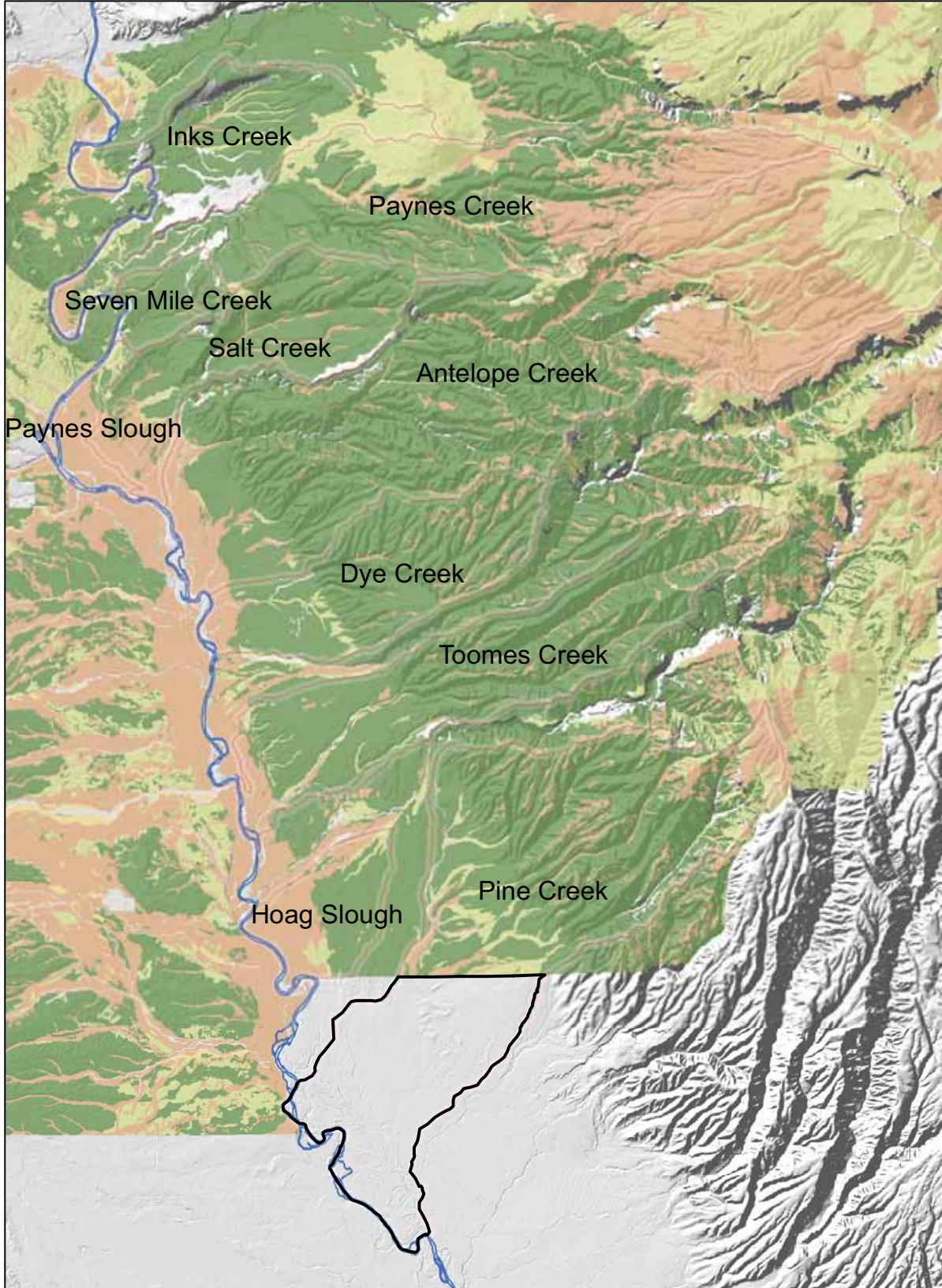
Study Area .....	215
Antelope Creek Watershed .....	216
Dye and Toomes Creek Watersheds .....	217
Inks Creek Watershed .....	218
Paynes Creek Watershed .....	219
Pine Creek and Hoag Slough Watersheds.....	220
Paynes Slough, Salt, and Creek Watersheds .....	221

# Tehama East Watershed Assessment

NRCS Soils Hydrologic Group  
Tehama East Watersheds

Hydrologic group is a group of soils having similar runoff potential under similar storm and cover conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The influence of ground cover is treated independently.

Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part618.html>



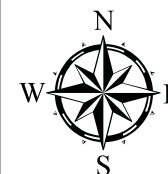
## KEY

### Hydrologic Group

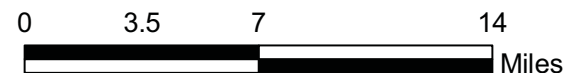
- A
- B
- C
- D
- Code Unknown

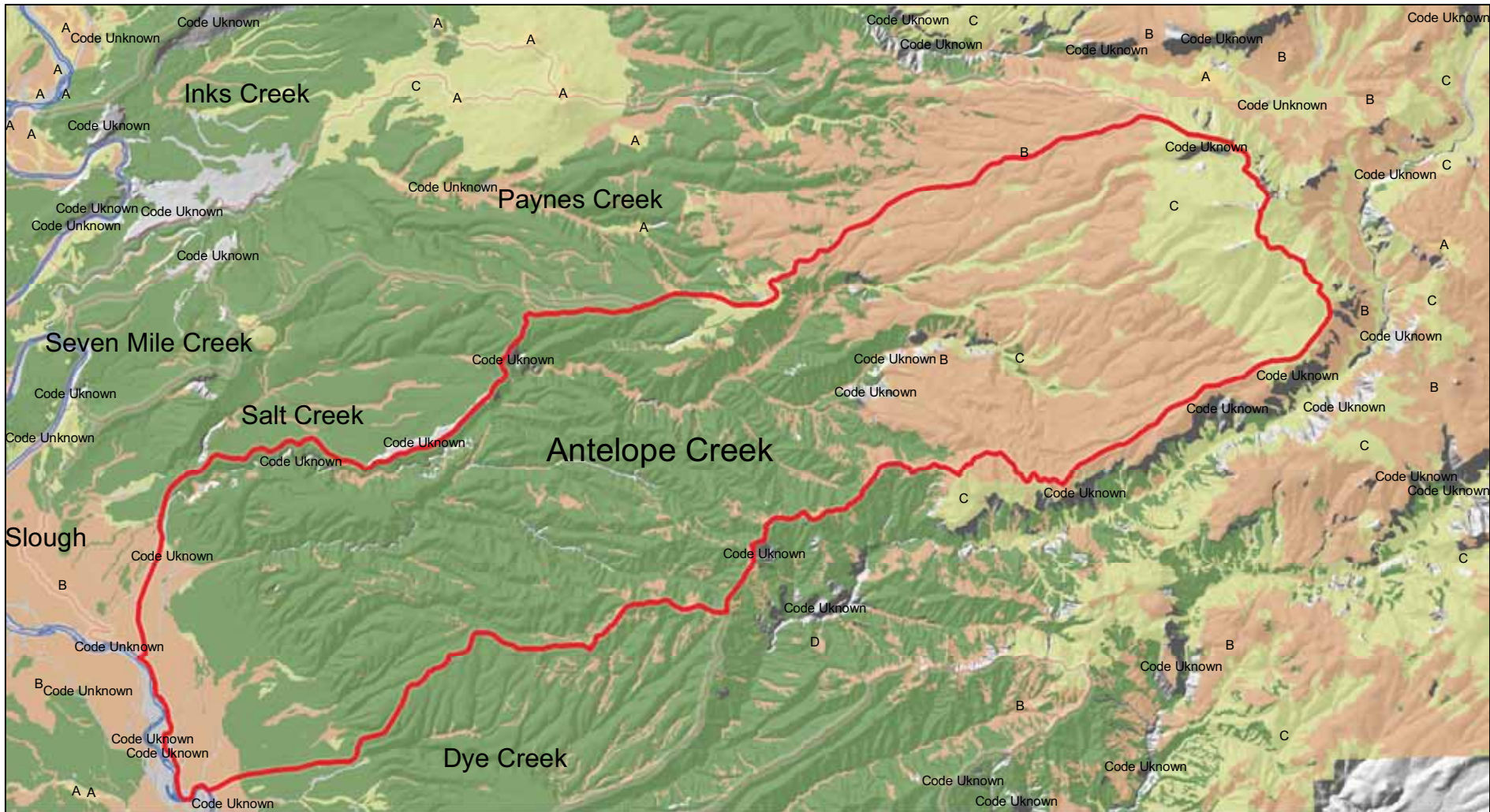
Watershed Boundary

South Pine Creek Watersheds within the Butte County Soils Database



Tehama County Resource  
Conservation District  
(c) 2010



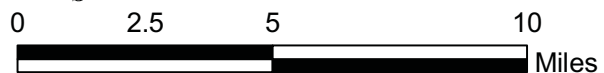


# Tehama East Watershed Assessment

## NRCS Soils Hydrologic Group Antelope Creek



Tehama County Resource Conservation District  
(c) 2010



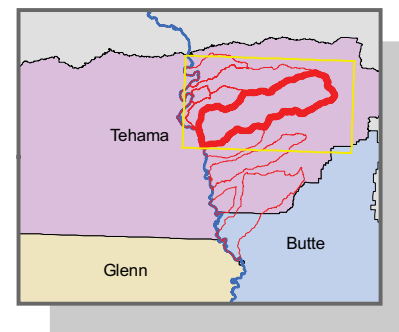
### KEY

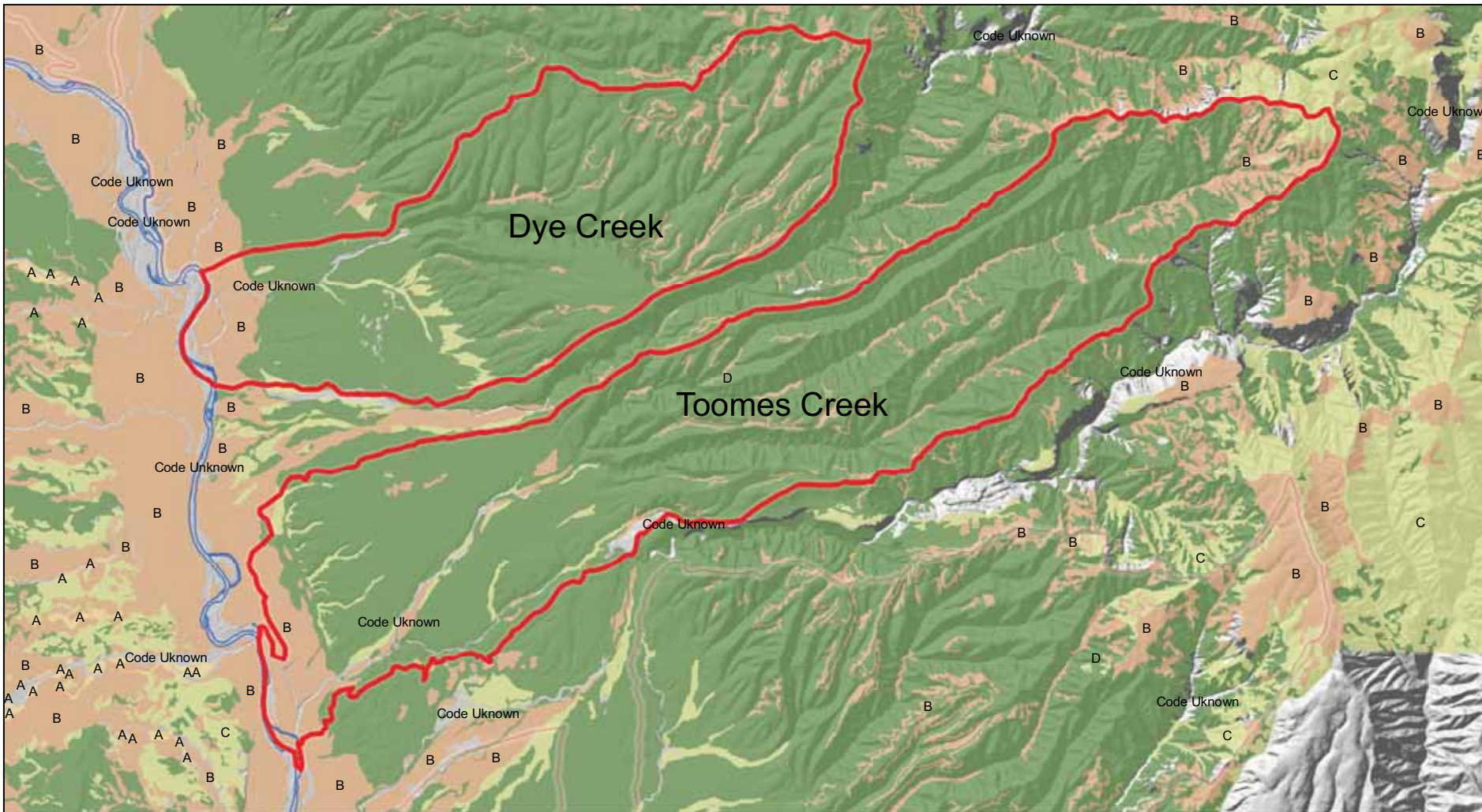
Hydrologic Group

- A
- B
- C
- D

Code Unknown

Watershed Boundary





# Tehama East Watershed Assessment

## NRCS Soils Hydrologic Group Dye and Toomes Creek



Tehama County Resource Conservation District  
(c) 2010



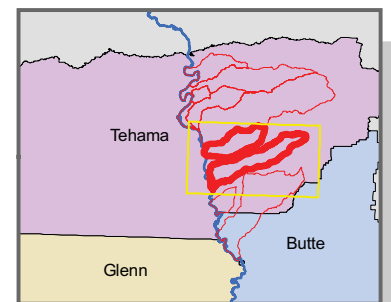
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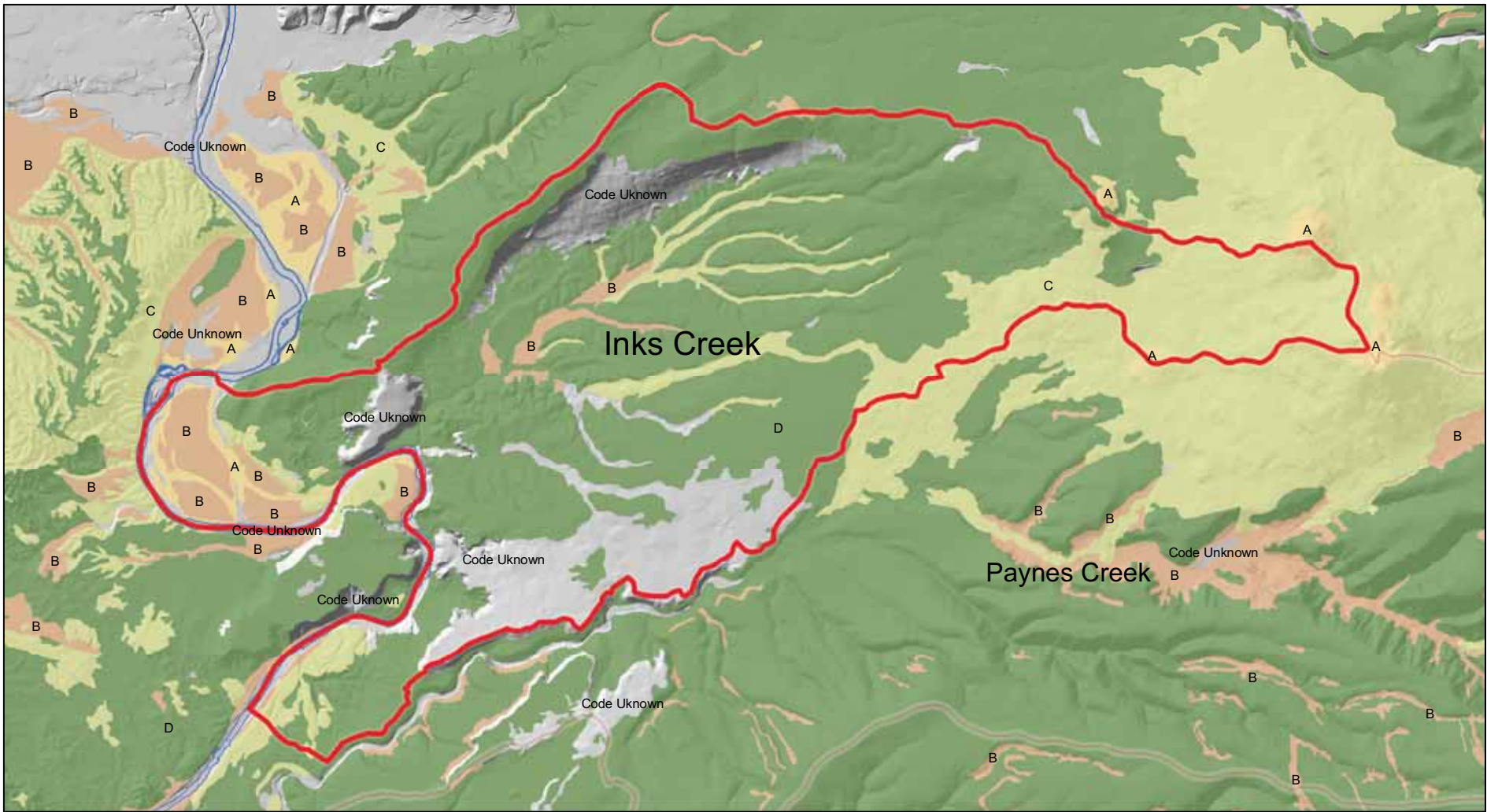
Hydrologic Group

- A
- B
- C
- D

Code Unknown

Watershed Boundary





# Tehama East Watershed Assessment

NRCS Soils Hydrologic Group  
Inks Creek



Tehama County Resource Conservation District  
(c) 2010



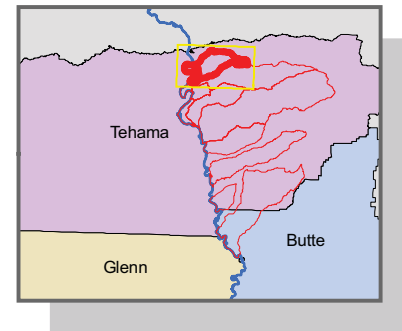
## KEY

Hydrologic Group

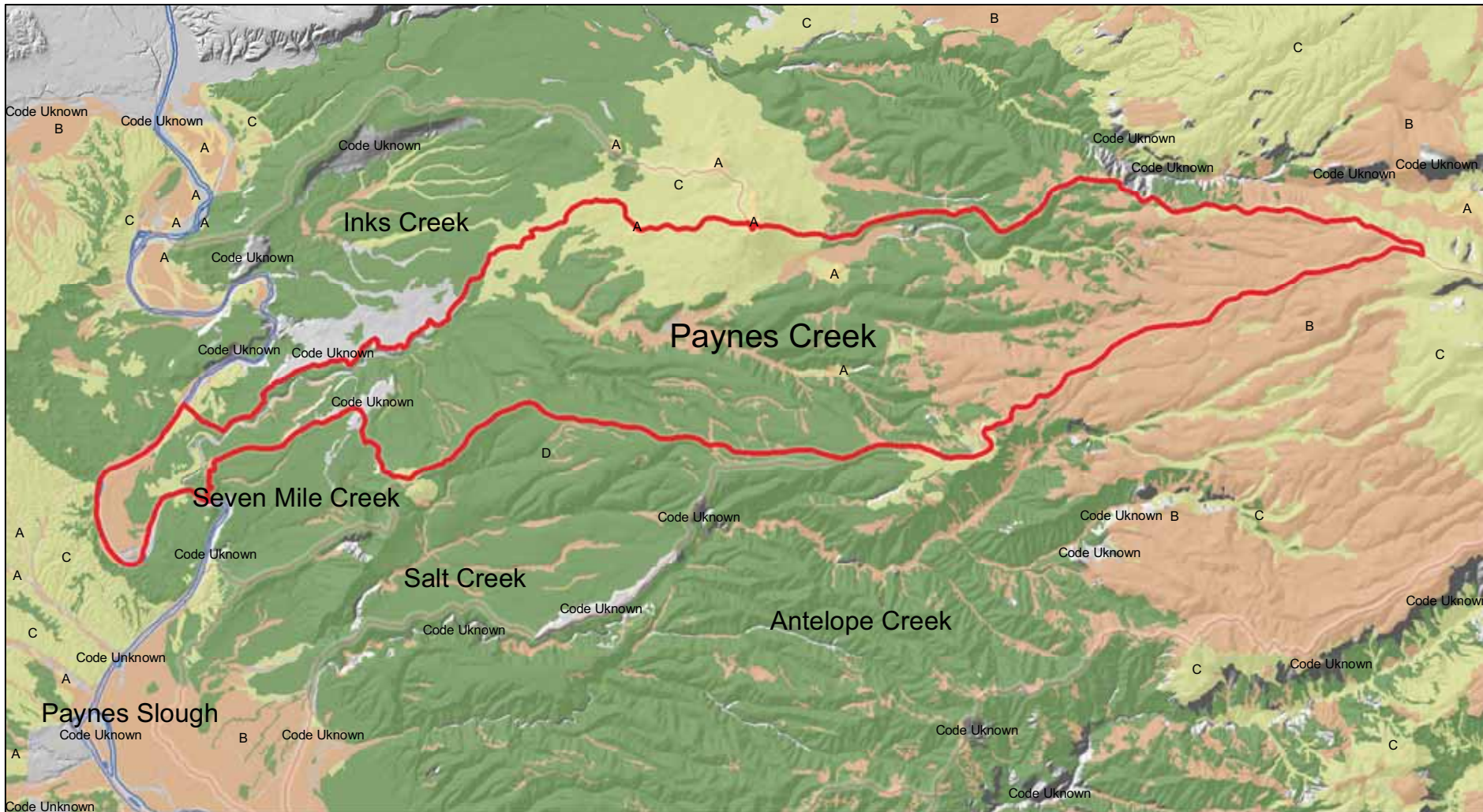


Code Unknown

Watershed Boundary





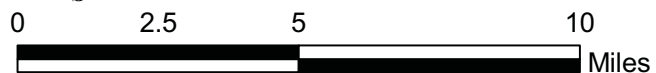


# Tehama East Watershed Assessment

NRCS Soils Hydrologic Group  
Paynes Creek



Tehama County Resource Conservation District  
(c) 2010



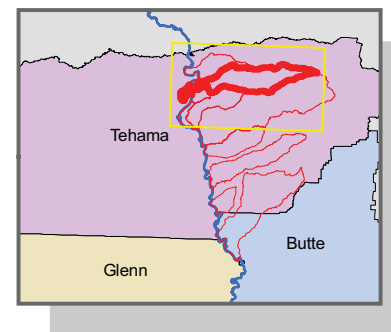
## KEY

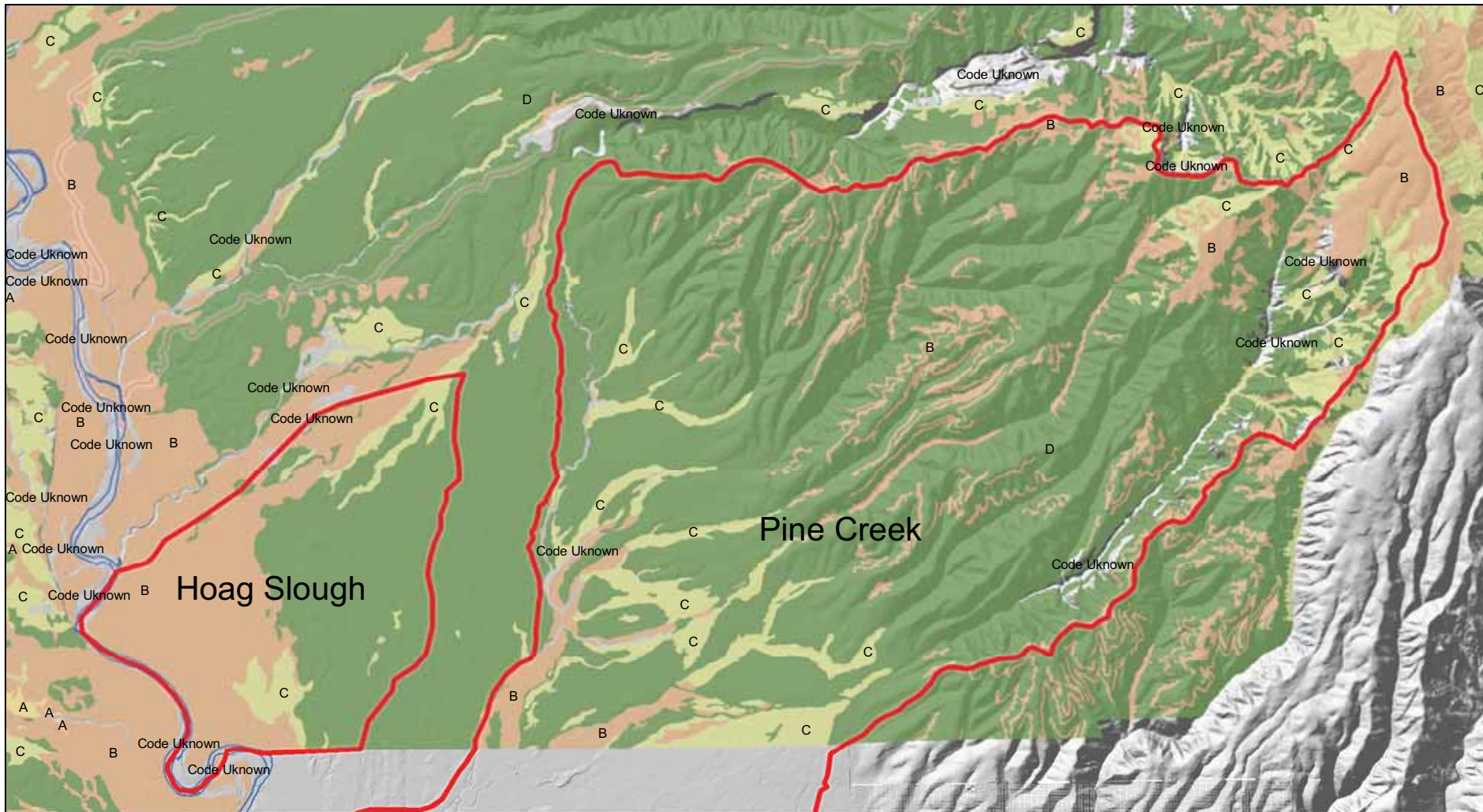
Hydrologic Group

- A
- B
- C
- D

Code Unknown

Watershed Boundary



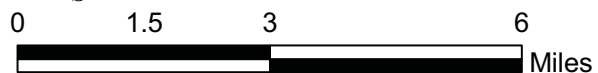


# Tehama East Watershed Assessment

NRCS Soils Hydrologic Group  
Hoag Slough and  
Upper Pine Creek



Tehama County Resource Conservation District  
(c) 2010



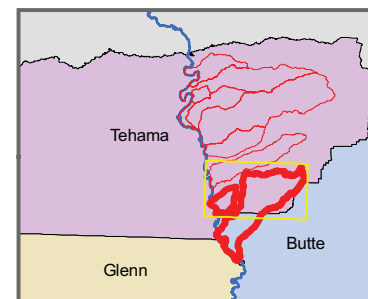
## KEY

Hydrologic Group

- A
- B
- C
- D

Code Unknown

Watershed Boundary



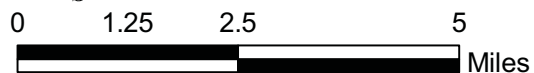


# Tehama East Watershed Assessment

NRCS Soils Hydrologic Group  
Paynes Slough,  
Salt, and Seven Mile Creeks



Tehama County Resource Conservation District  
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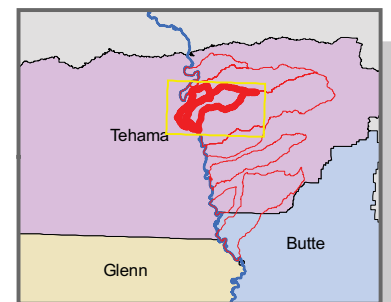
## KEY

Hydrologic Group

- A
- B
- C
- D

Code Unknown

Watershed Boundary



Maps by Characteristics

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# Tehama East Watershed Assessment

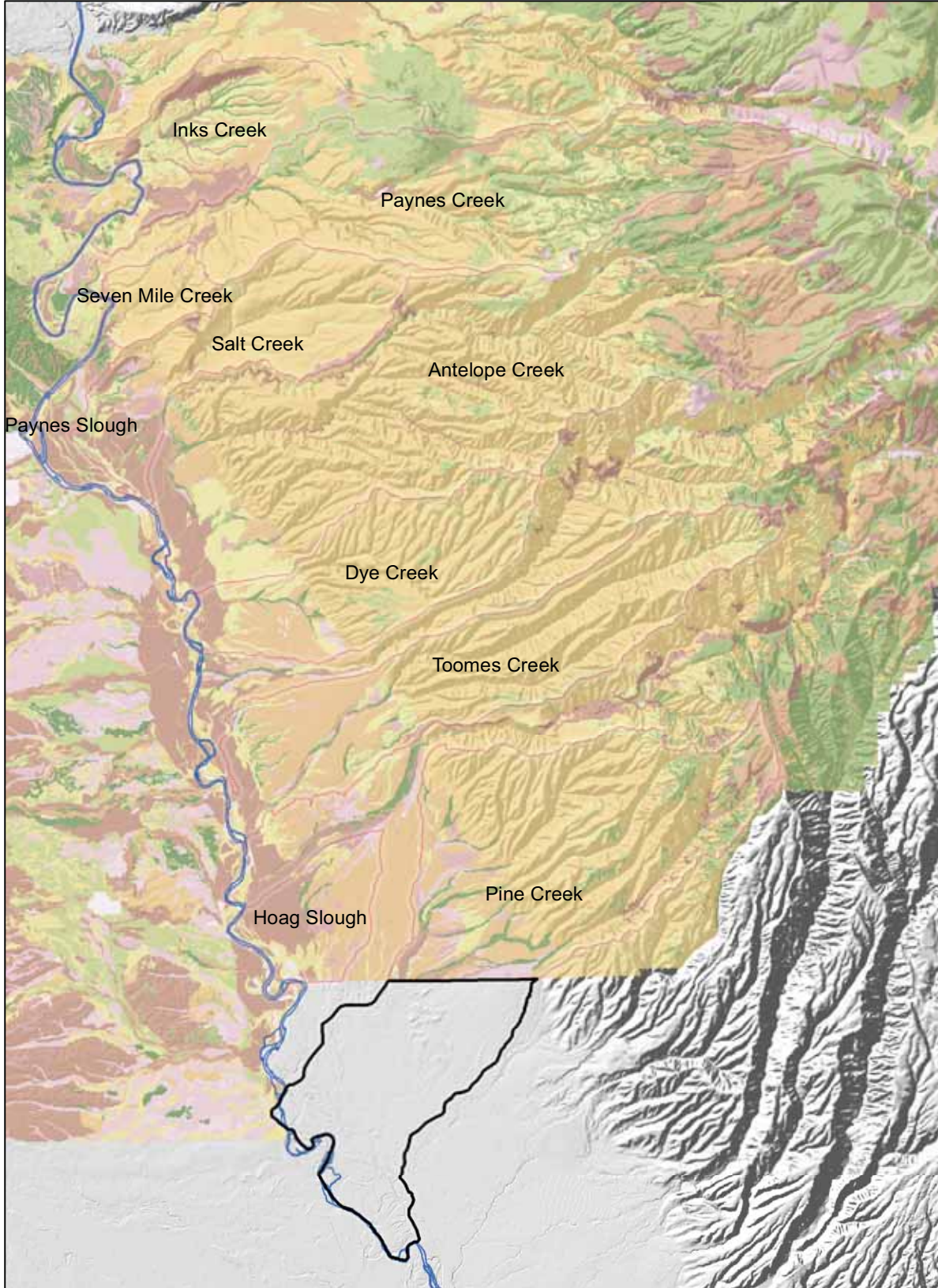
## Land Capability Classification Tehama East Watersheds

"Definition. Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time.

Classes. Land capability classification is subdivided into capability class and capability subclass nationally. Some states also use a capability unit.

Significance. Land capability classification has value as a grouping of soils. National Resource Inventory information, Farmland Protection Policy Act, and many field office technical guides have been assembled according to these classes. The system has been adopted in many textbooks and has wide public acceptance. Some state legislation has used the system for various applications. Users should reference Agriculture Handbook No. 210 (Exhibit 622-2) for a listing of assumptions and broad wording used to define the capability class and capability subclass."

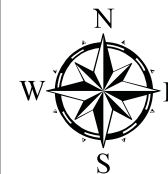
Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part622.html>



### KEY

See Land Capability Key

 Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

## Land Capability Classification Tehama East Watersheds

### Cap\_Units

Code	Unknown	Capability Class.
I-1	IVs-3	Definition. Capability class is the broadest category in the land capability classification system. Class codes I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), and VIII (8) are used to represent both irrigated and nonirrigated land capability classes.
IIIe-3	IVs-4	
IIIe-5	IVs-8	Classes and definitions. Class I (1) soils have slight limitations that restrict their use.
IIIs-3	IVw-5	
IIIs-5	Ive-1	Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
IIIs-8	VIIIs-8	
IIIs-9	VIIe-3	Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
IIIw-5	VIIe-4	
IIe-1	VIIe-8	Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
IIe-3	VIIIs-1	
IIe-4	VIIIs-4	Class V (5) soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
IIIs-0	VIIIs-7	
IIIs-3	VIIIs-8	Class VI (6) soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
IIIs-4	VIIw-4	
IIIs-5	VIe-3	Class VII (7) soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
IIIs-8	VIe-4	
IIIs-o	VIe-5	Class VIII (8) soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.
IIw-0	VIe-8	
IIw-2	VIIs-1	Capability Subclass.
IVe-1	VIIs-7	
IVe-3	VIIs-8	Definition. Capability subclass is the second category in the land capability classification system. Class codes e, w, s, and c are used for land capability subclasses.
IVe-4	VIw-1	
IVe-5	Vw-2	Subclasses and definitions. Subclass e is made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass.
IVe-8		

### Capability Class.

Definition. Capability class is the broadest category in the land capability classification system. Class codes I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), and VIII (8) are used to represent both irrigated and nonirrigated land capability classes.

### Classes and definitions.

Class I (1) soils have slight limitations that restrict their use.

Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class V (5) soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VI (6) soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VII (7) soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.

Class VIII (8) soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.

### Capability Subclass.

Definition. Capability subclass is the second category in the land capability classification system. Class codes e, w, s, and c are used for land capability subclasses.

### Subclasses and definitions.

Subclass e is made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass.

Subclass w is made up of soils for which excess water is the dominant hazard or limitation affecting their use. Poor soil drainage, wetness, a high water table, and overflow are the factors that affect soils in this subclass.

Subclass s is made up of soils that have soil limitations within the rooting zone, such as shallowness of the rooting zone, stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium content.

Subclass c is made up of soils for which the climate (the temperature or lack of moisture) is the major hazard or limitation affecting their use.

Application. The subclass represents the dominant limitation that determines the capability class. Within a capability class, where the kinds of limitations are essentially equal, the subclasses have the following priority: e, w, s, and c. Subclasses are not assigned to soils in capability class I (1) and subclass "e" is not used in class V (5).

### Capability unit.

Definition. Capability unit is the first category listed in the land capability classification system. It is a grouping of one or more individual soil mapping units having similar potentials and continuing limitations or hazards.

Application. Use of this category and definition of codes are state options. Valid entries in NASIS are integers ranging from 1 to 99.

Entries. Enter the appropriate capability class and subclass code for each map unit component, including miscellaneous areas. Enter the appropriate capability unit code, if one is to be used in the area. Allowable entries for capability class are I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), or VIII (8). Allowable entries for subclass are e, w, s, or c. Enter subclass for all classes except class I (1) and subclass "e" is not used in class V (5). Valid entries for capability unit are integers ranging from 1 to 99. Nonirrigated land capability classes and subclasses should be entered for all map unit components, including miscellaneous areas. Enter the irrigated land capability class and subclass if the soil component is irrigated or potentially will be irrigated.



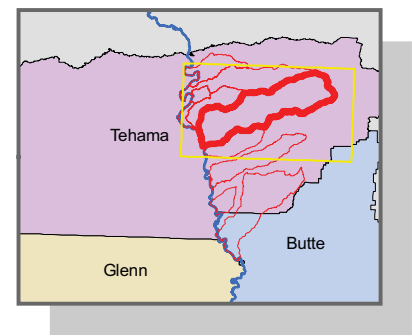
# Tehama East Watershed Assessment

## Land Capability Classification Antelope Creek

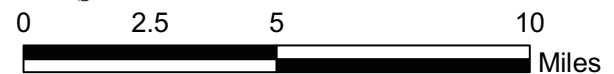
### KEY

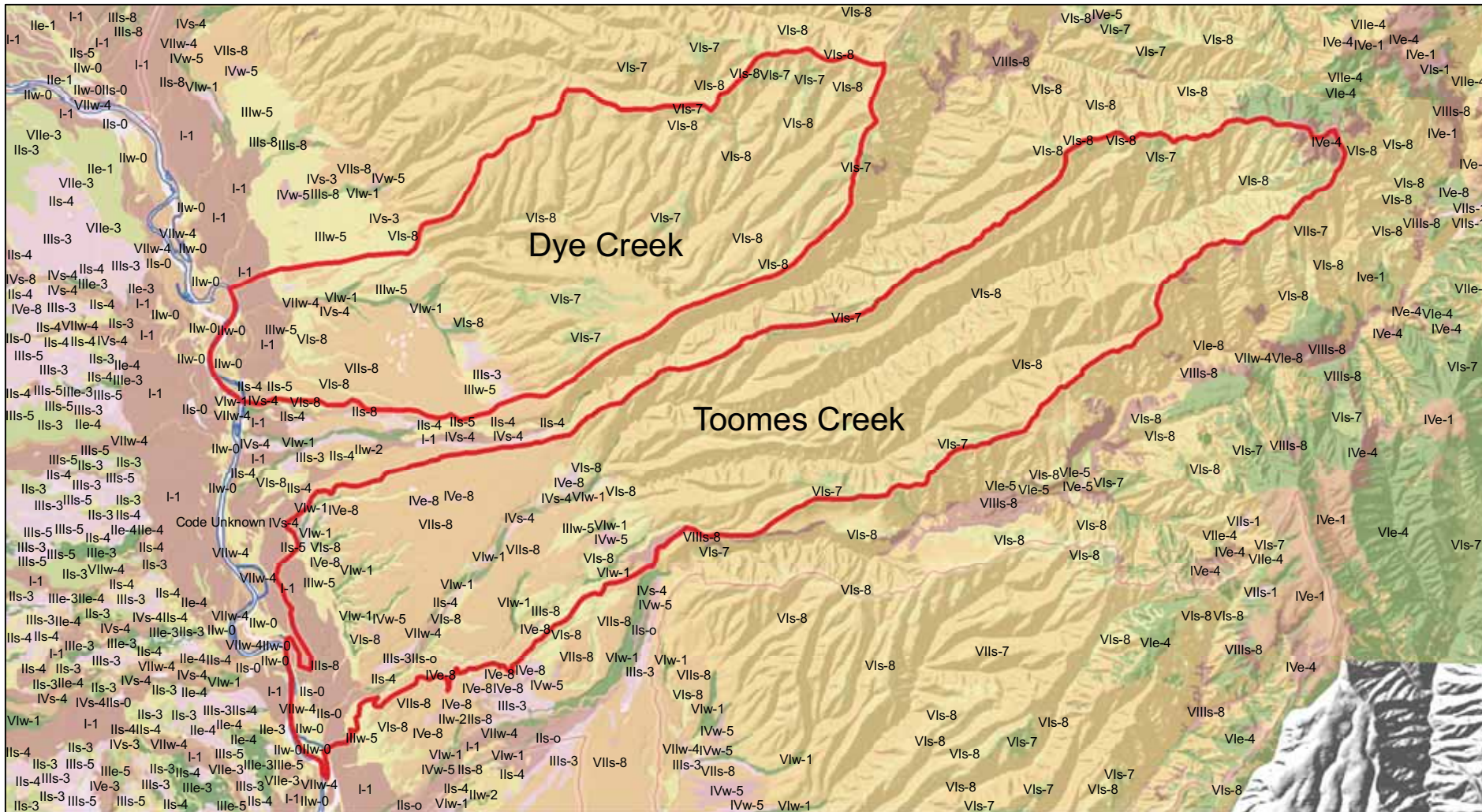
See Land Capabiity Classification Page

 Watershed Boundary



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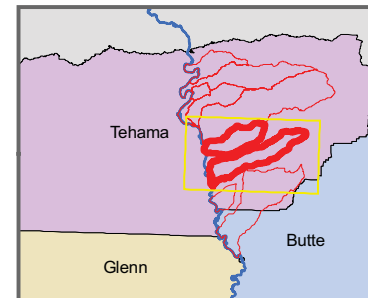
# Tehama East Watershed Assessment

## Land Capability Classification Dye and Toomes Creeks

### KEY

See Land Capabiity Classification Page

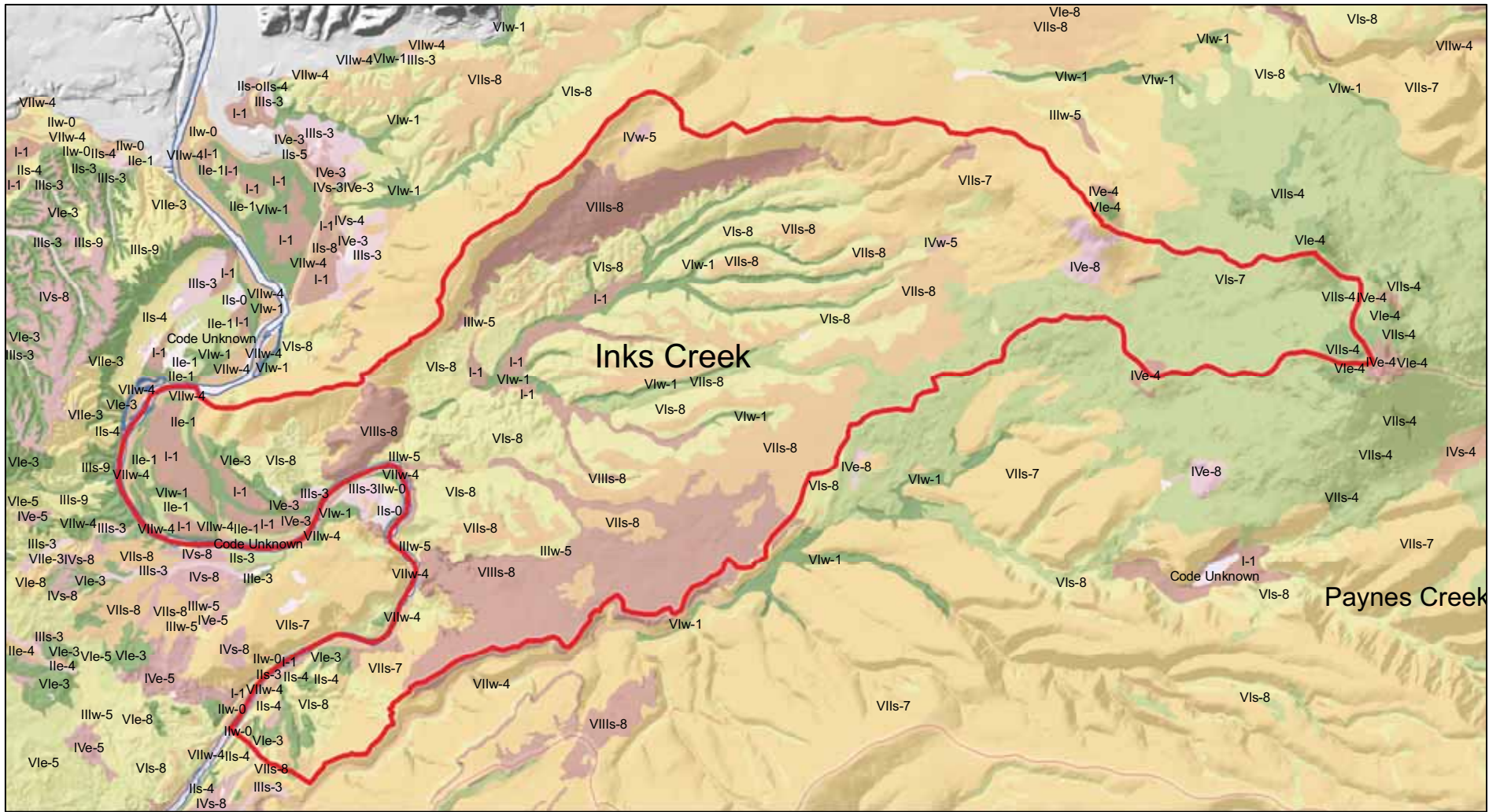
 Watershed Boundary



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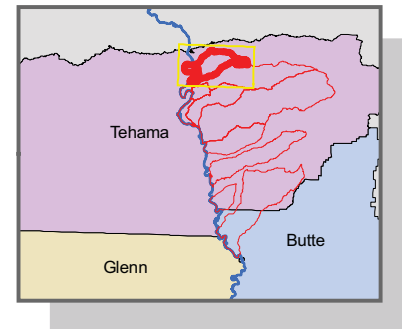
# Tehama East Watershed Assessment

## Land Capability Classification Inks Creek

### KEY

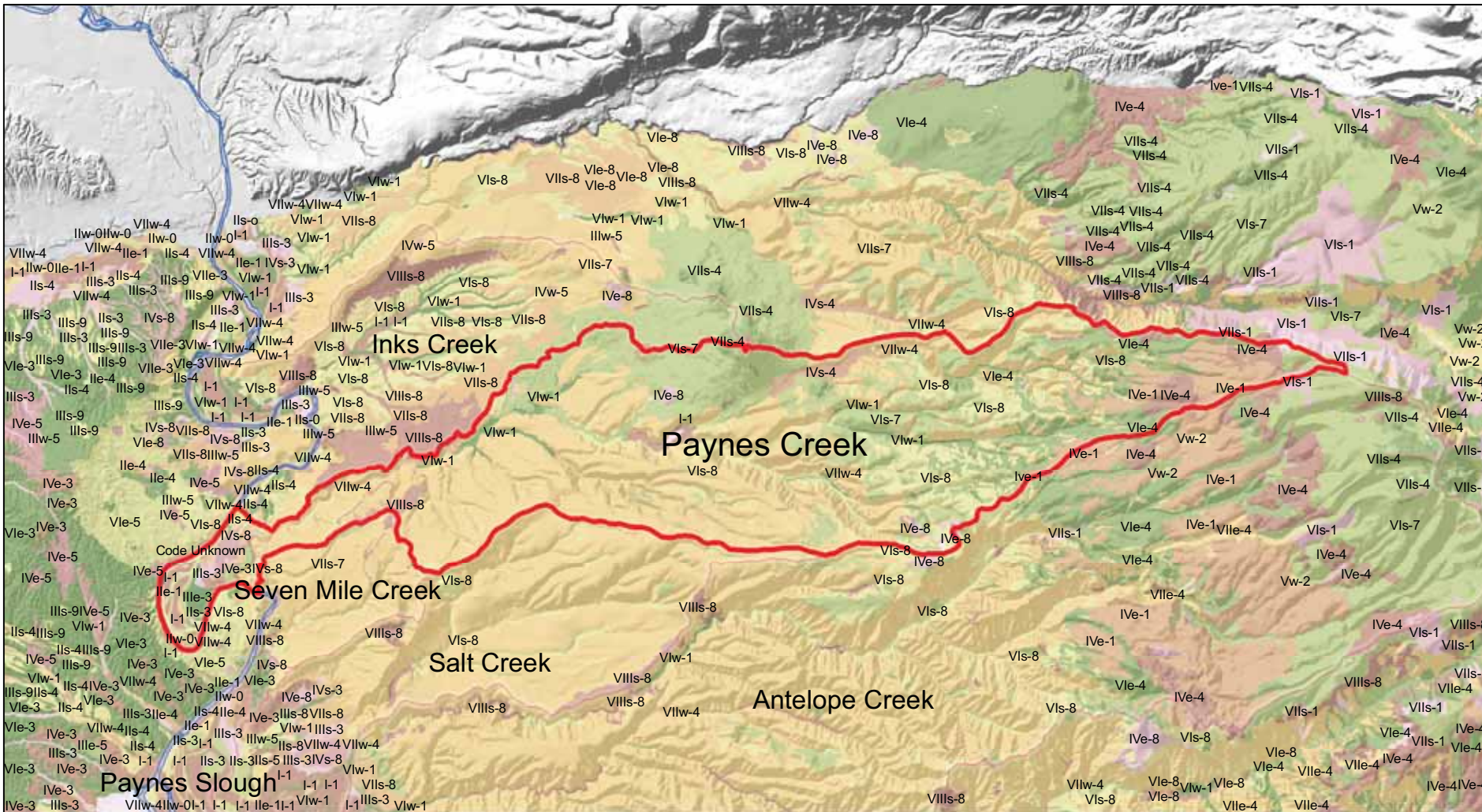
See Land Capabiity Classification Page

 Watershed Boundary



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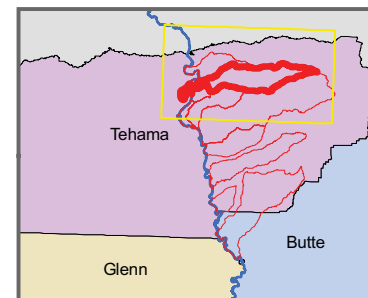
# Tehama East Watershed Assessment

## Land Capability Classification Antelope Creek

### KEY

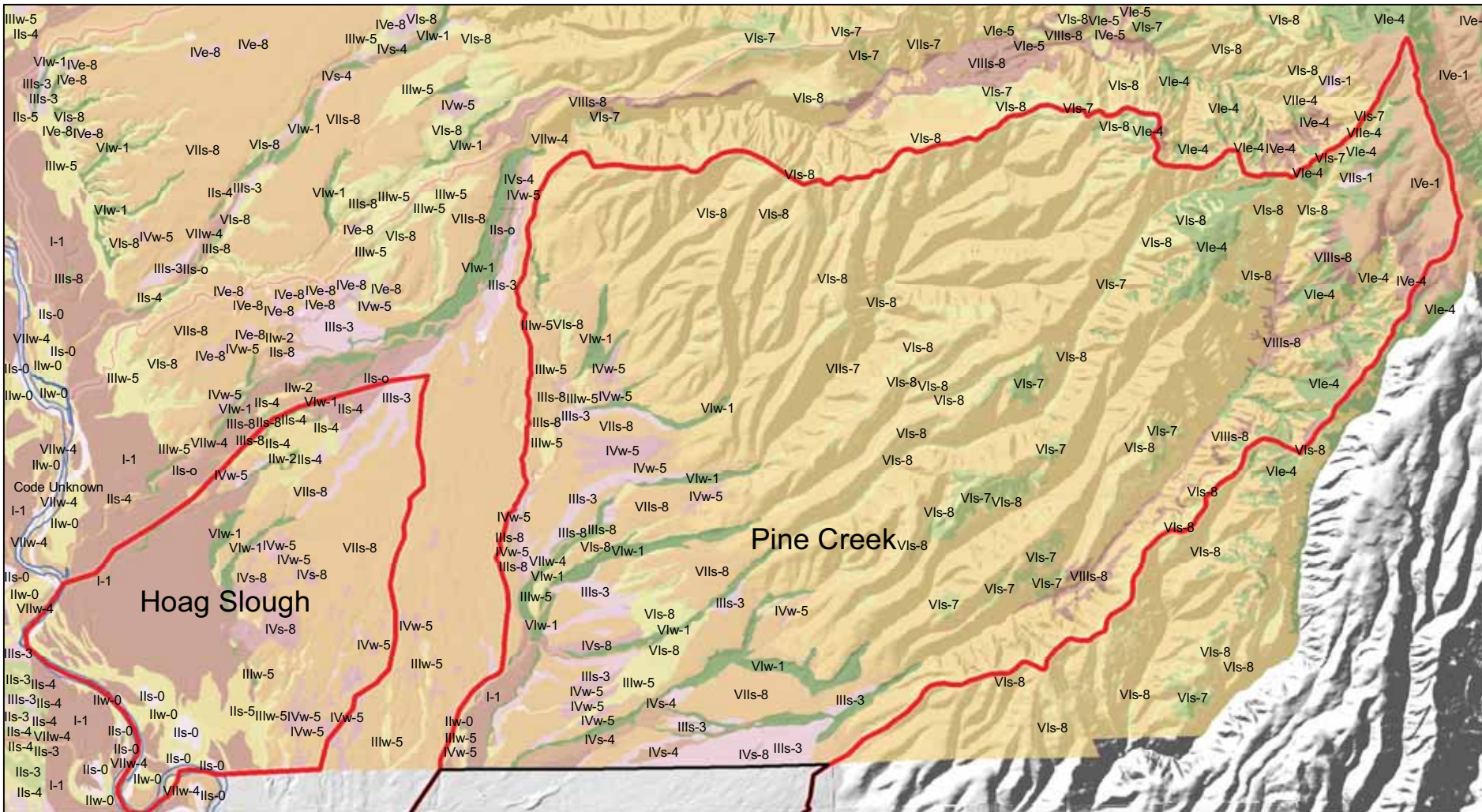
See Land Capabiity Classification Page

 Watershed Boundary



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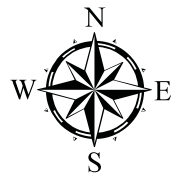
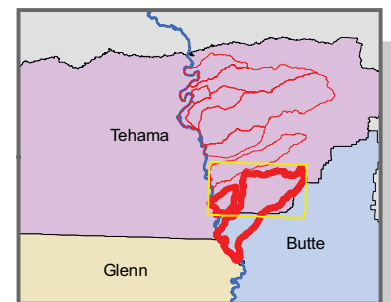
# Tehama East Watershed Assessment

## Land Capability Classification Hoag Slough and Upper Pine Creek

### KEY

See Land Capabiity Classification Page

 Watershed Boundary



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# Tehama East Watershed Assessment

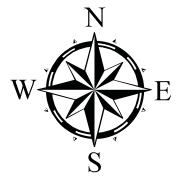
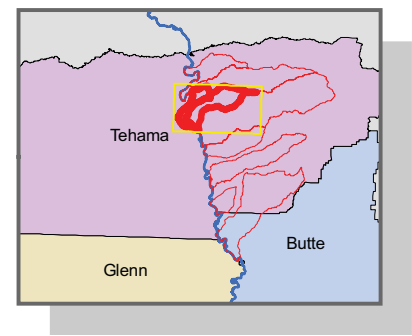
## Land Capability Classification

### Paynes Slough, Salt, and Seven Mile Creeks

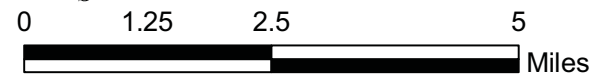
#### KEY

See Land Capabiity Classification Page

 Watershed Boundary



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Maps by Characteristics

Soils: NRCS Soil Survey

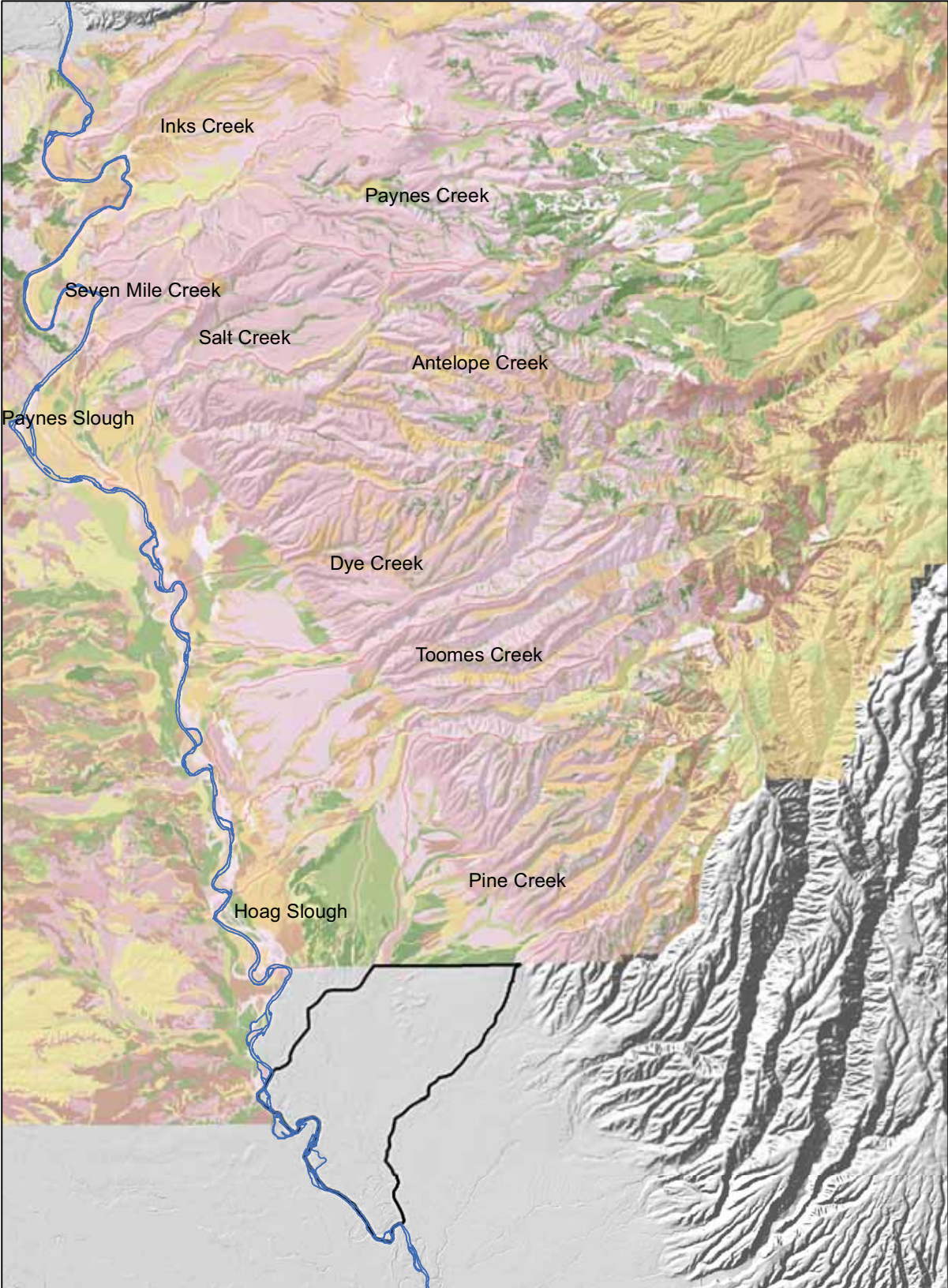
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# Tehama East Watershed Assessment

## NRCS Soils Tehama East Watersheds


"NRCS Soils includes soil surveys for each state, a manual for surveying soil, an urban soil primer for homeowners and local planning boards, and "tools for educators" -- lessons and information on soil taxonomy (the "12 orders of soil"), fundamental concepts about soil, soil biology, and soil risks and hazards. (Natural Resources Conservation Service, Department of Agriculture)"

Quoted from:  
[http://free.ed.gov/resource.cfm?resource\\_id=1596](http://free.ed.gov/resource.cfm?resource_id=1596)

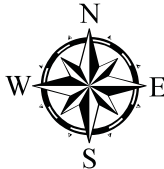


### KEY

See Soils Key

 Watershed Boundary

 South Pine Creek Watersheds within the Butte County Soils Database



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# Tehama East Watershed Assessment

NRCS Soils  
Tehama East Watersheds

Soil Survey  
MUSYM

AaD	Cb	CyB	IcD	LaD	MmE	NhE	PrD2	TfD	WnD
AbD	Cc	Cz	IcE	LbB	MmF	NkB	PrE	TfE	WnE
AbE	CdD	CzD	IkD	LgF	MnE	NmB	PsE	TgD	WnF
AcA	CdE	Czs	IkE	Lk	Mo	NnF	PvB	TgE	WrE2
AcB	CeD	Czx	ImD	Lm	Mp	NoF	Rb	ThE	WsD
AcD	CfD	DbD	ImE	Ln	Mr	NrB	Rg	TkB	WsE
Ad	CfE	DgD	IrD	Lo	Mw	NrB2	Rh	TkD	Wy
Af	CgD	DnD	IrE	LsD	Mx	NrD	Rm	TmD	Wz
Ag	CgE	DxD	IrF	LtD	My	NrD2	RnA	TmE	Yo
An	ChD2	DxE	IsE	LvD	Mz	NrE	RnB	TnD	Ys
Ao	CkF	EgB	IxE	LvE	Mzd	NrE2	Ro	TnE	Yt
Ap	ClF	Ew	JgD	LvF	Mzm	NrF	Rr	ToE	Za
AsB	CmA	Fa	JgD2	LyD	Mzr	NvD	RtF	TsB	Zc
At	CmB	FoD	JgE	LyE	Mzs	NvE	RuF	TtB	Zm
Au	Cn	GP	JgE2	LyF	Mzt	NwD	ScD	TuB	Zo
AvA	Co	GgF	JgF	M-W	NODIG	NwE	ScE	TvB	
AvB	CpB	GnD	JgF2	MaD	NaD	Of	SnD	TwB	
Aw	CsA	GnE	Kc	Mc	NaE	Om	SnE	TxC	
Ay	CsB	GsD	Kf	Md	NaE2	Op	SnF	Vd	
Az	Ct	GsE	Km	Me	NcB	Or	SuD	VnA	
Bc	Cu	HgA	Kn	Mf	NcD	Os	SuE	VnB	
Bd	CvD	HgB	KoA	Mg	NcD2	PkA	TaA	Vw	
Bg	CvE	Hk	KoB	Mh	NcE2	PkB	TaB	Vy	
Bh	CwA	Hl	KpA	MkD	NhB	Pm	Tb	W	
BuD	CwB	HvD	KpB	MkE	NhD	PrB	Tc	WgD	
CaC	CxB2	HvE	LaB	MkF	NhD2	PrD	TeF	WgE	

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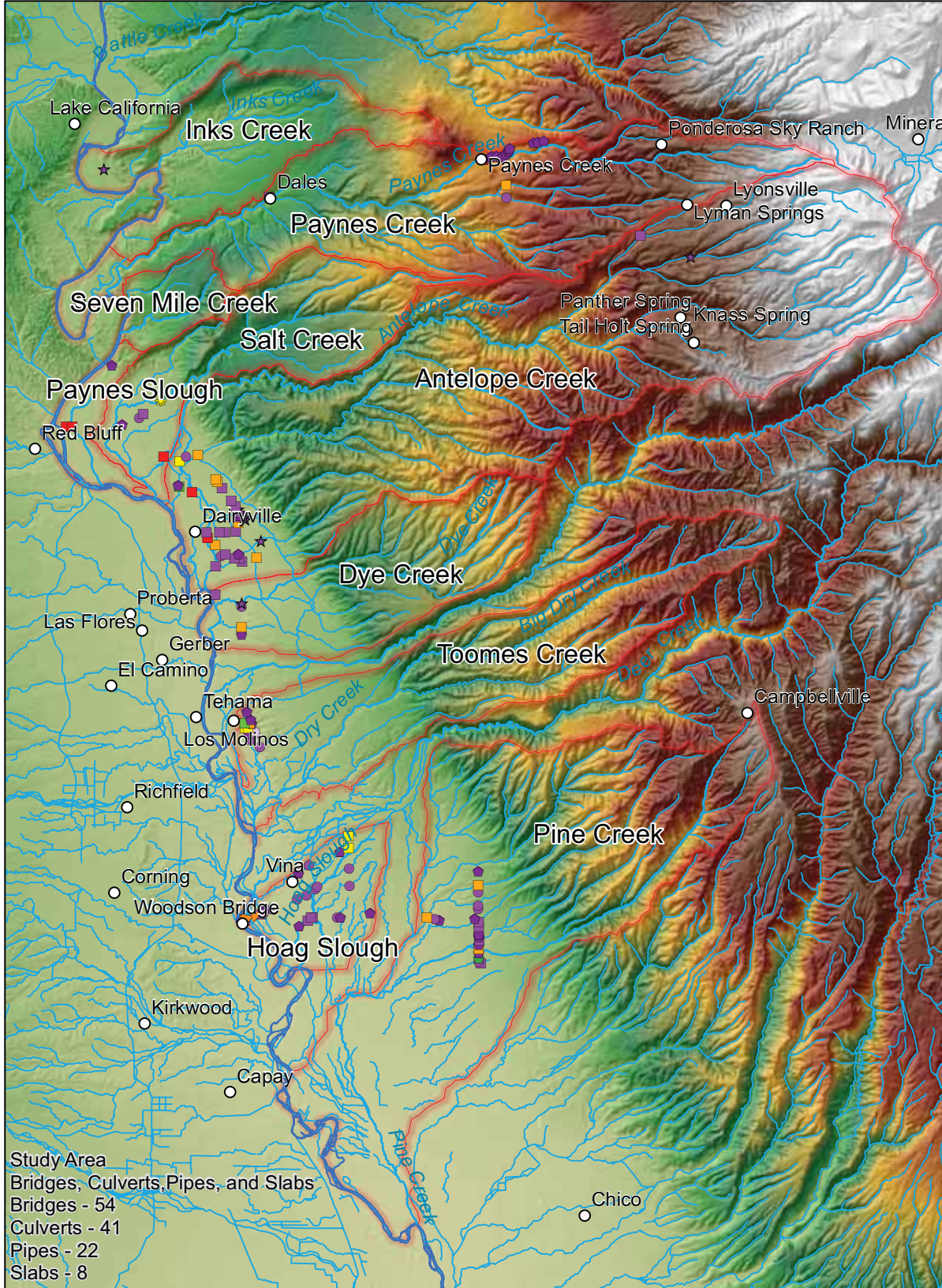
# Tehama East Watershed Assessment

## Bridges, Culverts, Pipes, and Slabs

### Tehama East Watersheds

"For habitat protection, ecological connectivity should be a goal of stream-road crossing designs. The narrowest scope of crossing design is to pass floods. The next level is requiring fish passage. The next level includes sizing the crossing for sediment and debris passage. For ecosystem health, "ecological connectivity" is necessary. Ecological connectivity includes fish, sediment, debris, other organisms and channel/floodplain processes. Ken Bates - WDFW"

Quoted from:  
[nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3546](http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3546)

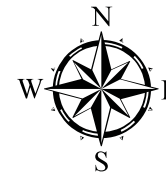


#### KEY

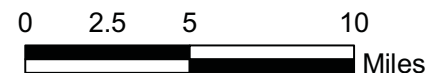
- Bridge-Abandoned
- Bridge-Green
- Bridge-Orange
- Bridge-Purple
- ◄ Bridge-Purple/Green
- ◄ Bridge-Purple/Orange
- Bridge-Red
- Bridge-Yellow
- ★ Bridge-Yellow (One Lane)
- Culvert-Green
- ◄ Culvert-Orange/Green
- Culvert-Purple
- Culvert-Yellow
- Pipe-Purple (Non County)
- Pipe-Abandoned
- Pipe-Purple
- ★ Slab-Abandoned
- ★ Slab-Purple

Tehama County Public Works Department

Watershed Boundary



Tehama County Resource  
 Conservation District  
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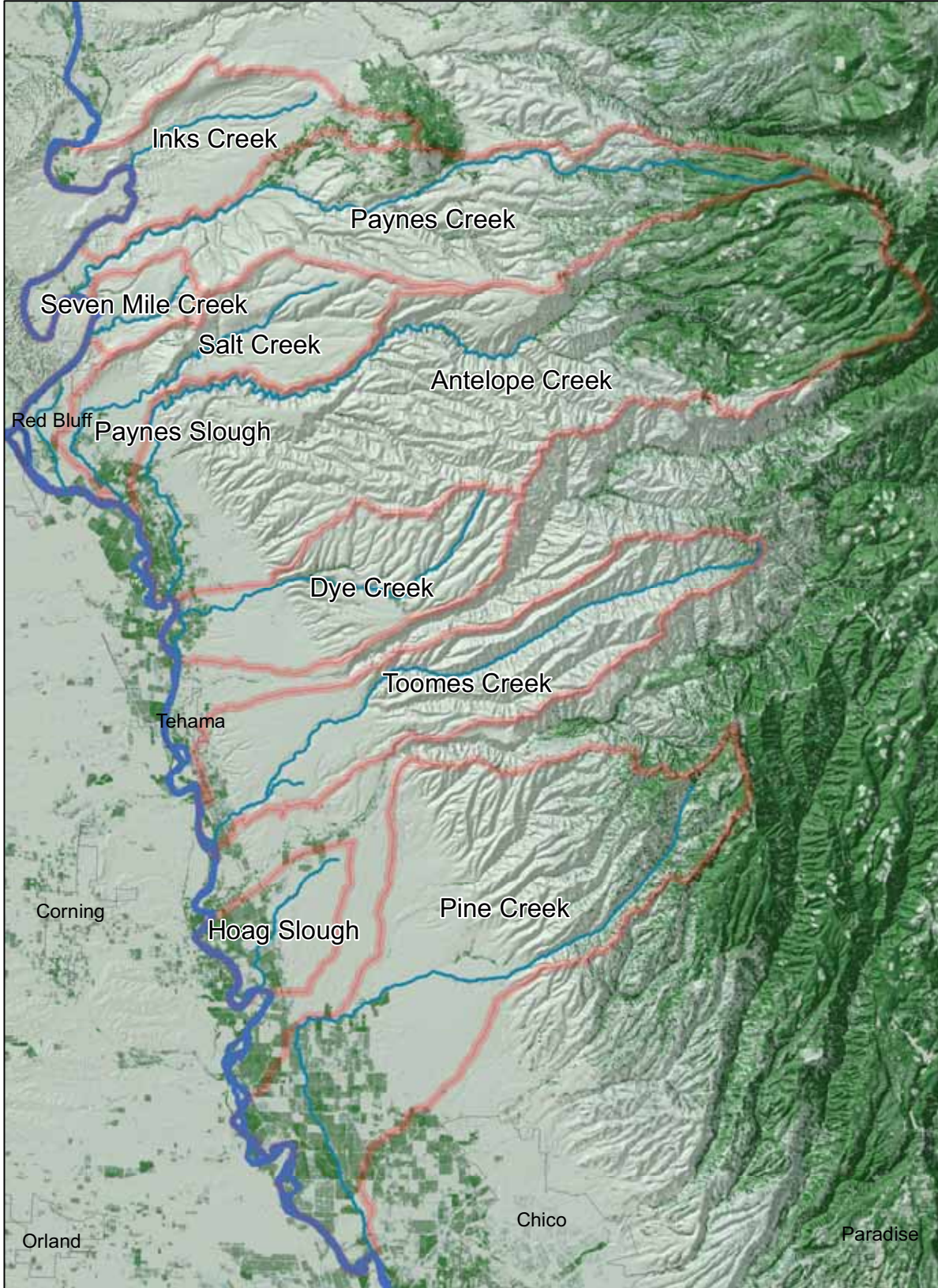
Study Area  
 Bridges, Culverts, Pipes, and Slabs  
 Bridges - 54  
 Culverts - 41  
 Pipes - 22  
 Slabs - 8

# Tehama East Watershed Assessment

## Canopy Cover Pine Creek & Hoag Slough

Background from USGS: "The National Land Cover Characterization project is part of the interagency Multi-Resolution Land Characterization (MRLC) initiative involving three divisions of the US Geological Survey (National Mapping Division, Water Resources Division, and the Biological Resources Division), the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, and the US Forest Service. These agencies have a requirement for a nationally consistent land cover dataset, and in 1993 these agencies combined financial resources to purchase Landsat Thematic Mapper data covering the entire United States. The USGS/EROS Data Center took the lead to process the data and develop the National Land Cover Dataset (NLCD). Procedures to evaluate the accuracy of the final product have been developed, and private contractors are completing accuracy assessments."

<http://www.lib.ncsu.edu/gis/nlcd.html>

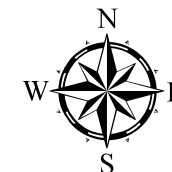


### KEY

#### Canopy Cover Percent

- 0 - 15%
- 15 - 41%
- 41 - 60%
- 60 - 76%
- 76 - 100%

- Urban Areas
- Streams/Rivers
- Watershed Boundary



Tehama County Resource Conservation District

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# Tehama East Watershed Assessment

## Critical Habitat Spring-Run Chinook





"Four distinct runs of Chinook salmon spawn in the Sacramento-San Joaquin River system, named for the season when the majority of the run enters freshwater as adults. Spring-run Chinook enter the Sacramento River from late March through September. Adults hold in cool water habitats through the summer, then spawn in the fall from mid-August through early October. Spring-run juveniles migrate soon after emergence as young-of-the-year, or remain in freshwater and migrate as yearlings.

Spring-run Chinook were historically the most abundant race in the Central Valley. Now only remnant runs remain in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River. In the mainstem Sacramento River and the Feather River, early-running Chinook salmon occur, but significant hybridization with fall-run has occurred. Due to the small number of non-hybridized populations remaining and low population sizes, Central Valley spring-run were listed as threatened under both the state and federal endangered species acts in 1999."

"This dataset depicts areas designated for Chinook Critical Habitat as well as habitat type and quality in the Central Valley Spring-run Evolutionarily Significant Unit (ESU). These data represent the stream segments identified as Critical Habitat by the National Marine Fisheries Service (NOAA Fisheries) Southwest Regional Office (SWR). The linework for this layer is based on the California Department of Fish and Game (CDFG) and Pacific States Marine Fisheries Commission (PSMFC) 1:100,000 scale stream based routed hydrography. SWR biologists divided the routed hydrography into stream segments using the best available information to represent local Chinook distribution and habitat."

Quoted from: <http://www.dfg.ca.gov/fish/Resources/Chinook/CValleySpring.asp>  
[http://www.calfish.org/Portals/0/DataMaps/DataDownload/Chinook\\_Abundance\\_Metadata.htm](http://www.calfish.org/Portals/0/DataMaps/DataDownload/Chinook_Abundance_Metadata.htm)

### KEY

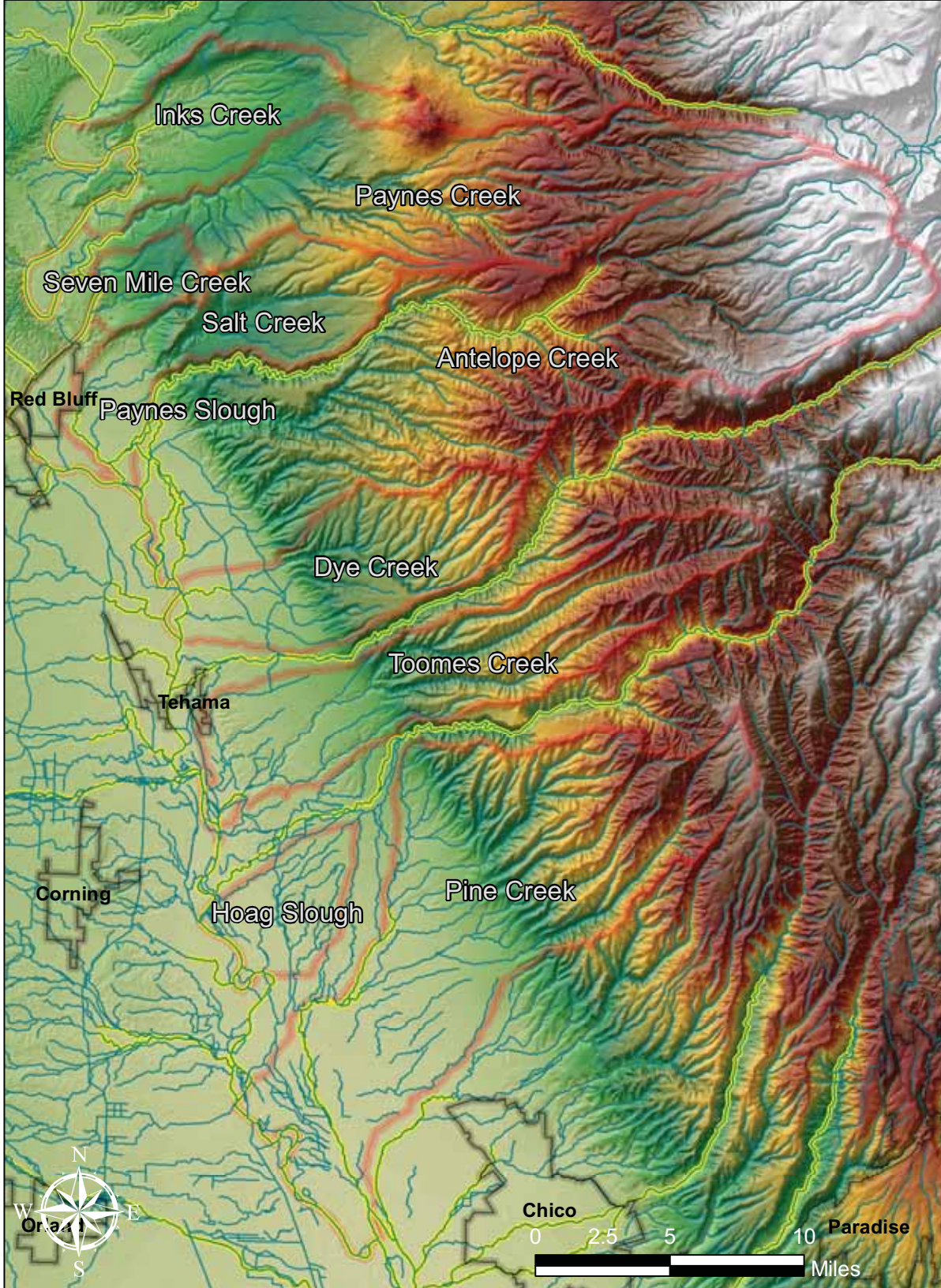
-  Critical Habitat Spring-Run Chinook
-  Streams/Rivers
-  Urban Areas
-  Watershed Boundary



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<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>



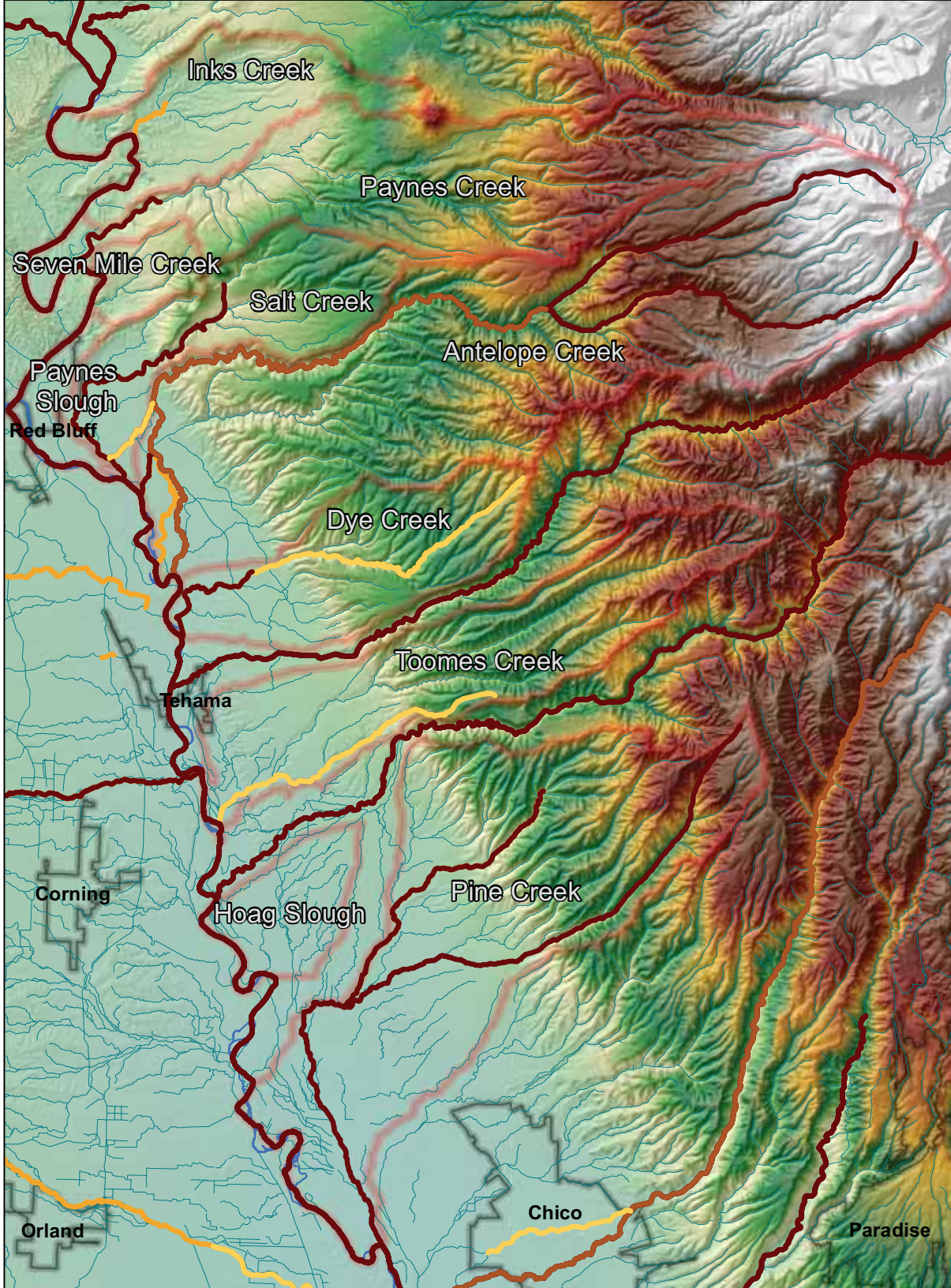
# Tehama East Watershed Assessment

## Chinook Surveys By Year





"The CalFish Abundance Database was generated from fully routed 1:100,000 hydrography. In a few cases streams had to be added to the hydrography dataset in order to provide a means to create shapefiles to represent abundance data associated with them. Streams added were digitized at no more than 1:24,000 scale based on stream line images portrayed in 1:24,000 Digital Raster Graphics (DRG).

These features generally represent abundance counts resulting from stream surveys. The linear features in this layer typically represent the location for which abundance data records apply. This would be the reach or length of stream surveyed, or the stream sections for which a given population estimate applies. In some cases the actual stream section surveyed was not specified, and linear features represent the entire stream. In many cases there are multiple datasets associated with the same length of stream, and so linear features overlap."

Quoted from:  
[http://www.calfish.org/Portals/0/DataMaps/DataDownload/Chinook\\_Abundance\\_Metadata.htm](http://www.calfish.org/Portals/0/DataMaps/DataDownload/Chinook_Abundance_Metadata.htm)



### KEY

- |   |                    |   |
|---|--------------------|---|
|    | Streams/Rivers     | <b>Year of Survey</b>   |
|  | Urban Areas        |  1959 - 1970   |
|  | Watershed Boundary |  1971 - 1986   |
|   |                    |  1987 - 1993 |
|   |                    |  1994 - 1998 |
|   |                    |  1999 - 2003 |

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>



Tehama County Resource Conservation District

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# Tehama East Watershed Assessment






## Post-fire Erosion Potential Tehama East Watersheds

"This data represents FRAP's best estimate of the Revised Universal Soil Loss Equation (RUSLE) in a post-wildfire environment. FRAP adapted RUSLE, used for agricultural soil loss, for wildland post-fire erosion based on the interaction of fire threat (FTHRT04\_1) and vegetation (FVEG02\_2) cover. The resulting soil loss estimates are grouped into 3 erosion classes (Low, Moderate, and High)."


Quoted from:  
<http://frap.cdf.ca.gov/data/frapgisdata/output/period.txt>

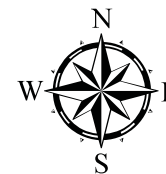
### KEY

#### Erosion Classification

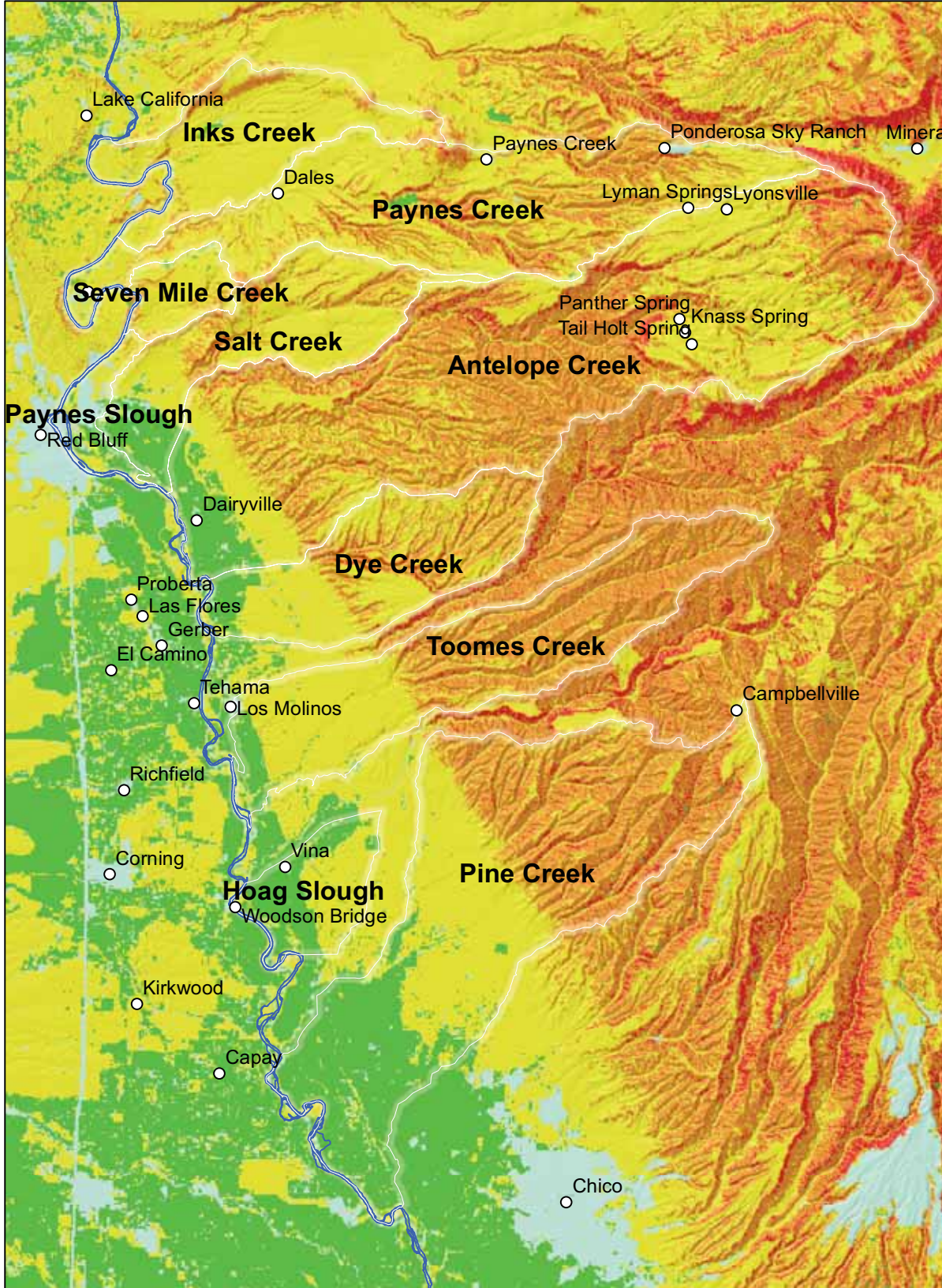
-  -1 : Areas without a Fuel Rank (generally Ag or Barren)
-  0 : Water and Urban areas outside scope of analysis
-  1 : Low
-  2 : Moderate
-  3 : High

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=period>

 Watershed Boundary



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# Tehama East Watershed Assessment

## Fire Regime and Condition Class

### Condition Class

Tehama East Watersheds

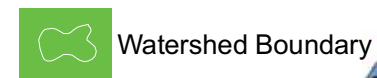
"Condition class refers to the general deviation of ecosystems from their presettlement natural fire regime (See REGIME and REGIME\_CAL), and can be viewed as a measure of sensitivity to fire damage to key elements and processes typical of those ecosystems, or fire-related risk to ecosystem health. Fundamental to this idea is that current expected fires are compared to historic fire regimes with respect to fire frequency, size and patchiness, and effects on key ecosystem elements and processes. Thus, these classes are then assigned based on current vegetation type and structure, an understanding of its pre-settlement fire regime, and current conditions regarding expected fire frequency and potential fire behavior. As a result of these efforts, Condition Classes were defined as the relative risk of losing key components that define an ecosystem (Hardy et al., 2001). The conceptual basis is that for fire-adapted ecosystems, much of their ecological structure and processes are driven by fire, and disruption of fire regimes leads to changes in plant composition and structure, uncharacteristic fire behavior and other disturbance agents (pests), altered hydrologic processes and increased smoke production. Condition Class 1 is associated with low level disruption of fire regime, and consequently low risk to loss or damage. Condition Class 2 indicates some degree of departure from natural regimes, with associated changes in ecosystem composition and structure that render future fires a likelihood of some loss and change in elements and processes. Condition class 3 is highly divergent from natural regime conditions, and presents the highest level of risk of loss." Quoted from: <http://frap.cad.ca.gov/data/frapgisdata/output/cafrcc.txt>

### KEY

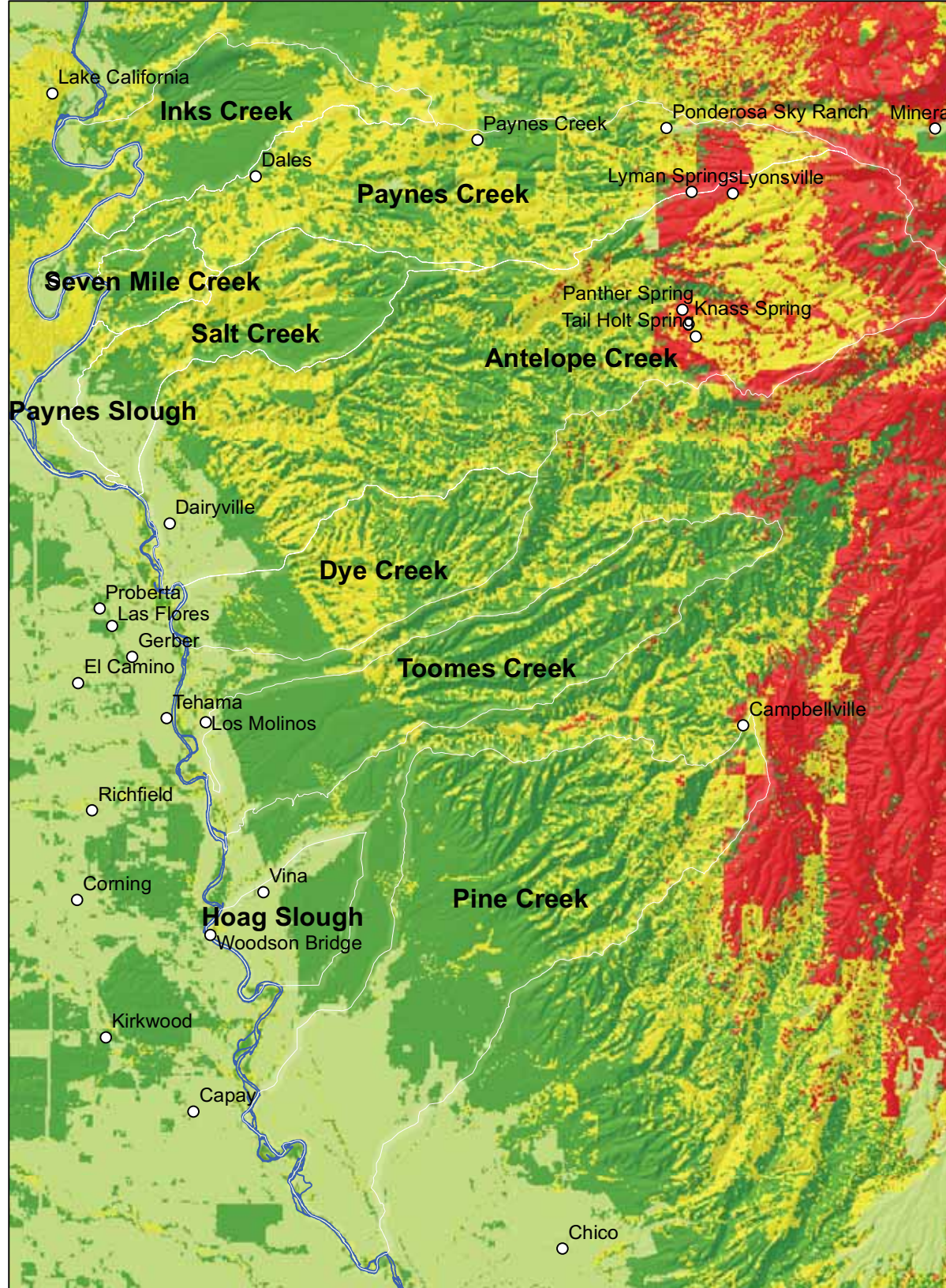
#### Condition Class



<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=cafrcc>



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# Tehama East Watershed Assessment

## Fire Hazard Severity Zoning 2007 DRAFT - FRAP Tehama East Watersheds






"The goal of this mapping effort is to create more accurate fire hazard zone designations such that mitigation strategies are implemented in areas where hazards warrant these investments. The fire hazard zones will provide specific designation for application of defensible space and building standards consistent with known mechanisms of fire risk to people, property, and natural resources.

This specific dataset provides DRAFT zones in ALL jurisdictions, for the purpose of review and comment prior to release of adopted zones in SRA and recommendations for Very High Fire Hazard Severity Zones (VHFHSZ) in LRA areas."


Quoted from:  
<http://frap.cdf.ca.gov/data/frapgisdata/data%20dictionaries/fhszall06a1.xml>

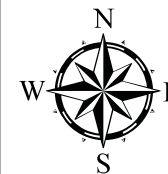
### KEY

#### Hazard Class

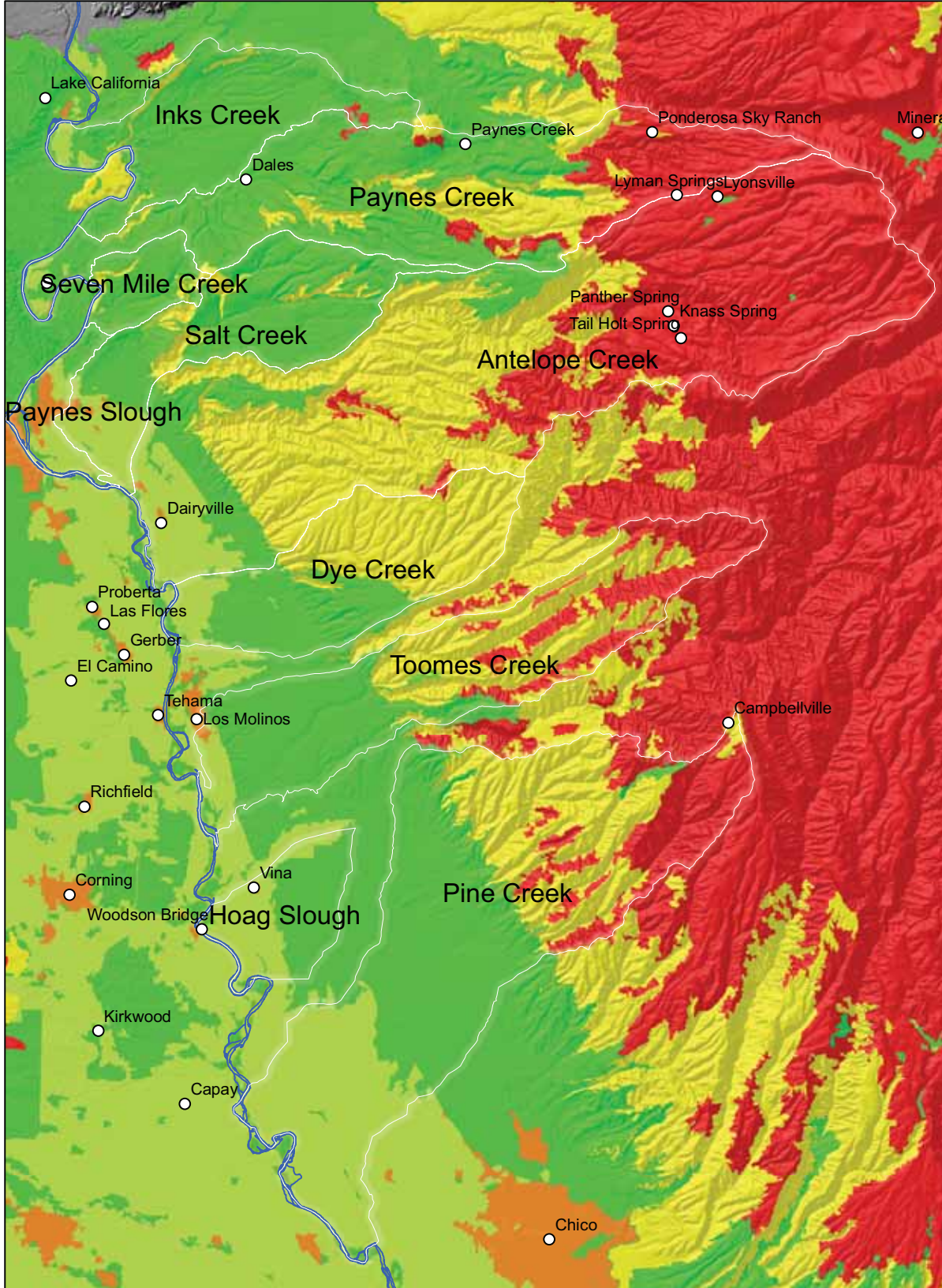
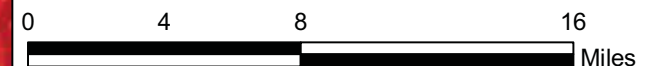
-  Moderate
-  High
-  Very High
-  Non-Wildland/Non-Urban
-  Urban Unzoned

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=2&rec=fhszall06a1>

-  Watershed Boundary



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# Tehama East Watershed Assessment





## Fire Regime and Condition Class Fuel Ranking Tehama East Watersheds

"CDF has developed a Fuel Rank assessment methodology for the California Fire Plan to identify and prioritize pre-fire projects that reduce the potential for large catastrophic fire. The fuel ranking methodology assigns ranks based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (wind speed, humidity, and temperature). The procedure makes an initial assessment of rank based on an assigned fuel model (see surface fuels) and slope; then potentially increases ranks based on the amount of ladder and/or crown fuel present to arrive at a final fuel rank. Initially developed at a 30 meter scale, this 100 meter representation of the data are combined with other data and used to identify wildfire threats."


Quoted from:  
<http://frap.cad.ca.gov/data/frapgisdata/output/cafrcc.txt>

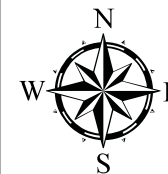
### KEY

#### Fuel Ranking

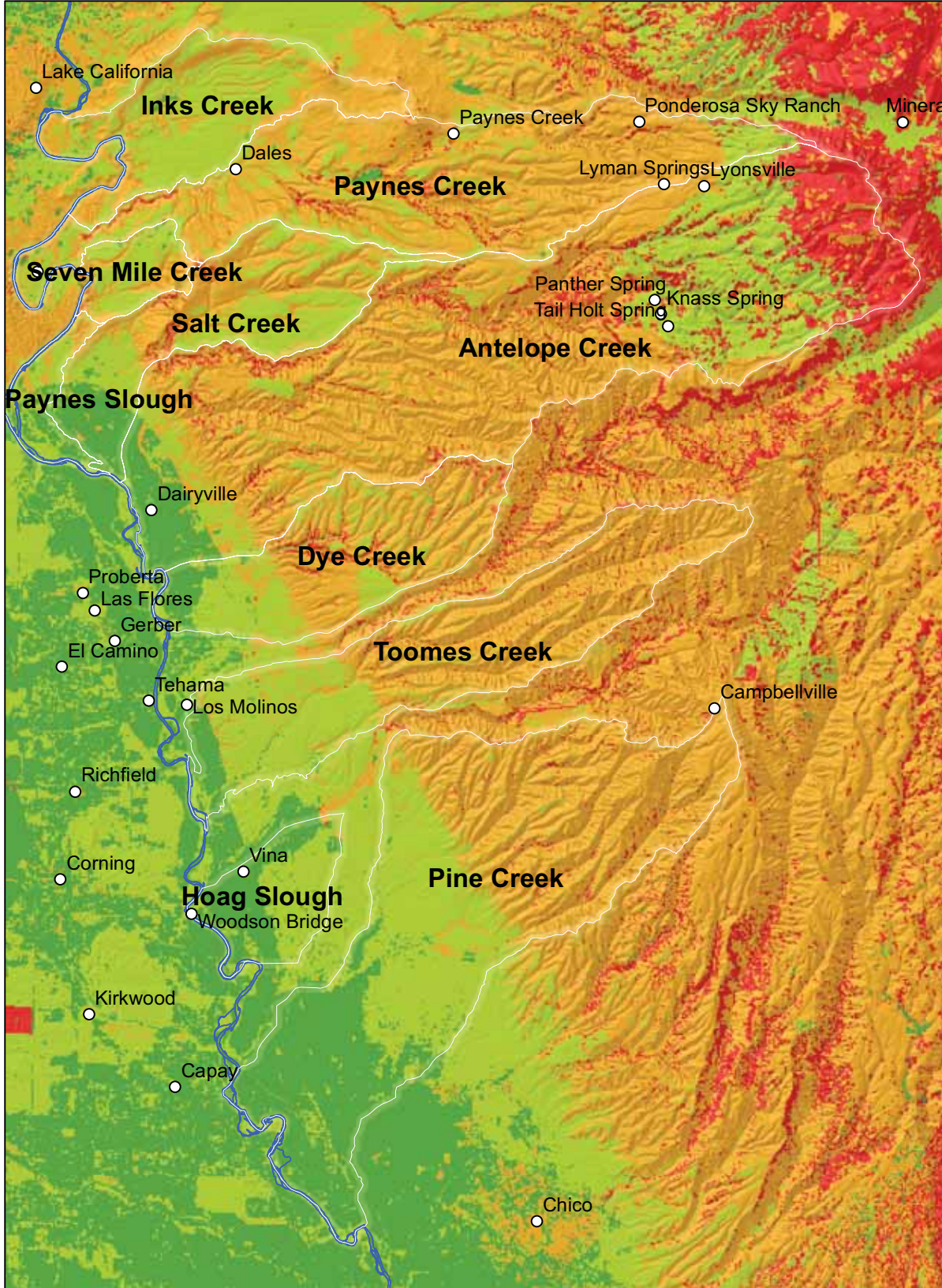
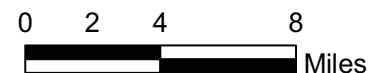
-  -1 - Little or No Hazard
-  1 - Moderate Hazard
-  2 - High Hazard
-  3 - Very High Hazard

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=cafrcc>

 Watershed Boundary



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Conservation District  
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# Tehama East Watershed Assessment

## Fire Regime and Condition Class

### Fire Rotation Class

#### Tehama East Watersheds





"Fire rotation class intervals are calculated from fifty years of fire history on land areas grouped into "strata" based on fire environment conditions. These strata are defined by climate, vegetation, and land ownership. The Fire Rotation interval is the number of years it would take for past fires to burn an area equivalent to the area of a given stratum. Fire rotation interval for a given stratum is calculated by dividing the annual number of acres burned into the total area of the stratum. Finally, fire rotation values are grouped into classes.

The larger fire rotation values correspond to less frequent burning. In contrast, the higher the rotation class value is, the more frequent fire is in that strata. In the fire threat analysis, more frequent fire is ranked higher to reflect a greater concern for non-fire tolerant assets such as housing."

Quoted from:  
<http://frap.cad.ca.gov/data/frapgisdata/output/cafrcc.txt>

### KEY

#### Fire Rotation Class

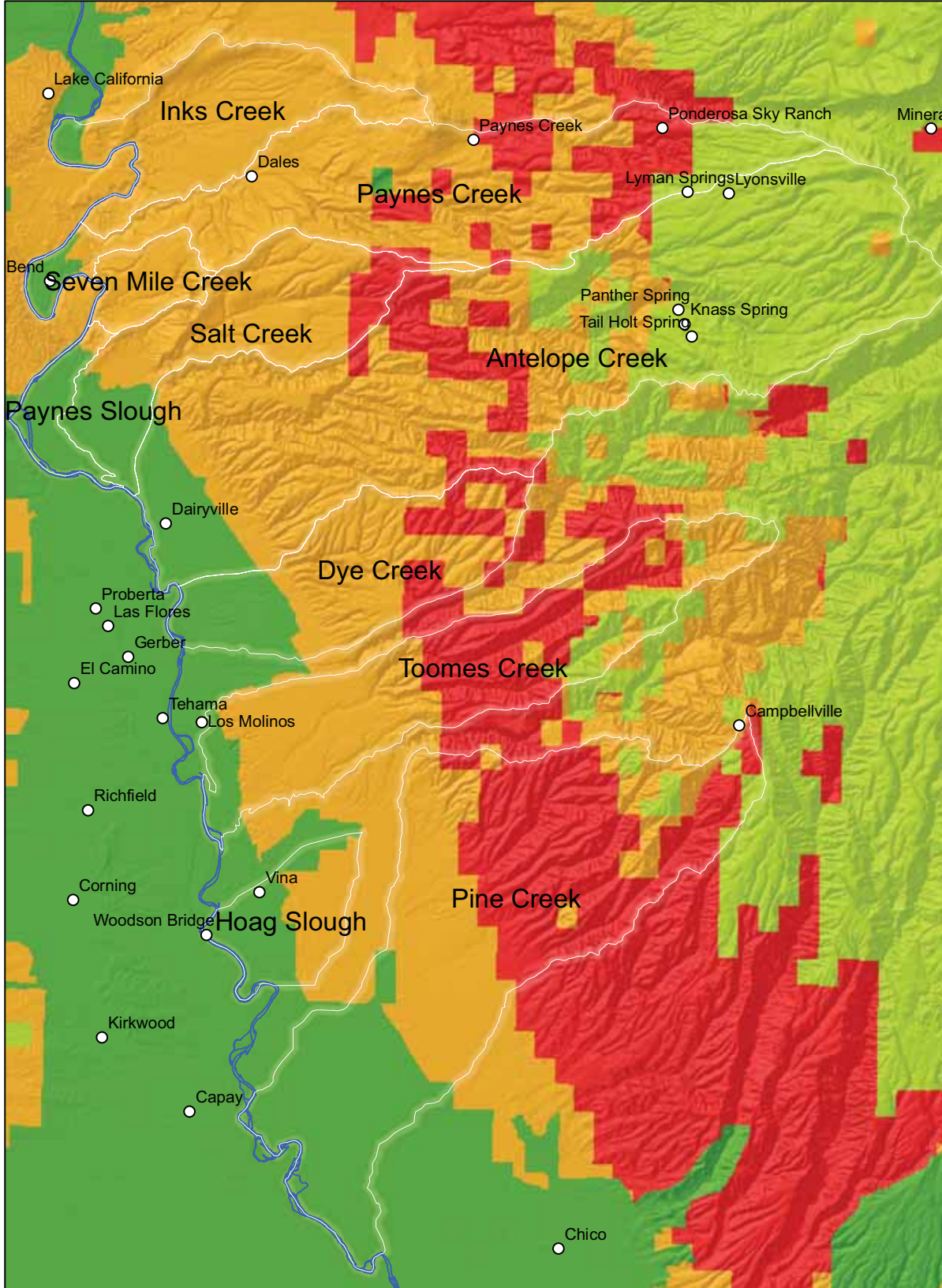
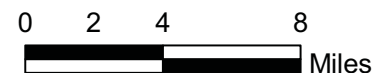
	Description	Number of Years
	0 Undetermined	Undetermined
	1 Moderate	> 300 Years
	2 High	100 - 300 Years
	3 Very High	< 100 Years

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=cafrcc>

 Watershed Boundary



Tehama County Resource Conservation District  
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











# Tehama East Watershed Assessment




## Selected Geologic Formations, Fault Lines and Monoclines Tehama East Watersheds


Selected formations were chosen for their relative importance to the surface and ground flow of water, and their importance for other human activities.

### KEY

#### Selected Geology

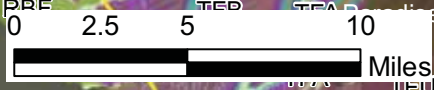
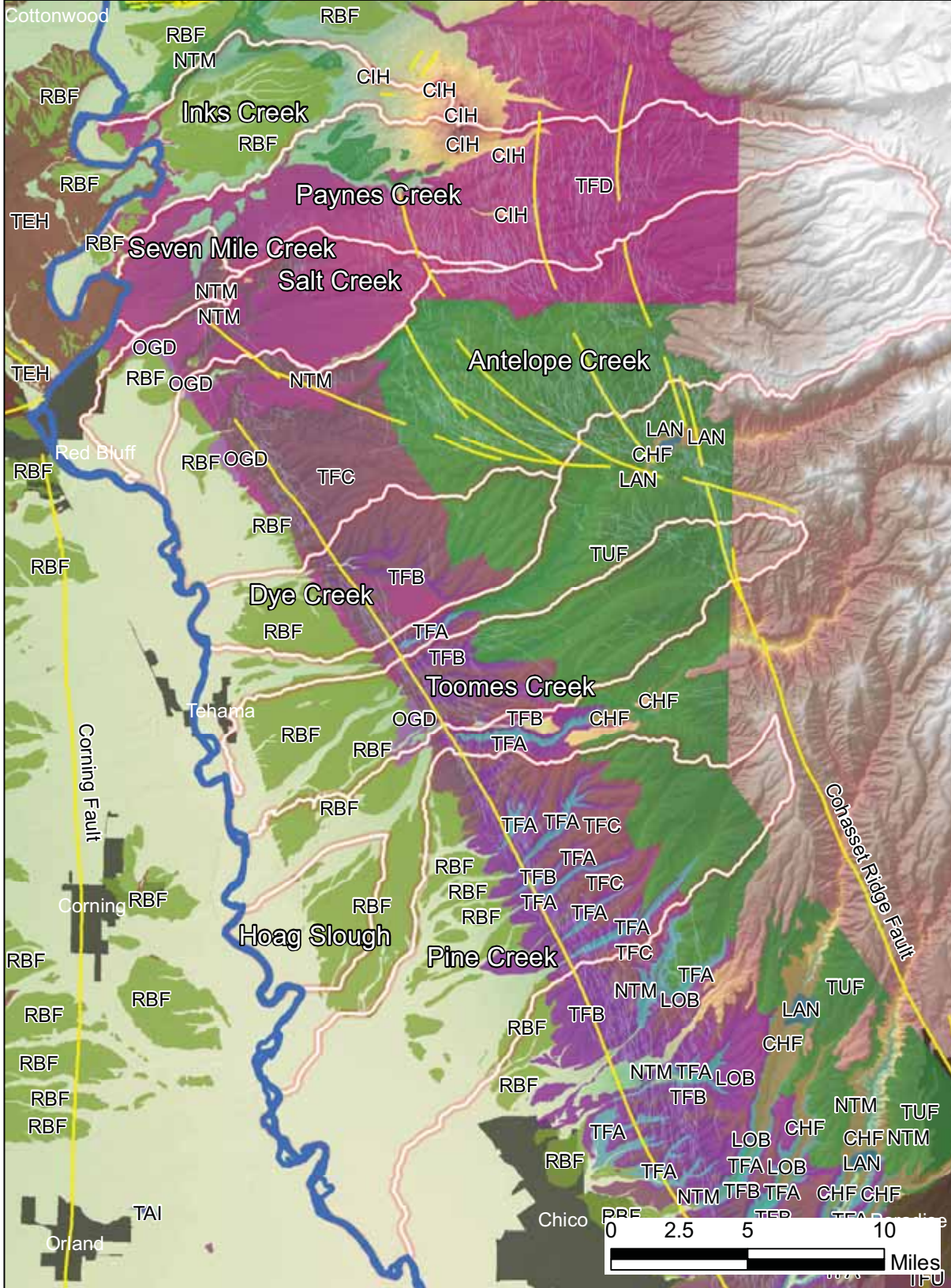
-  CHF Chico Formation
-  CBB Cinder Cone Deposits, Black Butte
-  CDB Cinder Cone Deposits, Digger Butte
-  CIH Cinder Cone Deposits, Inskipp Hill
-  LAN Landslides
-  LOB Lovejoy Basalt
-  NTM Nomlaki Tuff Member
-  OGD Older Gravel Deposits
-  RBF Red Bluff Formation
-  TAI Tailings
-  TEH Tehama Formation
-  TUF Tuscan Formation
-  TFU Tuscan Formation, Undifferentiated Unit A & B
-  TFA Unit A, Tuscan Formation
-  TFB Unit B, Tuscan Formation
-  TFC Unit C, Tuscan Formation
-  TFD Unit D, Tuscan Formation

-  Chico Monocline Lineaments
-  Fault Lines
-  Urban Areas

 Watershed Boundary  
<http://projects.atlas.ca.gov/projects/sacvalleygeol>



Tehama County Resource Conservation District  
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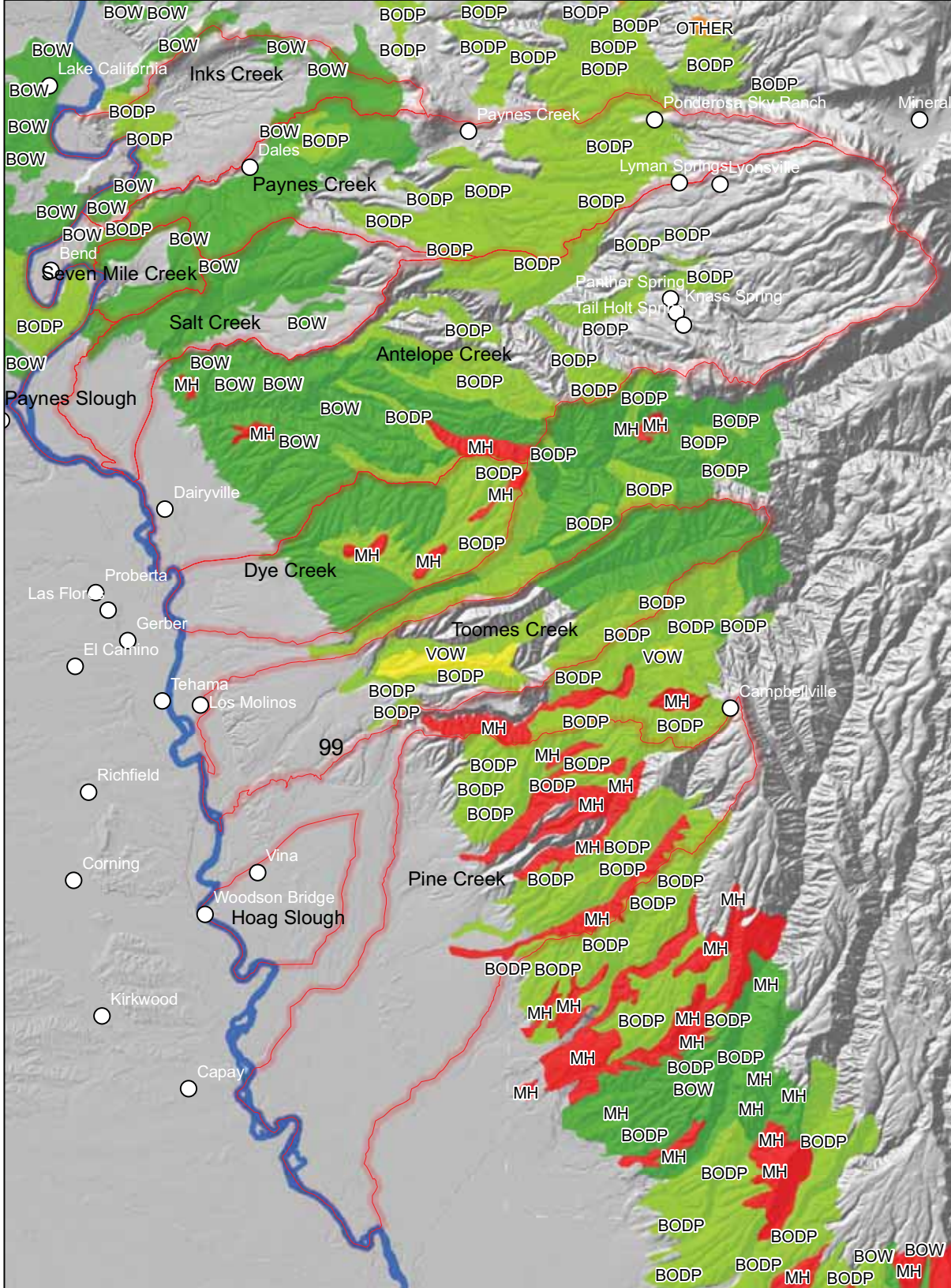
# Tehama East Watershed Assessment

## Hardwood Rangelands

### Tehama East Watersheds

"In response to concerns over the extent and condition of California's hardwood rangelands, the Board of Forestry asked the University of California, California Department of Forestry and Fire Protection, and the California Department of Fish and Game have developed a program of research, education, and monitoring designed to conserve hardwood rangelands. The resulting Integrated Hardwood Range Management Program (IHRMP) began in 1986. To analyze the extent and nature of hardwood changes, CDF instituted this project and others as part of a long-term monitoring program of IHRMP."

Quoted from:  
<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?rec=hardwoods>





**KEY**

**Cover Type**

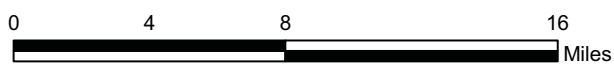
- BODP - Blue Oak \ Foothill Pine
- BOW - Blue Oak Woodland
- MH - Montane Hardwoods
- OTHER - Non-Hardwood
- VOW - Valley Oak Woodland

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?rec=hardwoods>

- Watershed Boundary
- Streams/Rivers
- Communities

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0 4 8 16 Miles

# Tehama East Watershed Assessment

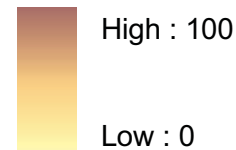
## Impervious Surfaces Tehama East Watersheds

Impervious surfaces are identified as an indicator of the impact of human development on water resources. Furthermore, impervious surfaces may have an effect on the infiltration rates of surface water locally and related effects downstream.

"The National Land Cover Database 2001 was produced through a cooperative project conducted by the Multi-Resolution Land Characteristics (MRLC) Consortium. The MRLC Consortium is a partnership of federal agencies ([www.mrlc.gov](http://www.mrlc.gov)), consisting of the U.S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), the U.S. Forest Service (USFS), the National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), and the USDA Natural Resources Conservation Service (NRCS). One of the primary goals of the project is to generate a current, consistent, seamless, and accurate National Land Cover Database (NLCD) circa 2001 for the United States at medium spatial resolution." Quoted from metadata at: [http://www.mrlc.gov/multizone\\_download.php?zone=2](http://www.mrlc.gov/multizone_download.php?zone=2)

### KEY

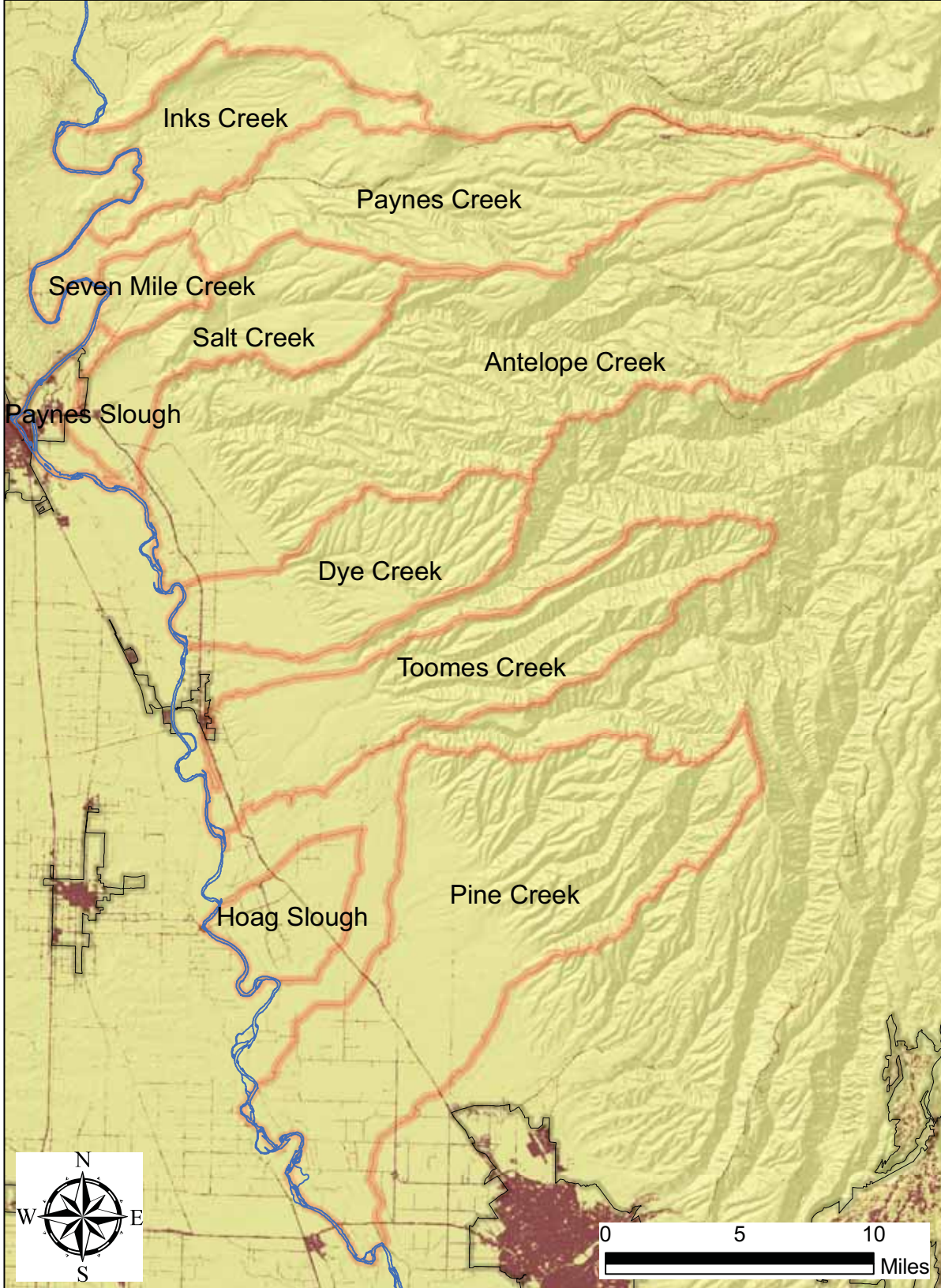
#### Impervious Surface By Percent



[http://www.mrlc.gov/multizone\\_download.php?zone=2](http://www.mrlc.gov/multizone_download.php?zone=2)

- Sacramento River
- Watershed Boundary
- Urban Areas

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# Tehama East Watershed Assessment

## Land Cover

### National Land Cover Database
















### Tehama East Watersheds

"Starting in 1999, new research was undertaken to expand and update NLCD 1992 into a full scale land cover database (with multiple instead of single products), and to produce it across all 50 states and Puerto Rico (Homer et al. 2004). This new database is called the National Land Cover Database 2001 (the 2001 refers to the nominal year from which most of the Landsat 5 and Landsat 7 imagery was acquired) and has been under production for 6 years."



#### Land Cover

"Sixteen classes of land cover were modeled over the conterminous United States at a 30m cell size with a 1 acre minimum mapping unit. Proportionately [on a national scale], the rarest class was perennial ice/snow at 0.02% of the total area and shrub/scrub the most common class at 21.03% of the total area." Quoted from: [http://www.mrlc.gov/pdf/July\\_PERS.pdf](http://www.mrlc.gov/pdf/July_PERS.pdf)

#### KEY

-  11 - Open Water
-  21 - Developed, Open Space
-  22 - Developed, Low Intensity
-  23 - Developed, Medium Intensity
-  24 - Developed, High Intensity
-  31 - Bare Rock/Sand/Clay
-  41 - Deciduous Forest
-  42 - Evergreen Forest
-  43 - Mixed Forest
-  52 - Shrub/Scrub
-  71 - Grasslands/Herbaceous
-  81 - Pasture/Hay
-  82 - Cultivated Crops
-  90 - Woody Wetlands
-  95 - Emergent Herbaceous Wetlands

[http://www.mrlc.gov/nlcd\\_multizone\\_map.php](http://www.mrlc.gov/nlcd_multizone_map.php)  
 Homer, C. C. Huang, L. Yang, B. Wylie and M. Coan. 2004. Development of a 2001 National Landcover Database for the United States. Photogrammetric Engineering and Remote Sensing, Vol. 70, No. 7, July 2004, pp. 829-840.

-  Urban Areas
-  Watershed Boundary



# Tehama East Watershed Assessment

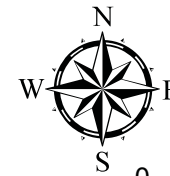
Land Use - Agriculture  
Department of Water Resources  
Tehama East Watersheds

"The main emphasis of DWR's land use surveys is the mapping of agricultural land. Over 70 different crops or crop categories are included in our surveys. Irrigation methods and water sources have also been mapped in some, but not all surveys. Urban and native vegetation (undeveloped) areas are mapped but not in the detail of agricultural land.

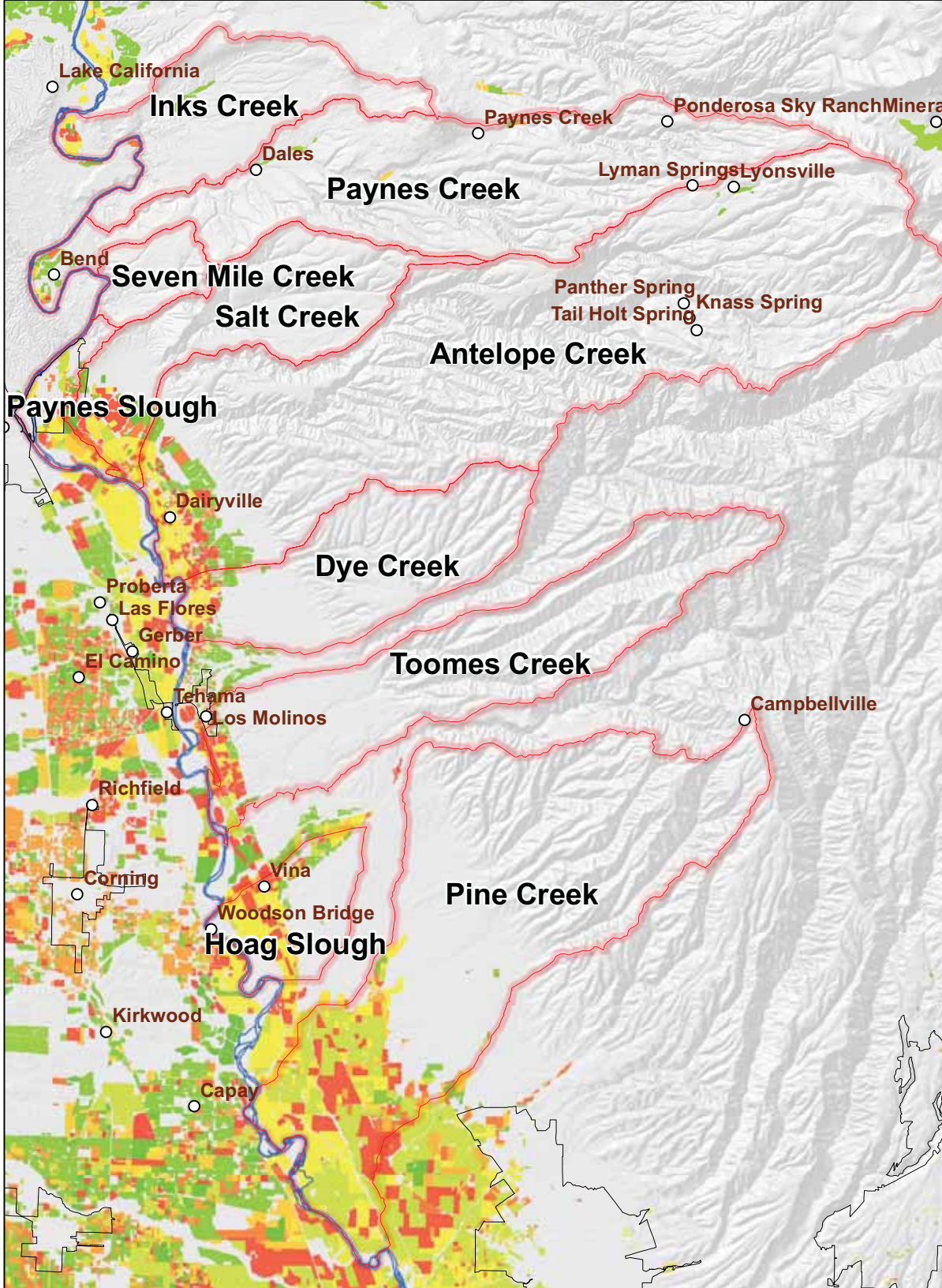
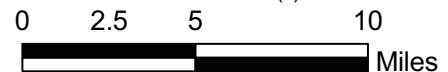
These land use surveys were performed using aerial photos and, more recently, satellite imagery to define field boundaries. For earlier surveys, DWR staff used U.S.G.S. 7.5' quadrangle maps as base maps for delineating field boundaries and recording land uses. As large format printing of aerial photographs became available, plotted aerial photos were used as field sheets for recording land use attributes. Currently, most of the land use survey data is entered directly into a digital map using geographic information system (GIS) software on a laptop computer. Georeferenced, orthorectified imagery is used as a backdrop, and the land use boundaries are visible on top of the imagery. Department staff visit and visually identify land uses on over 95 percent of the developed agricultural areas within each survey area. A GPS unit is incorporated with the computer, so the user can see their current location on-screen.

After the field work has been completed and the maps have been checked for errors, a digital composite map of the survey area is created from the work of individual surveyors. Using GIS software, digital maps of quads, counties, water districts, and the DWR's hydrologic planning units (Detailed Analysis Units) can be overlaid on the land use data to develop acreage summaries of land use by these areas." Quoted from:  
<http://www.water.ca.gov/landwateruse/lusrvymain.cfm>

See next page for the symbology Key.


























































Tehama County Resource Conservation District  
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# KEY

## Land Use - Agriculture

-  C, 3 - Oranges
-  C, 6 - Olives
-  C, 7 - Miscellaneous Subtropical Fruit
-  C, 8 - Kiwis
-  C, 10 - Eucalyptus
-  D, 1 - Apples
-  D, 2 - Apricots
-  D, 3 - Cherries
-  D, 5 - Peaches and Nectarines
-  D, 6 - Pears
-  D, 8 - Prunes
-  D, 9 - Figs
-  D, 10 - Miscellaneous Deciduous
-  D, 12 - Almonds
-  D, 13 - Walnuts
-  D, 14 - Pistachios
-  F - Field Crops
-  F, 1 - Cotton
-  F, 2 - Safflower
-  F, 3 - Flax
-  F, 5 - Sugar Beets
-  F, 6 - Corn, Field & Sweet
-  F, 8 - Sudan
-  F - Field Crops \*\*
-  F, 10 - Beans, Dry
-  F, 11 - Miscellaneous Field
-  F, 12 - Sunflowers
-  G - Grain & Hay Crops
-  G, 1 - Barley
-  G, 2 - Wheat
-  G, 3 - Oats
-  G, 6 - Miscellaneous Grain & Hay
-  G - Grain & Hay Crops \*\*
-  I, 1 - Land not cropped for the last 3 years
-  I, 2 - New lands being prepared for crops
-  P, 1 - Alfalfa & alfalfa mixtures
-  P, 2 - Clover
-  P, 3 - Mixed Pasture
-  P, 4 - Native Pasture
-  P, 5 - Induced High Water Table Nat. Pas.
-  P, 7 - Turf Farms
-  P - Pasture \*\*
-  R - Rice
-  R - Rice \*\*
-  T, 2 - Asparagus
-  T, 9 - Melons, squash, and cucumbers
-  T, 10 - Onions and Garlic
-  T, 15 - Tomatoes
-  T, 16 - Flowers, Nursery & Tree Farms
-  T, 18 - Miscellaneous Truck Farms
-  T, 19 - Bush Berries
-  T, 20 - Strawberries
-  V - Vineyards
-  V, 2 - Wine Grapes
-  V - Vineyards \*\*

\*\* No specific crop was assigned.  
<http://www.water.ca.gov/landwateruse/lusrvymain.cfm>

-  Urban Areas
-  Watershed Boundary

# Tehama East Watershed Assessment

## Land Use - Agriculture Department of Water Resources Tehama East Watersheds

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<http://www.water.ca.gov/landwateruse/lusrvymain.cfm>

See next page for the symbology Key.



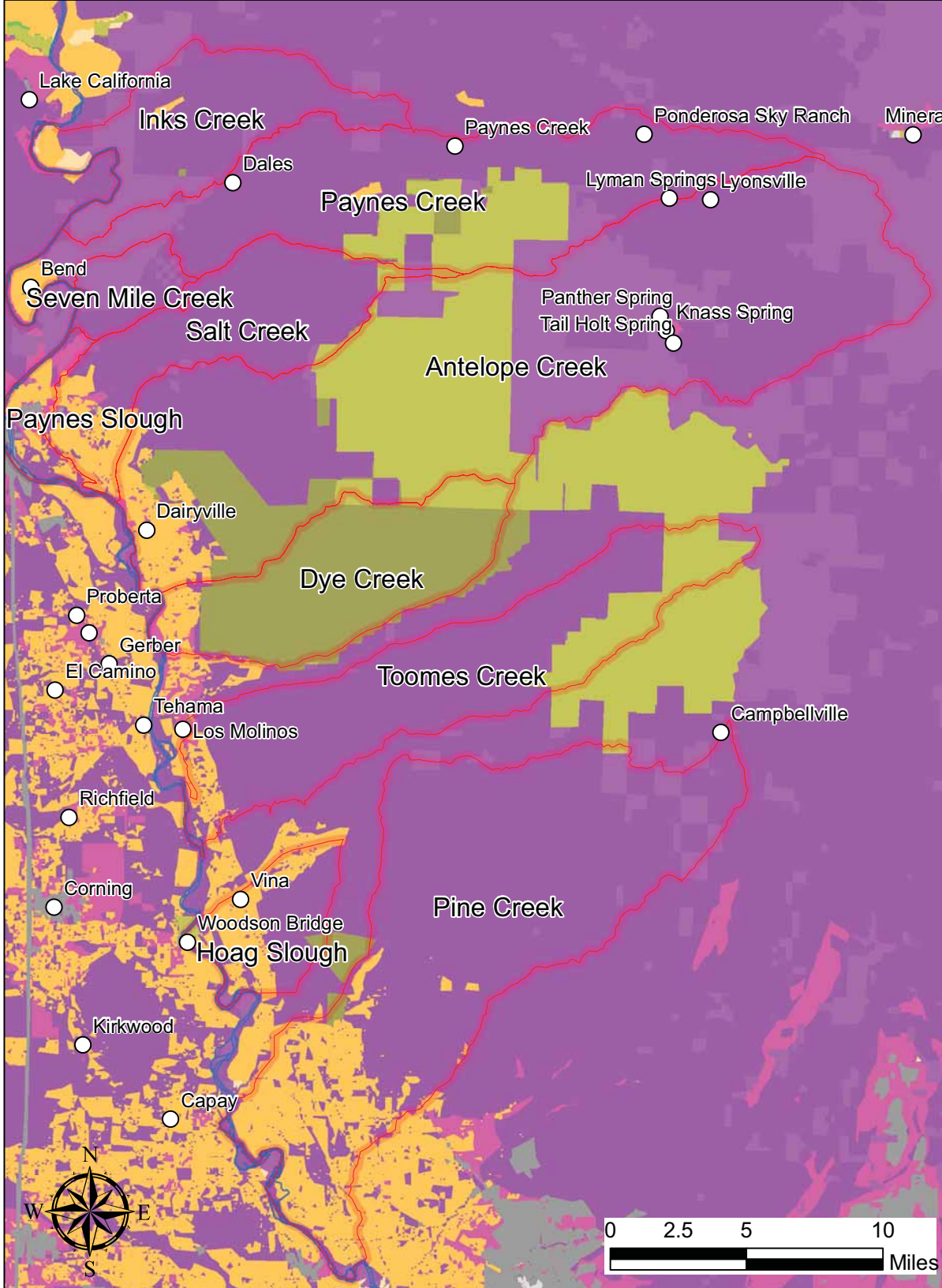
Tehama County Resource Conservation District  
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# Tehama East Watershed Assessment

## Management Scapes CalFire - FMMP (2000) Tehama East Watersheds

This dataset depicts "major land management types in California. These classes reflect the differing land uses, priorities, habitat, and natural resource values that exist in the state and thus the different management environments that they fall under. The Management Landscape classes are based on a combination of 1) Land use: urban, agriculture, reserve, working (managed forest or range); 2) Housing density; 3) Ownership: public, private."

This dataset spatially depicts "urban areas, reserved lands, and the "working landscape," areas currently managed (typically for agriculture, timber or livestock production) that also provide important values such as wildlife habitat and open space. The working landscape is qualified based on housing density, which influences management practices as well as potential for future development." Quoted from: <http://frap.cdf.ca.gov/data/frapgisdata/output/mgmtscape.txt>





### KEY

#### Managementscape Grid Codes

110 - URBAN/PRIVATE
111 - URBAN/PUBLIC
200 - AG/SPARSE RES/PRIVATE
201 - AG/SPARSE RES/PUBLIC
210 - AG/RURAL RES/PRIVATE
300 - RESERVE/SPARSE RES/PRIVATE
301 - RESERVE/SPARSE RES/PUBLIC
310 - RESERVE/RURAL RES/PRIVATE
311 - RESERVE/RURAL RES/PUBLIC
400 - WORKING/SPARSE RES/PRIVATE
401 - WORKING/SPARSE RES/PUBLIC
410 - WORKING/RURAL RES/PRIVATE
411 - WORKING/RURAL RES/PUBLIC

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?rec=mgmtscape>

-  Watershed Boundary
-  Sacramento River



# Tehama East Watershed Assessment





## Common Resource Areas Tehama East Watersheds

"A Common Resource Area (CRA) map delineation is defined as a geographical area where resource concerns, problems, or treatment needs are similar. It is considered a subdivision of an existing Major Land Resource Area (MLRA) map delineation or polygon. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographic boundaries of a Common Resource Area."




Quoted from: <http://soils.usda.gov/survey/geography/cra.html>

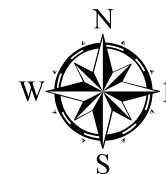
### KEY

#### Major Land Resource Areas

-  17 - SACRAMENTO AND SAN JOAQUIN VALLEYS
-  18 - SIERRA NEVADA FOOTHILLS
-  22A - SIERRA NEVADA RANGE, NORTH
-  22B - SIERRA NEVADA RANGE, CENTRAL

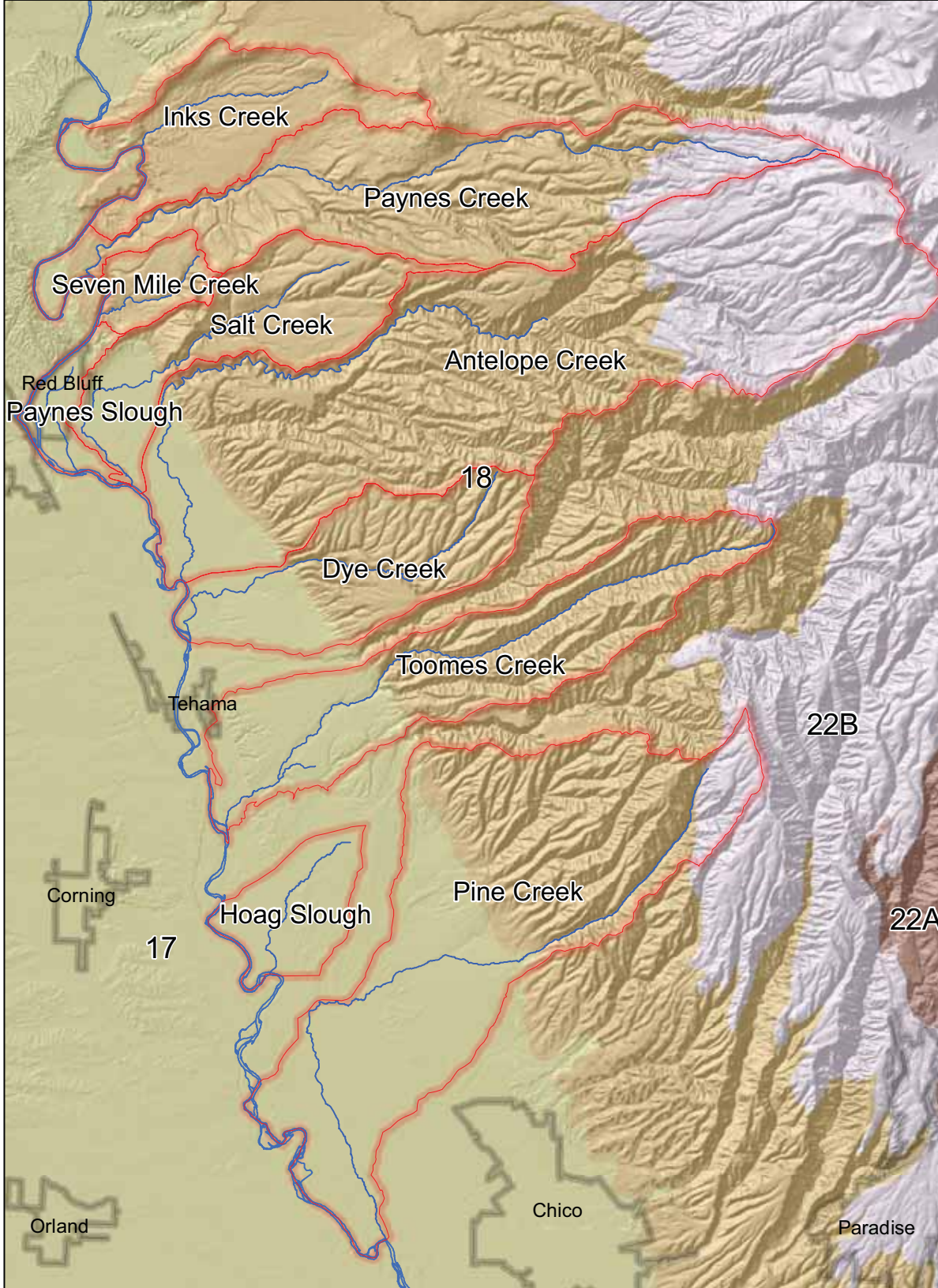
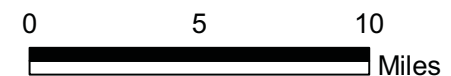
<http://datagateway.nrcs.usda.gov/>

-  Streams/Rivers
-  Urban Areas
-  Watershed Boundary



Tehama County Resource  
Conservation District

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# Tehama East Watershed Assessment









## Critical Habitat US Fish and Wildlife Service Tehama East Watersheds

"Critical habitat is a term defined and used in the Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after publishing a proposed Federal regulation in the Federal Register and then receive and consider public comments on the proposal. The final boundaries of the critical habitat area are also published in the Federal Register."


Quoted from:  
[http://www.fws.gov/Endangered/factsheets/critical\\_habitat.pdf](http://www.fws.gov/Endangered/factsheets/critical_habitat.pdf)

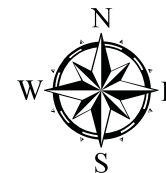
### KEY

#### Critical Habitat Species

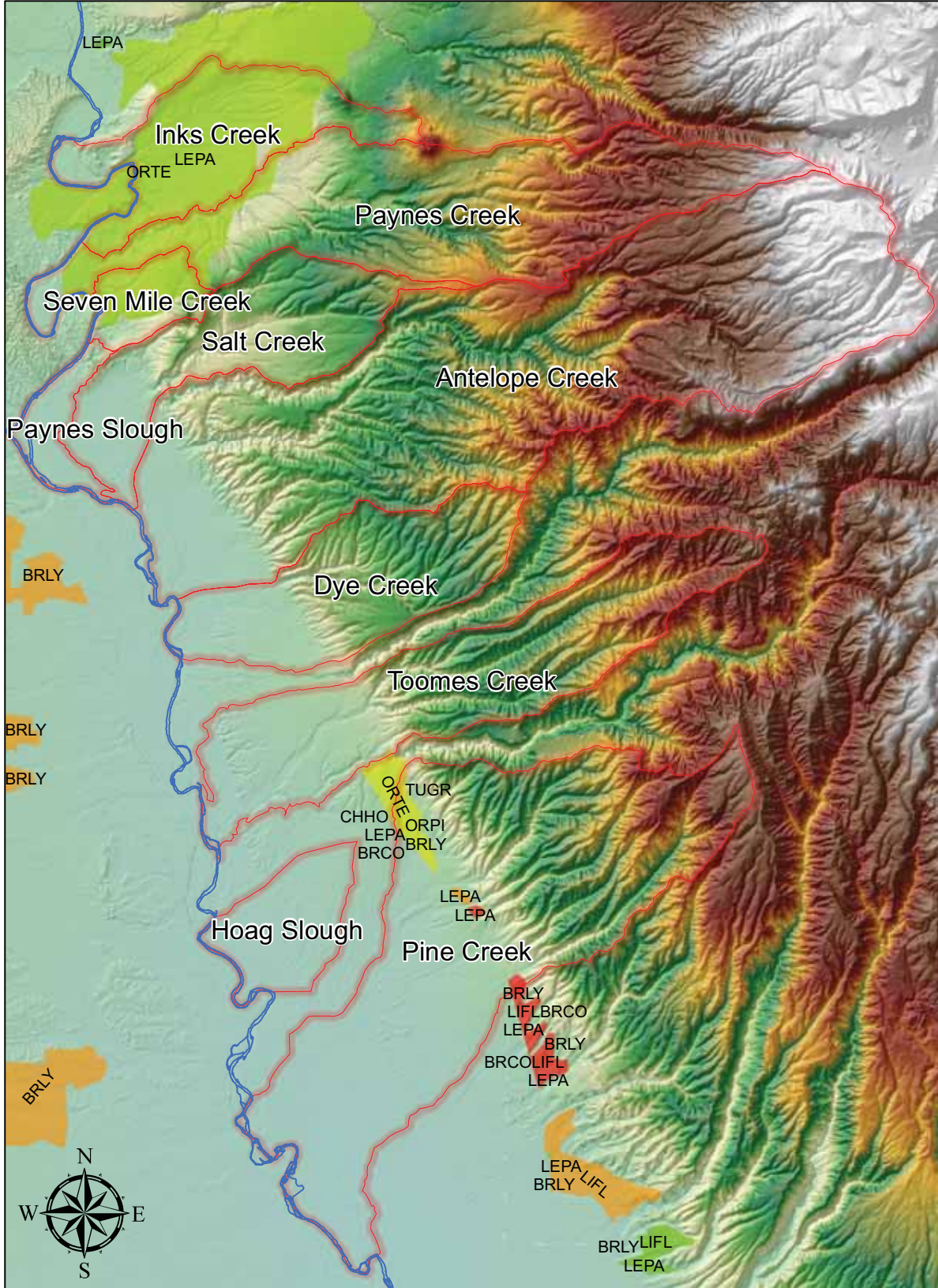
-  Butte County meadowfoam
-  Conservancy fairy shrimp
-  Greene's tuctoria
-  Hairy Orcutt grass
-  Hoover's spurge
-  Slender Orcutt grass
-  Vernal pool fairy shrimp
-  Vernal pool tadpole shrimp

<http://criticalhabitat.fws.gov/>

-  Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

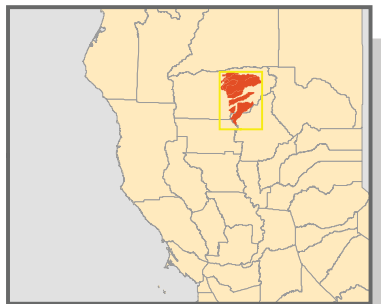
## Cultural Boundaries

### Tehama East Watersheds

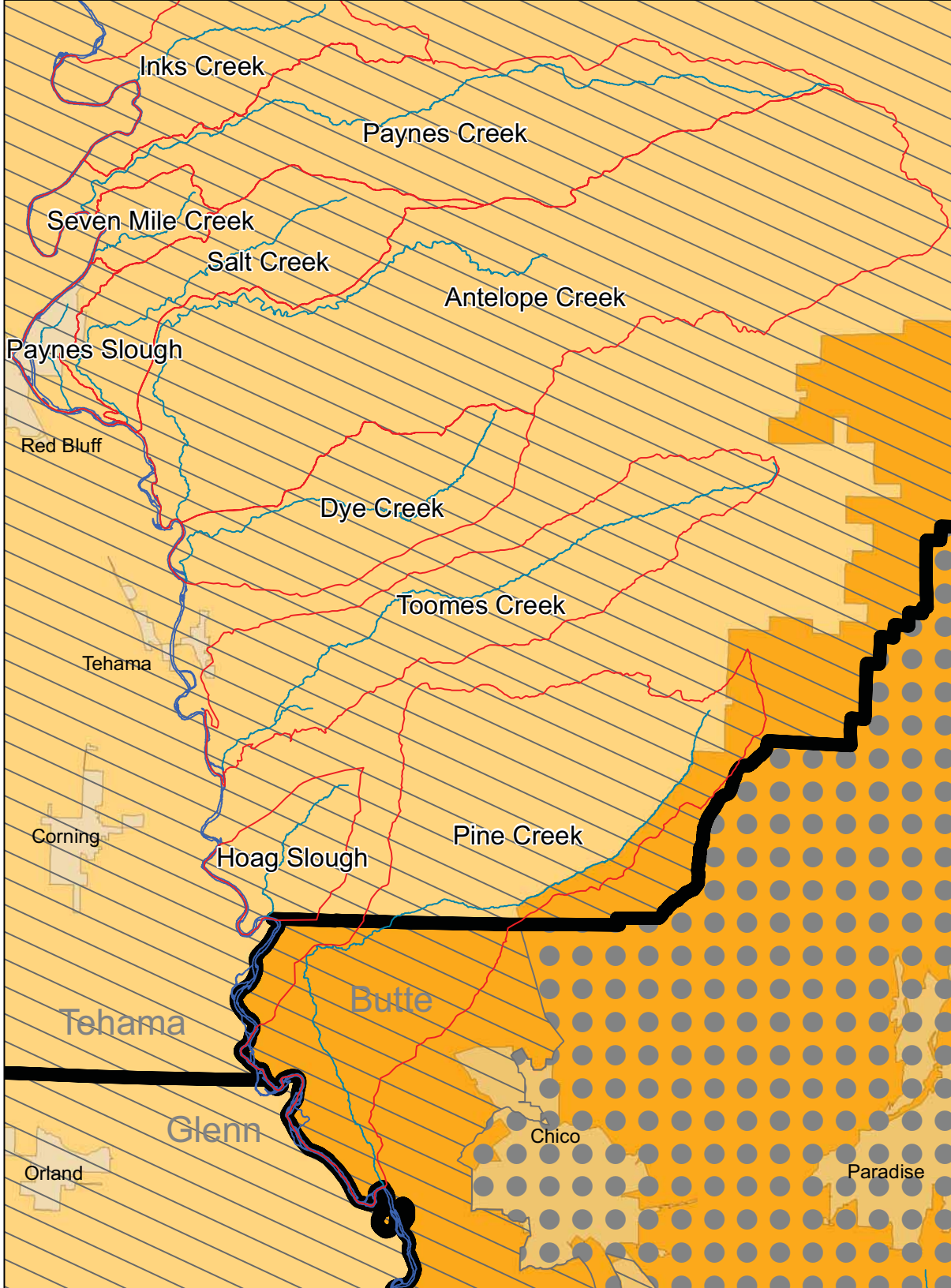
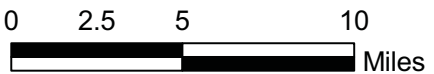
Ecological divisions such as watershed boundaries are increasingly being used for land use planning. These natural boundaries are often divided by political and other cultural boundaries applied to the landscape. Problem-solving of ecological and natural resource issues is made more complicated because of these bisecting regions. In addition to the boundaries shown, the study area is contained within State Senate District #4 and Congressional District #2.

#### KEY

-  State Assembly District #2
-  State Assembly District #3
-  CalFire Administrative Area - Butte
-  CalFire Administrative Area - Butte
-  County Boundaries
-  Streams/Rivers
-  Urban Areas
-  Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010






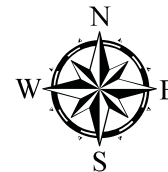
# Tehama East Watershed Assessment

## Defensible Polygons Tehama East Watersheds

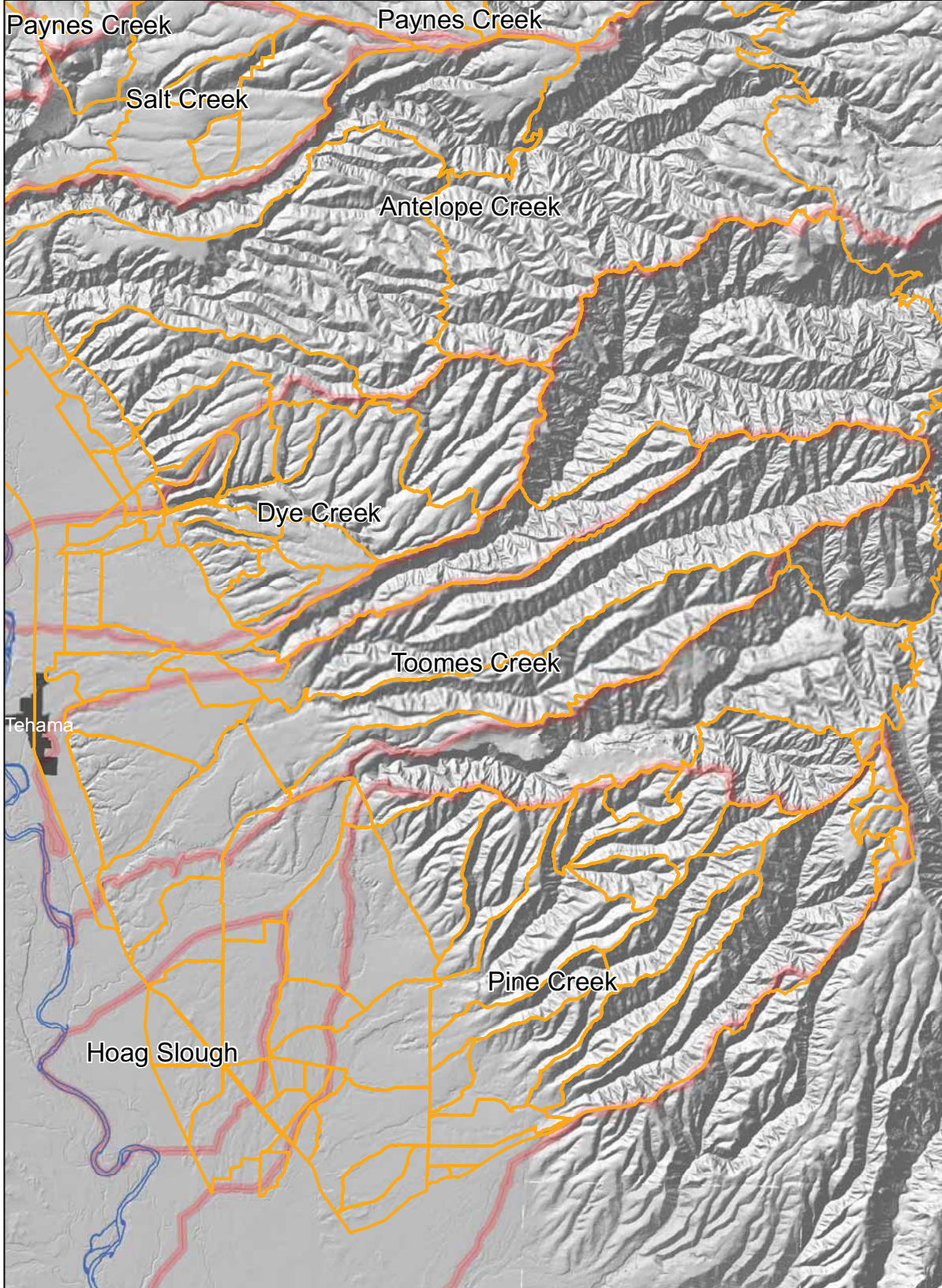
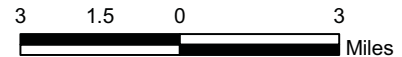
The development of the defensible polygons started with identifying natural and man-made resources in the area, local assets at risk from wildfire, and projects in place to protect these assets. These areas of natural fire containment are based upon topography and existing firelines, including roads, stable rock fences, and water features, such as streams and lakes. These defensible polygons also included boundaries of previously existing Fire Management Units developed by The Nature Conservancy as utilized in their prescribed burning plans for the Dye Creek Preserve, Denny Ranch conservation easement, and the Vina Plains Preserve.

### KEY

-  **Defensible Polygon Units**  
TNC / TCRCD
-  Urban Areas
-  Watershed Boundary



Tehama County Resource Conservation District  
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# Tehama East Watershed Assessment

## Agricultural Irrigation Evaluations Northern Sacramento Valley Mobile Irrigation Lab Tehama East Watersheds



The Mobile Lab is a service that provides on-site evaluations of individual irrigation systems. Based on these evaluations, a Mobile Lab technician can work with growers to develop irrigation water management plans tailored to their individual needs. The plans include recommendations to improve system performance, such as repairing irrigation heads, developing a maintenance plan, and revising irrigation schedules. Through this service, growers learn to operate their systems more effectively and save water in the process.

### Evaluations Performed

#### By Watershed

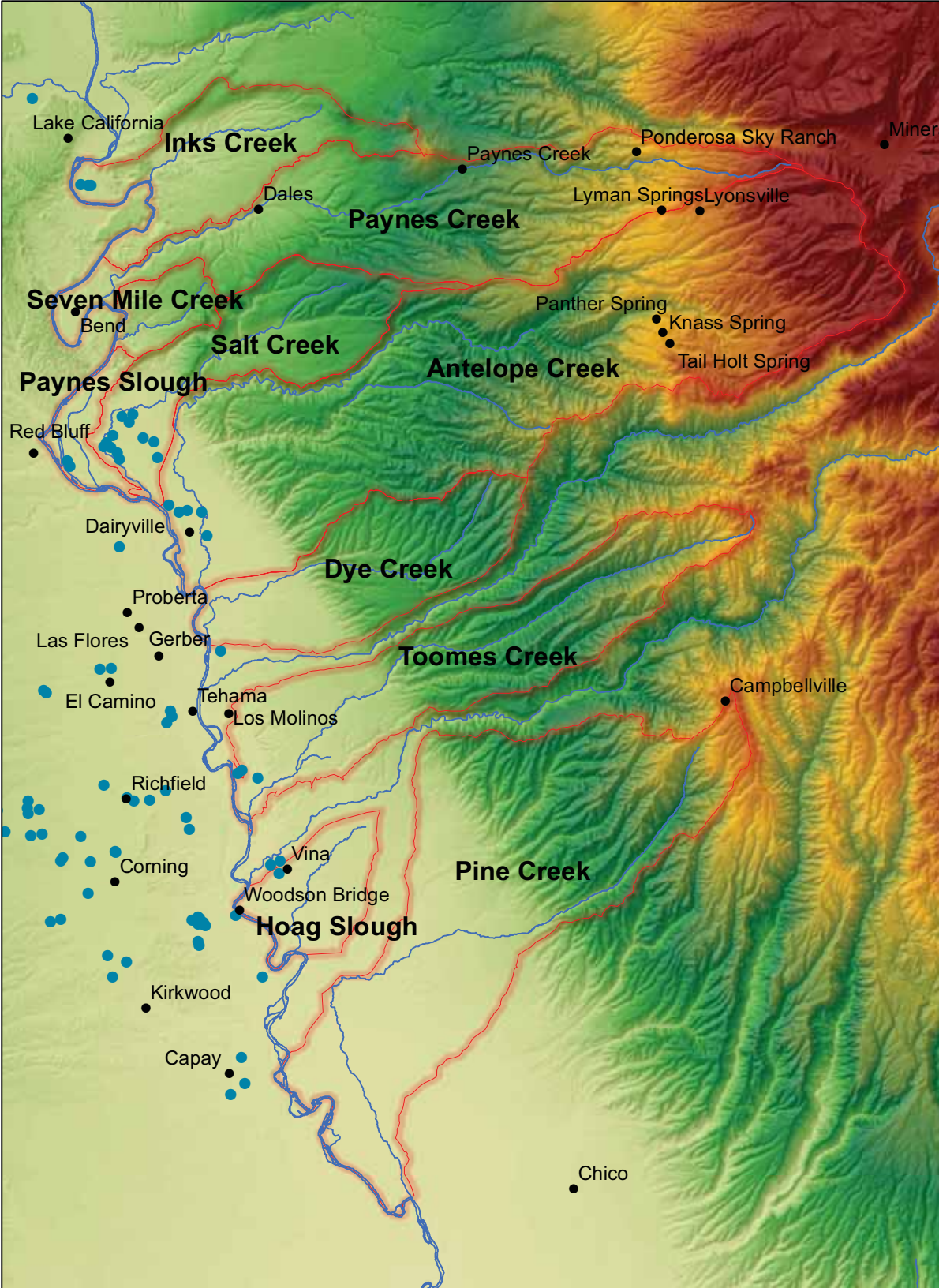
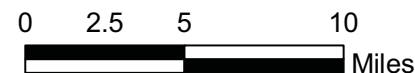
Antelope Creek:	5
Dye Creek:	0
Hoag Slough:	1
Inks Creek:	3
Paynes Creek:	0
Paynes Slough:	2
Pine Creek:	0
Salt Creek:	12
Seven Mile Creek:	0
Toomes Creek:	1

### KEY

-  Irrigation Evaluations
-  Watershed Boundary



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Conservation District  
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# Tehama East Watershed Assessment

## Major Land Resource Areas Tehama East Watersheds

"Major land resource areas (MLRAs) are geographically associated land resource units (LRUs). Identification of these large areas is important in statewide agricultural planning and has value in interstate, regional, and national planning.

The 278 major land resource areas are designated by Arabic numbers and identified by a descriptive geographic name in Agriculture Handbook 296. For example, MLRA 1 (Northern Pacific Coast Range, Foothills, and Valleys) is on the west coast; MLRA 157 (Arid and Semiarid Low Mountain Slopes) is in Hawaii; MLRA 227 (Copper River Basin) is in Alaska; MLRA 270 (Humid Mountains and Valleys) is in Puerto Rico; and MLRA 190 (Stratovolcanoes of the Mariana Islands) is in the Pacific Basin. Where preexisting MLRAs have been revised, an alphabetic suffix is often added to the original Arabic number (e.g., MLRA 102A, MLRA 102B, and MLRA 102C).

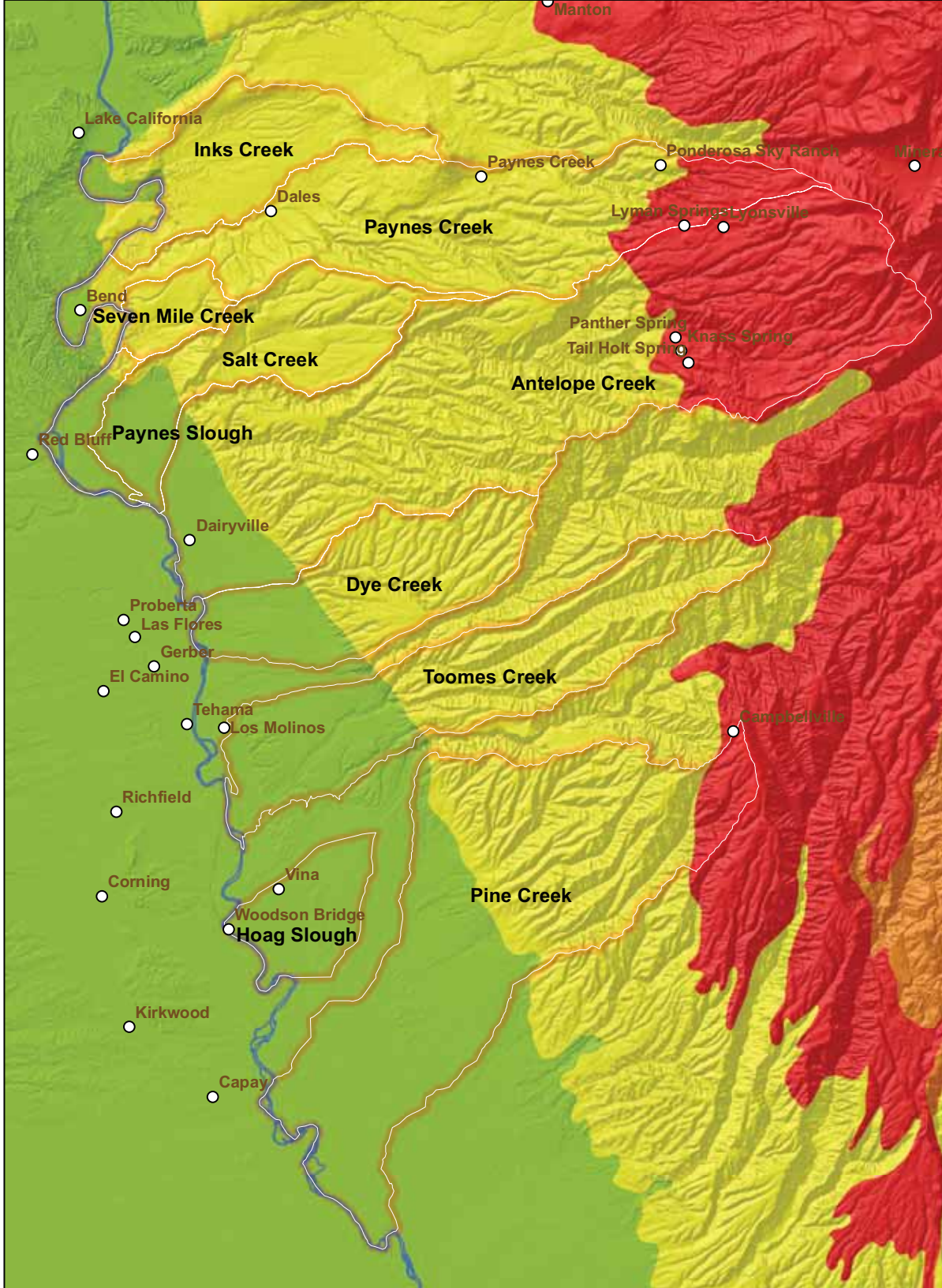
The dominant physical characteristics of the major land resource areas are described briefly in Agriculture Handbook 296. The first paragraph lists the extent of each MLRA in each state and the total area. Major cities, highways, and culturally significant Federal- and state-owned lands within each MLRA are also listed. The remaining headings for each MLRA include, physiography, geology, climate, water, soils, biological resources, and land use."

Quoted from:  
[http://soils.usda.gov/survey/geography/mlra/mlra\\_definitions.html](http://soils.usda.gov/survey/geography/mlra/mlra_definitions.html)

### KEY

#### MLRA96

-  17-Sacramento and San Joaquin Valleys
-  18-Sierra Nevada Foothills
-  22A-Sierra Nevada Mountains
-  22B-Southern Cascade Mountains
-  Watershed Boundary




# Tehama East Watershed Assessment

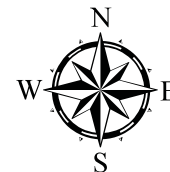
Sacramento National Wildlife Refuge Complex  
 US Fish & Wildlife Service  
 Tehama East Watersheds

"The Complex consists of five national wildlife refuges (NWR) and three wildlife management areas (WMA) that comprise over 35,000 acres of wetlands and uplands in the Sacramento Valley of California. In addition, there are over 30,000 acres of conservation easements in the Complex. The Refuges and easements are part of the U.S. Fish and Wildlife Service (Service); they serve as resting and feeding areas for nearly half the migratory birds on the Pacific Flyway."

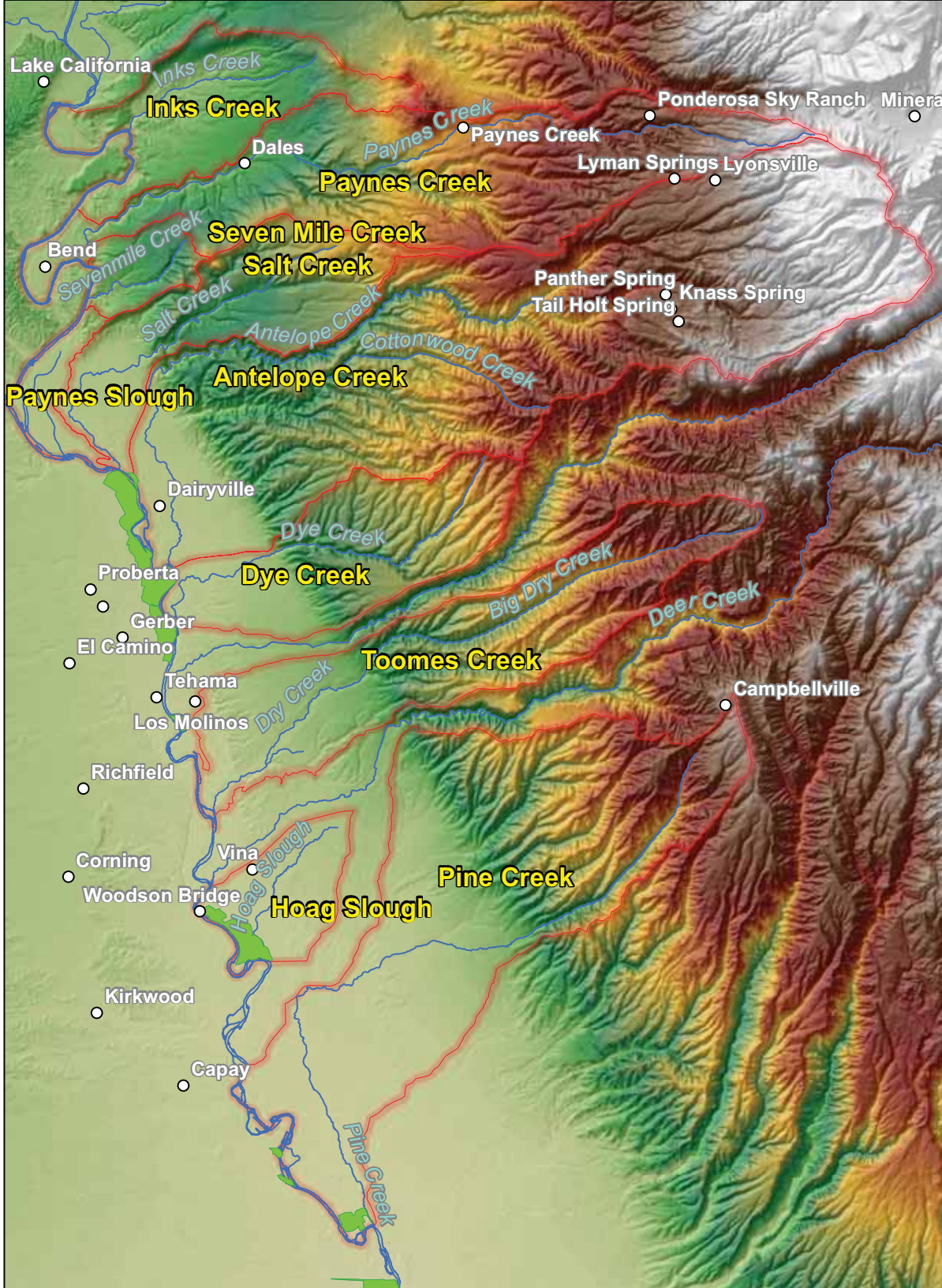
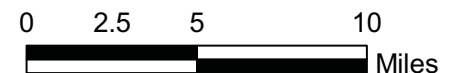
Quoted from:  
<http://www.fws.gov/sacramentovalleyrefuges/>

## Legend

-  Sacramento National Wildlife Refuge Complex  
<http://www.fws.gov/GIS/data/regional/R8/index.htm>
-  Watershed Boundary



Tehama County Resource  
 Conservation District  
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# Tehama East Watershed Assessment

## Principal Areas of Mine Pollution Tehama East Watersheds

"The PAMP (Principal Areas of Mine Pollution) data set is a compilation of 2,422 mining operations and their potential water-quality problems. This information was originally compiled in 1972 by the Division of Mines and Geology for the State Water Resources Control Board. It was published in a series of volumes of tabular data. The data set includes operations where production exceeded \$100,000 or where other factors indicated a high potential for pollution."

Quoted from:  
<http://ceic.resources.ca.gov/catalog/KernMEARMetadata/StateOfCAPrincipleAreasOfMinePollution.html>

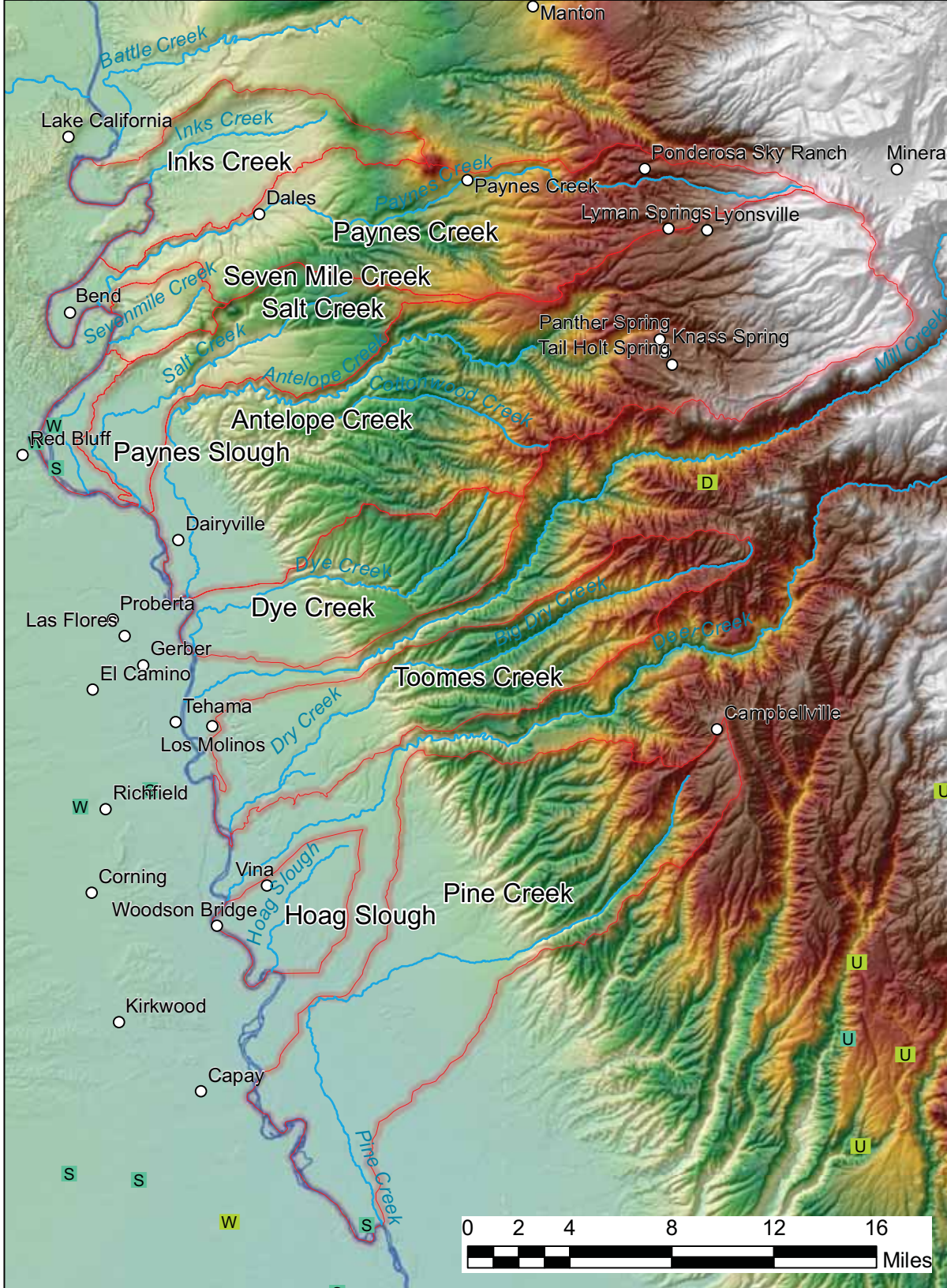
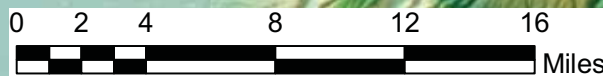
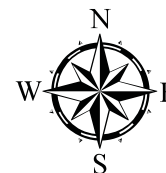
### Legend

#### PAMP Sites

- S surface
- S surface tailings
- C surface, crushing, screening
- D surface, dredge
- H surface, hydraulic, pit
- W surface, wash, screen
- W surface, washing
- U underground
- U underground, drift

California Department of Conservation

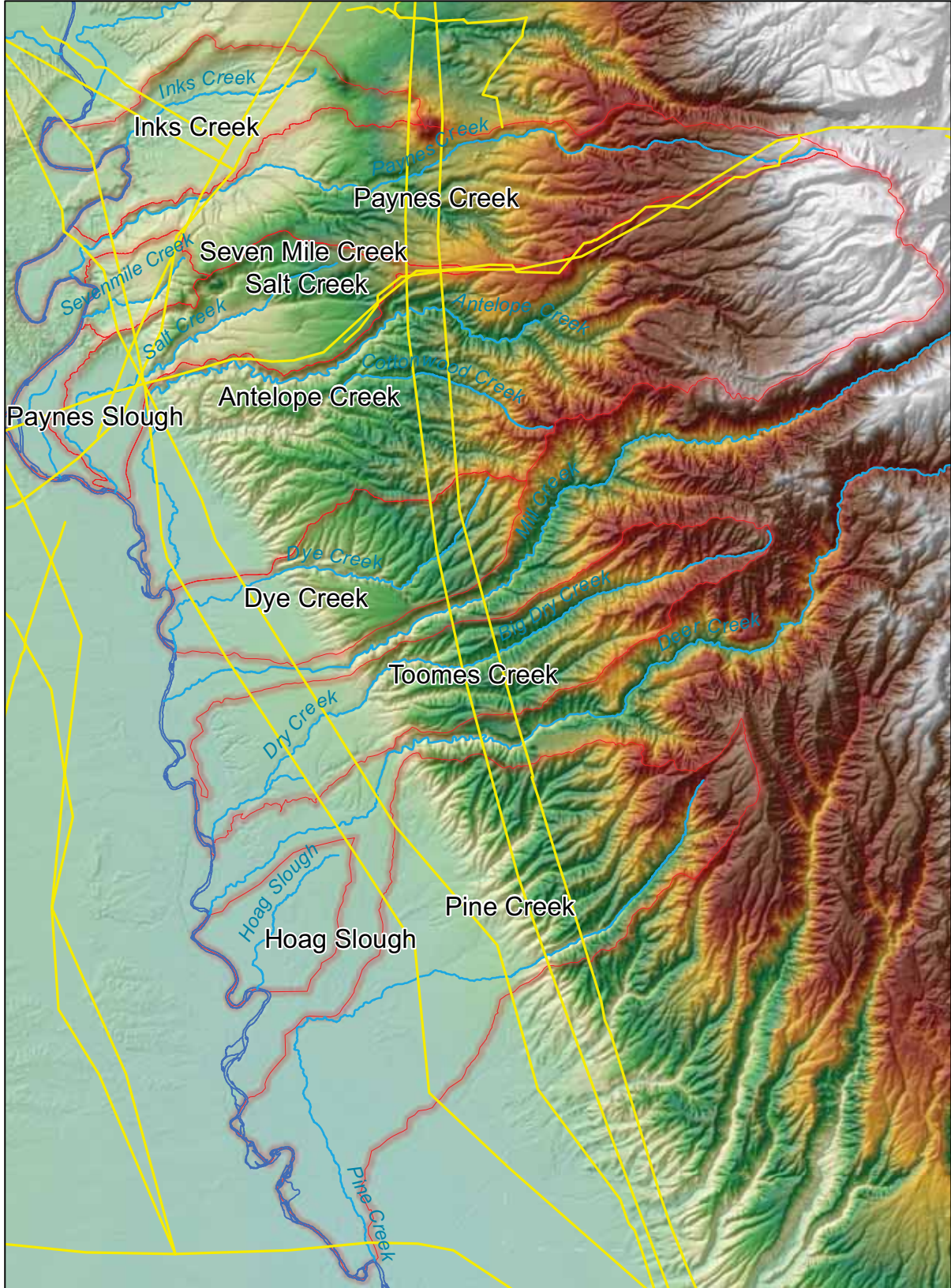
Watershed Boundary







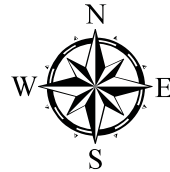
# Tehama East Watershed Assessment

High Voltage Powerlines  
Tehama East Watersheds



### KEY

-  High Voltage Powerlines
-  Watershed Boundary



Tehama County Resource  
Conservation District  
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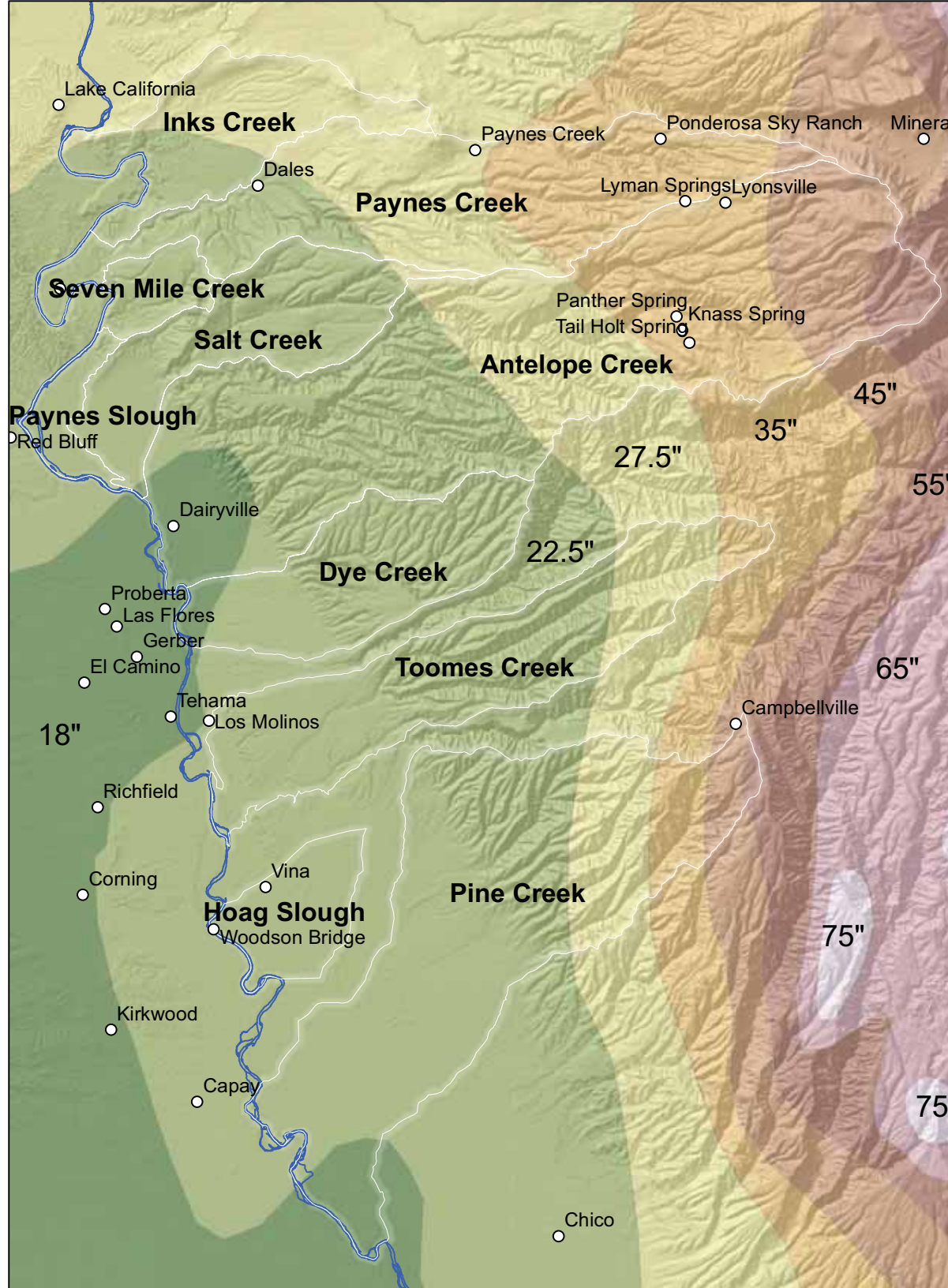


# Tehama East Watershed Assessment

Average Annual Precipitation  
1900 - 1960  
Tehama East Watersheds

"Isohyetal lines of equal average rainfall were digitized from a 1:1,000,000 source map compiled by S. E. Rantz, U.S. Geological survey, 1969, 1972. The map is based on data covering the period 1900-1960. Average rainfall zones were created by averaging the rainfall for isohyets bounding each polygon."

Quoted from:  
<http://frap.cdf.ca.gov/data/frapgisdata/output/rain.txt>



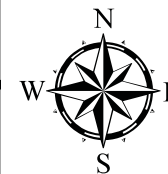
## KEY



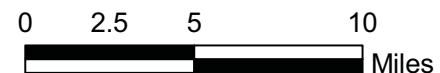
Watershed Boundary

Average Annual Precipitation in Inches

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=rain>

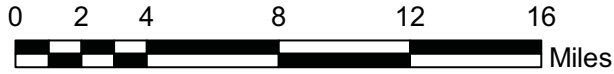
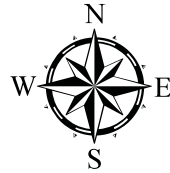
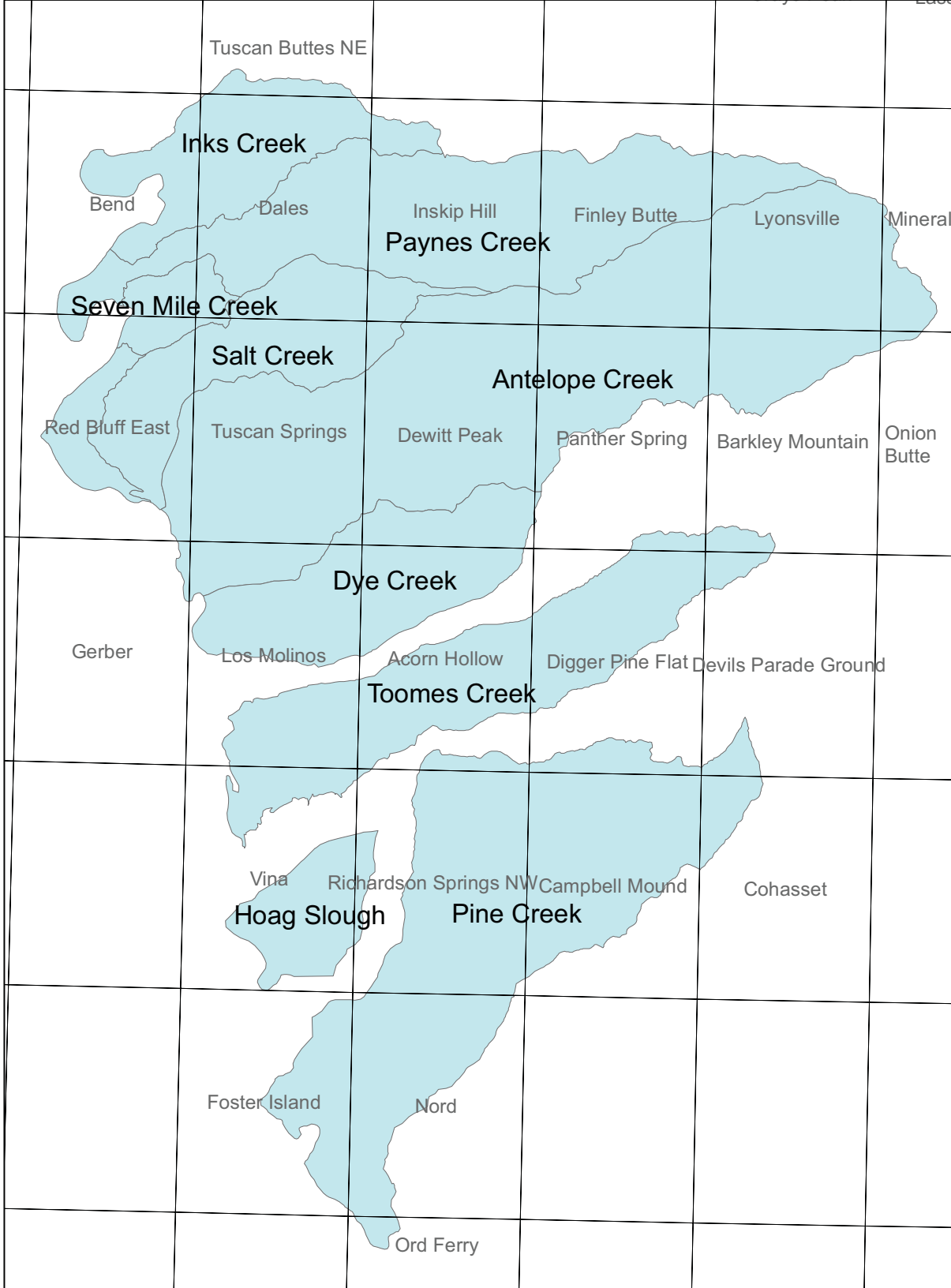


Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

Quad Map  
Tehama East Watersheds



# Tehama East Watershed Assessment Roadless Areas Federally Owned Lands Tehama East Watersheds

"This dataset contains National Forest Inventoried Roadless Areas (IRAs) for Region 5 (State of California) and the Toiyabe National Forest. It is a subset of "ira\_us\_dd", the dataset containing all National Forest Inventoried Roadless Areas (IRAs) for the lower 48 states, including Puerto Rico, to which this metadata document refers.

The IRA data was originally submitted to GSTC by all national forests through their Regional Offices for the Forest Service's Roadless Area Conservation Initiative. The data was consolidated at the GSTC and used in the Draft Environment Impact Statement. Between the draft and final stages of the Environmental Impact Statement, the data was updated by the forests to reflect any corrections to Inventoried Roadless Areas that were based on existing forest plans and administrative record. The data was also supplemented to include Special Designated Area information and to include Inventoried Roadless Areas within Special Designated Areas. The data was resubmitted to the GSTC on July 21, 2000 for consolidation and the completed coverage was used in the Roadless Area Conservation Final Environmental Impact Statement. On October 15, 2002, the Gallatin National Forest submitted a technical correction to the Inventoried Roadless Area GISdatabase. A portion of the original GIS data was corrected to match the 1999 IRA maps that are part of the forest administrative record."

Quoted from:  
[http://www.fs.fed.us/r5/rsl/projects/gis/data/calcovs/InventoriedRoadlessArea00\\_1.html](http://www.fs.fed.us/r5/rsl/projects/gis/data/calcovs/InventoriedRoadlessArea00_1.html)

## Legend

### Roadless Categories

- Other
- Recreation/Wilderness
- Roadless

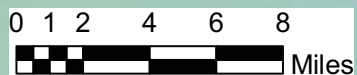
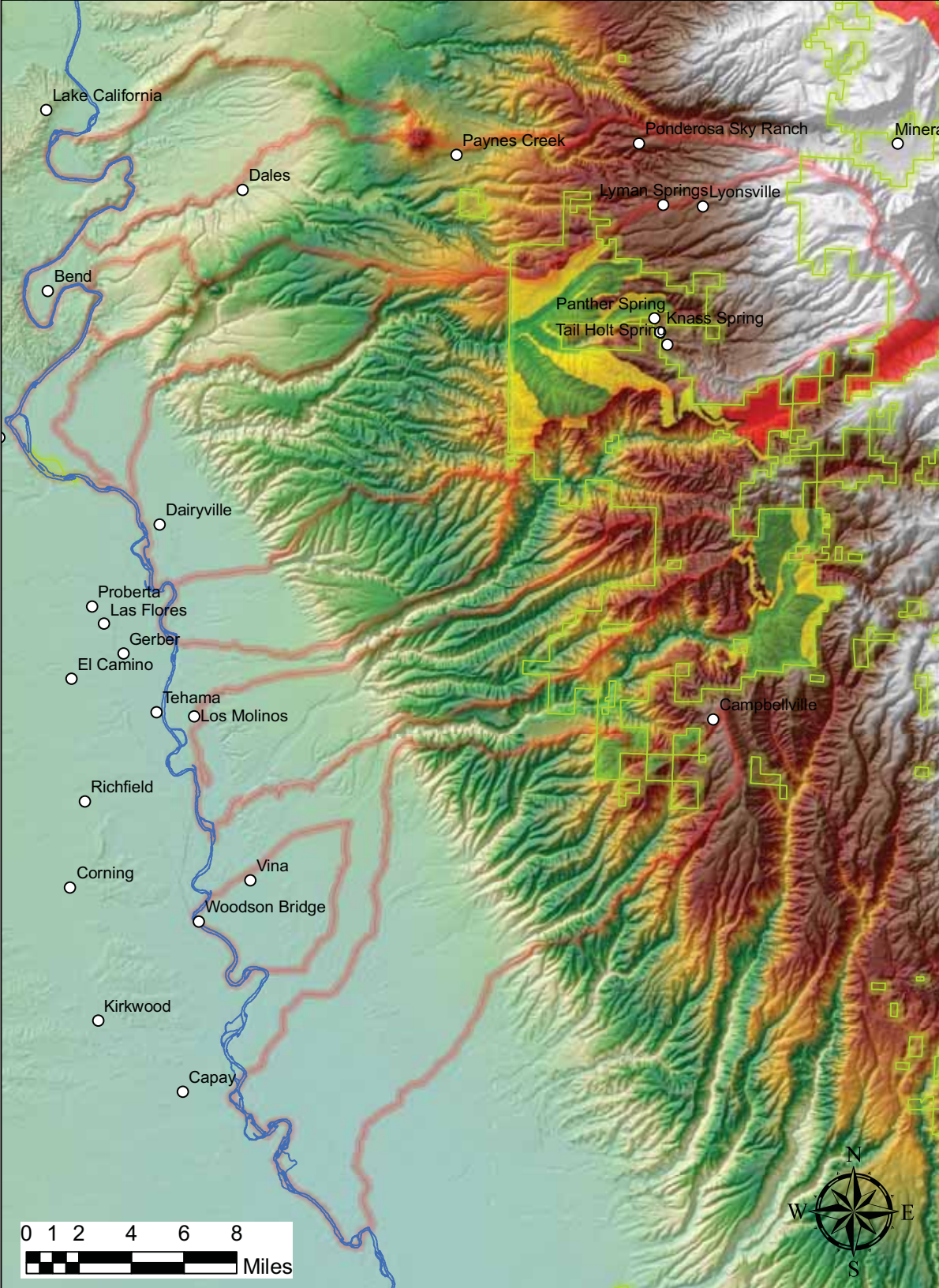
### Agency

- US Forest Service

<http://www.fs.fed.us/r5/rsl/clearinghouse/gis-download.shtml>

- Watershed Boundary

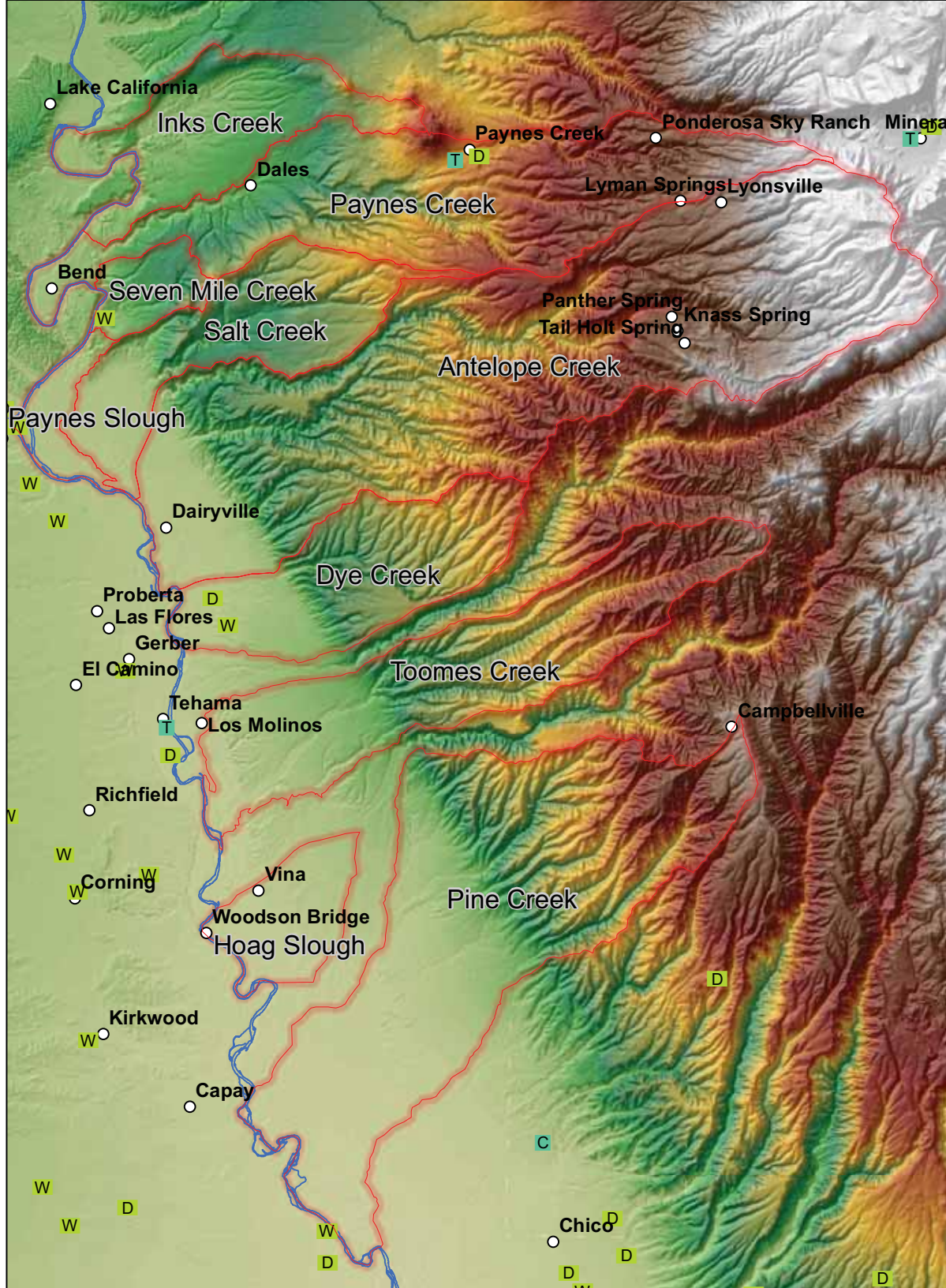
Tehama County Resource Conservation District (c) 2010



# Tehama East Watershed Assessment

## Solid Waste Disposal Sites Tehama East Watersheds

The California Integrated Waste Management Board is one of six statewide government organizations that make up the California Environmental Protection Agency (Cal/EPA). The Cal/EPA is charged with protecting the public's health and safety and the environment. The five other Cal/EPA organizations include the Air Resources Board, Office of Environmental Health Hazard Assessment, Department of Pesticide Regulation, Department of Toxic Substances Control, and State Water Resources Control Board.



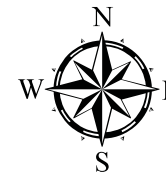
### KEY

#### Solid Waste Categories

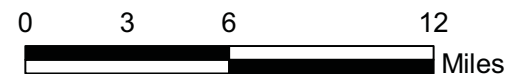
- Composting
- Disposal
- Transfer/Processing
- Waste Tire Site

California Integrated Waste Management Board

Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

## Topographically Occurring Mine Symbols - TOMS Tehama East Watersheds

"In 1998, the Office of Mine Reclamation began inventorying abandoned mined lands as part of a program to produce a report describing the "scope and magnitude" of abandoned mine issues in California. To support this effort, the Office began digitizing mining features from scanned USGS topographic quadrangles. Each of the 7.5-minute USGS topographic quadrangles was examined and all mining features were digitized and annotated with information derived from the map. Positional accuracy was reliant on the accuracy of the original source maps. Human digitization of the mining symbols has likely added slight deviations from the original source map, though no formal method has been undertaken to quantify this additional error."

Quoted from:  
[http://www.consrv.ca.gov/OMR/abandoned\\_mine\\_land/toms/Pages/index.aspx](http://www.consrv.ca.gov/OMR/abandoned_mine_land/toms/Pages/index.aspx)

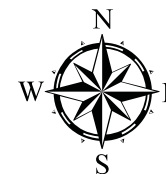
### KEY

#### Site Type

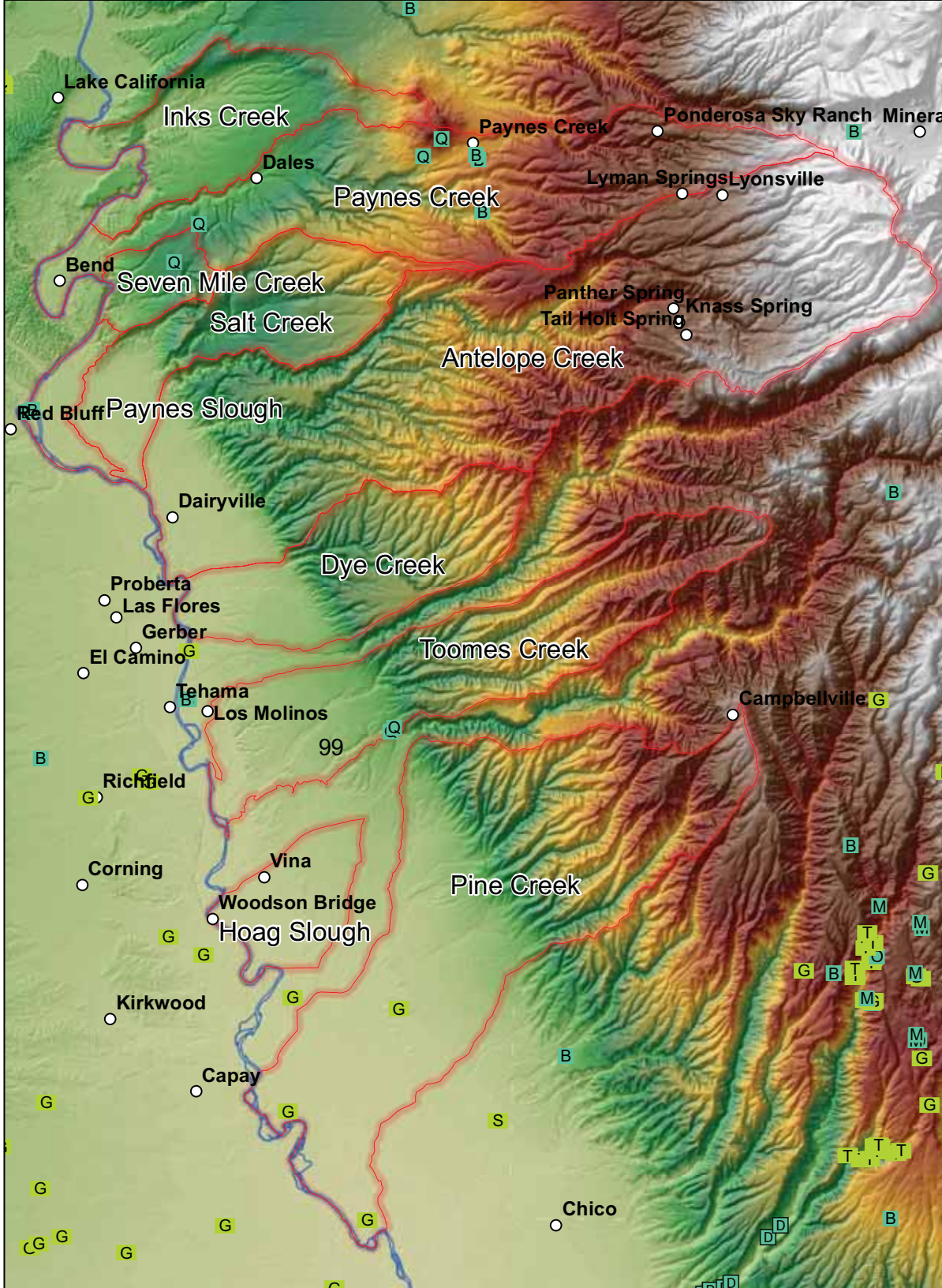
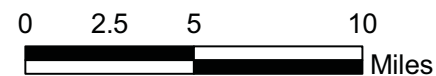
- B Borrow Pit
- C Cinder Pit
- D Dredger Tailings
- G Gravel Pit
- M Mine Shaft
- T Mine Tunnel
- Q Quarry
- P Prospect
- S Sand Pit
- I Tailings

[http://www.consrv.ca.gov/OMR/abandoned\\_mine\\_land/toms/Pages/index.aspx](http://www.consrv.ca.gov/OMR/abandoned_mine_land/toms/Pages/index.aspx)

Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010



# Tehama East Watershed Assessment

## Toxic Substances Monitoring Program Tehama East Watersheds

The TSMP was initiated in 1976 by the California State Water Resources Control Board (SWRCB). The TSMP was organized to provide a uniform statewide approach to the detection and evaluation of the occurrence of toxic substances in fresh, estuarine, and marine waters of the State through the analysis of fish and other aquatic life. The TSMP primarily targets water bodies with known or suspected impaired water quality and is not intended to give an overall water quality assessment. The California Department of Fish and Game (DFG) carries out the statewide TSMP for the SWRCB by collecting and analyzing samples. The SWRCB provides funding for the program under an ongoing interagency agreement with the DFG. Sampling stations are selected primarily by the nine Regional Water Quality Control Boards.

Quoted from:  
[atlas.ca.gov/ceic/xml/LegacyProjectDataCollection/ToxicSubstancesMonitoringPrgLipids](http://atlas.ca.gov/ceic/xml/LegacyProjectDataCollection/ToxicSubstancesMonitoringPrgLipids)

### KEY

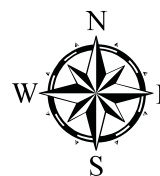
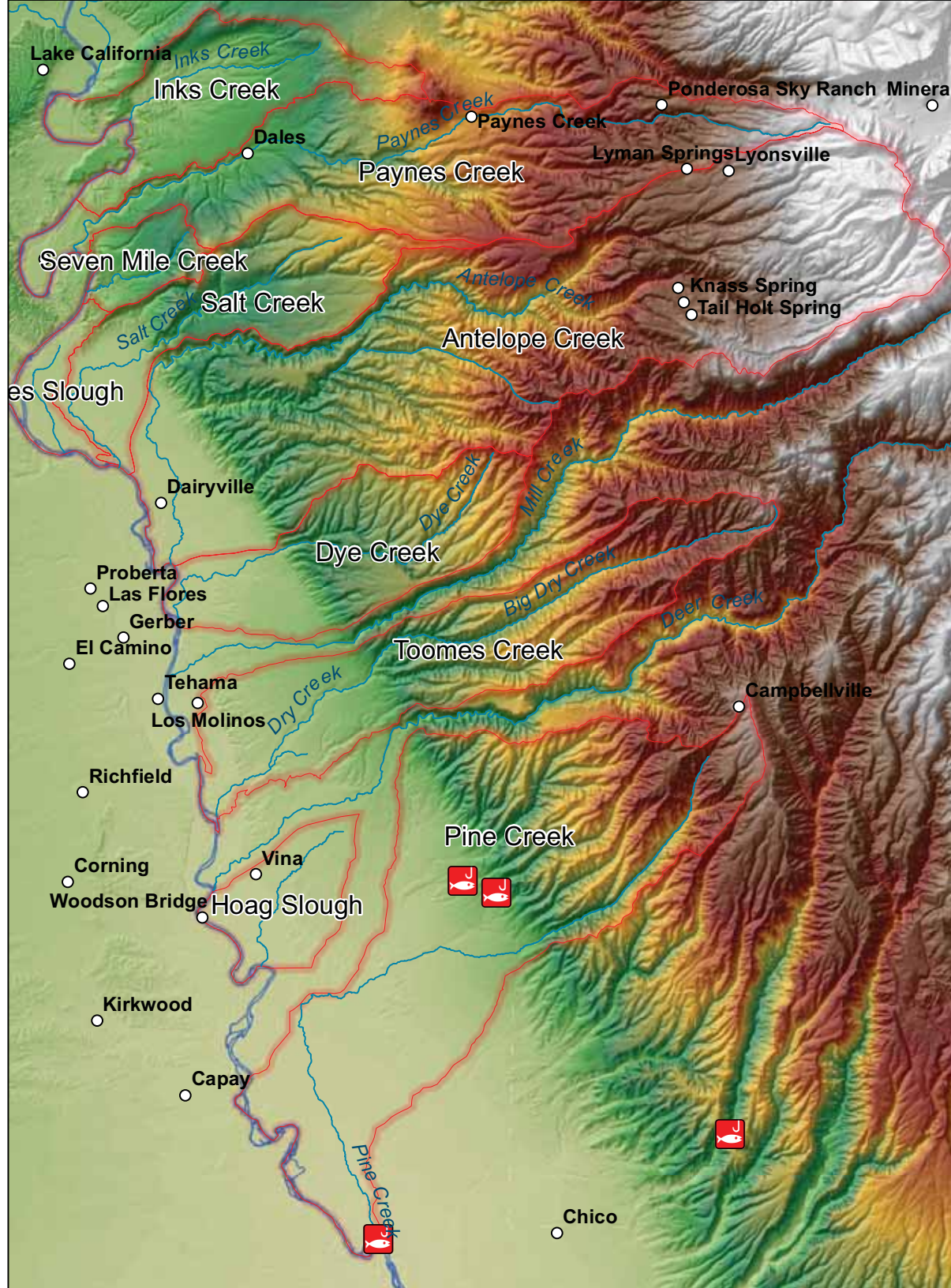


Study Site

<http://casil.ucdavis.edu/casil/uncategorized/legacy.ca.gov/>



Watershed Boundary



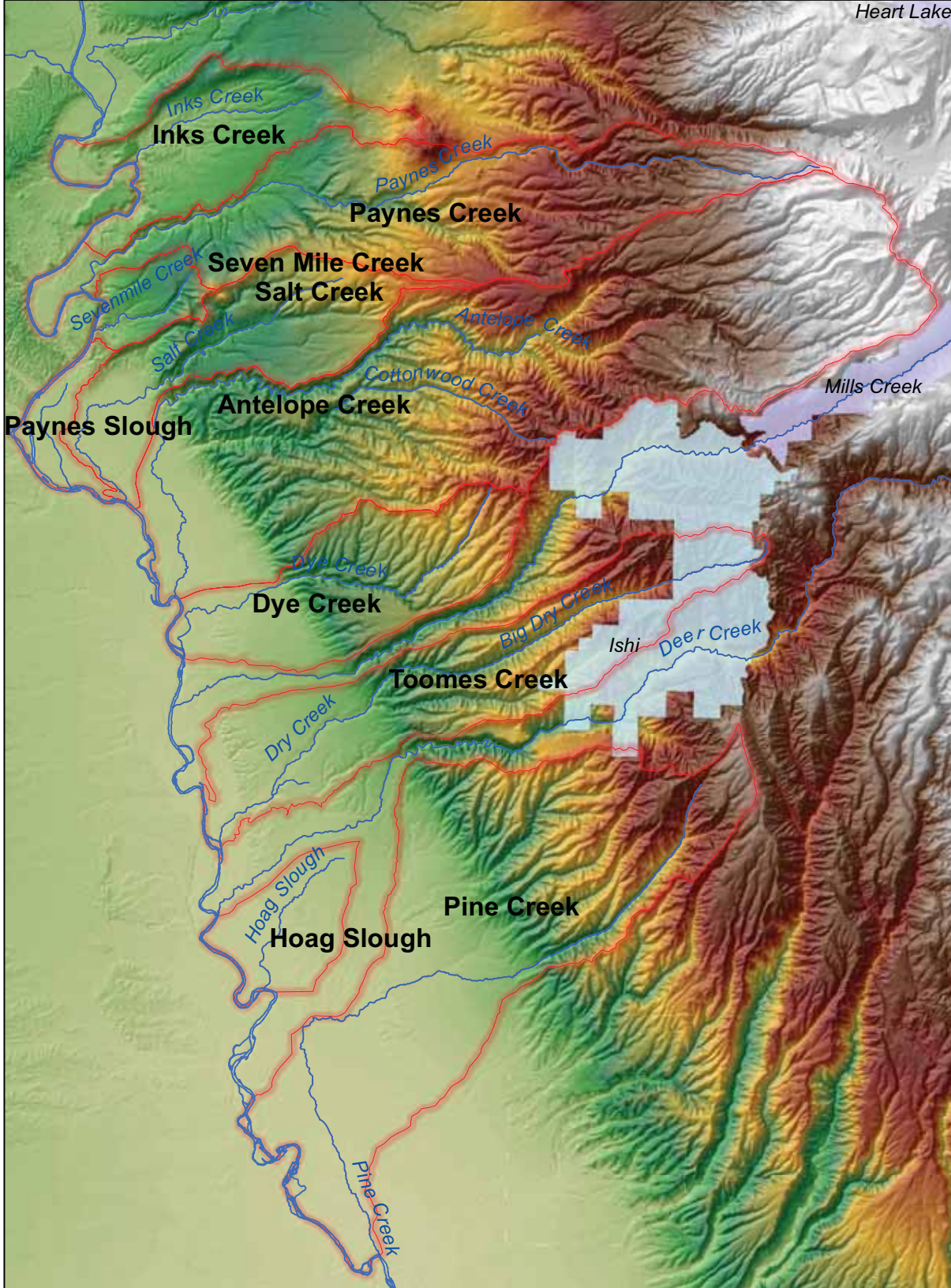
Tehama County Resource  
Conservation District  
(c) 2010






# Tehama East Watershed Assessment

## Wilderness Areas Existing and Proposed Tehama East Watersheds

Wilderness Existing and Recommended  
Used for National Forest planning and assessment and other natural resource applications

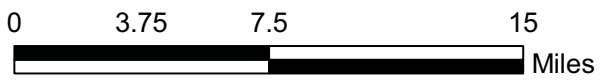


### KEY

-  Wilderness Areas - Recommended
-  Wilderness Areas - Existing
- <http://www.fs.fed.us/r5/rsl/clearinghouse/gis-download.shtml>
-  Watershed Boundary



Tehama County Resource Conservation District  
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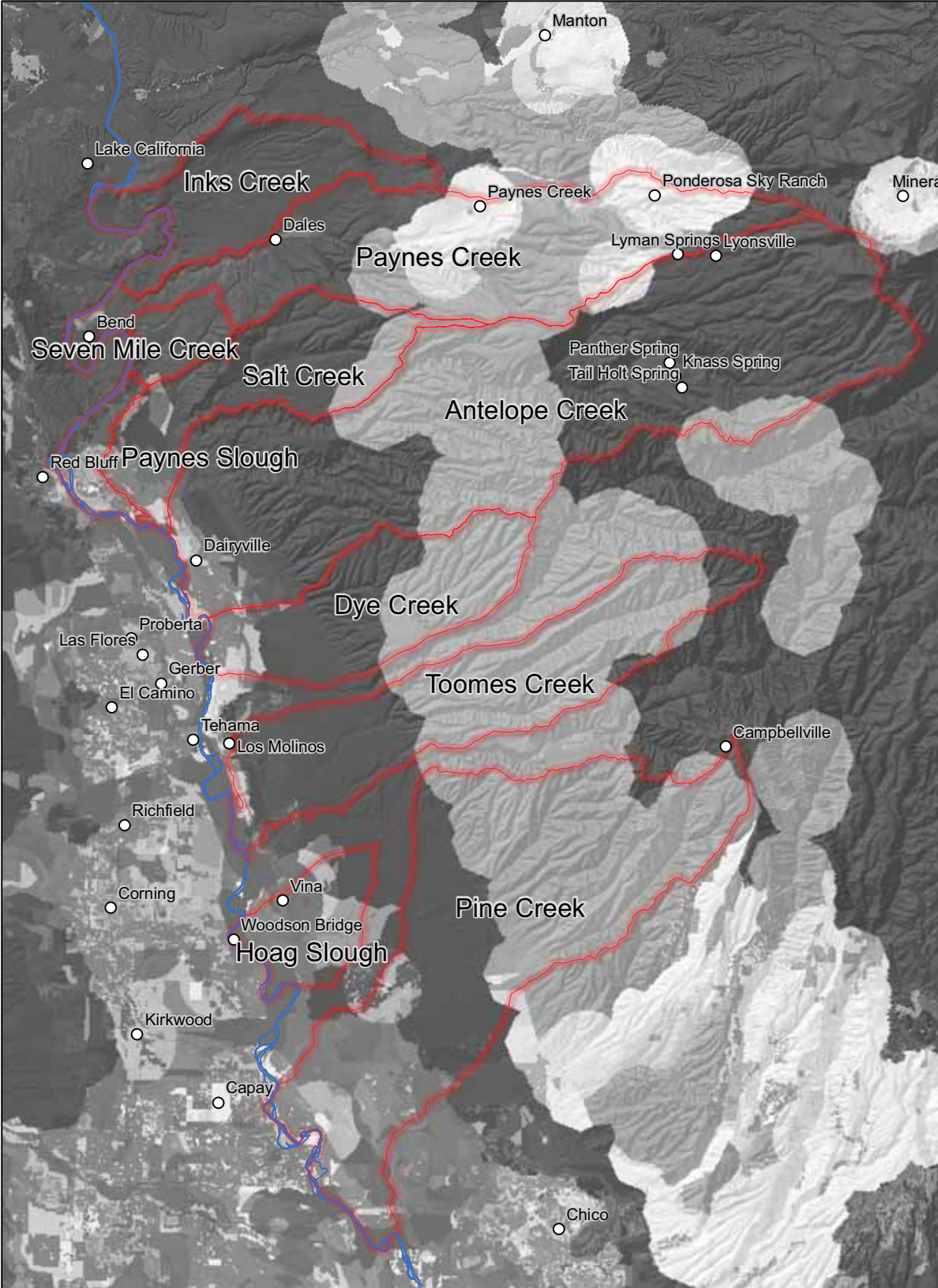


# Tehama East Watershed Assessment

## Wildland-Urban Interface Tehama East Watersheds

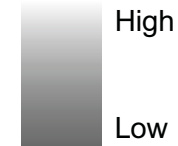
"The Wildland-Urban Interface (WUI) is the area where houses meet or intermingle with undeveloped wildland vegetation. This makes the WUI a focal area for human-environment conflicts such as wildland fires, habitat fragmentation, invasive species, and biodiversity decline. Using geographic information systems (GIS), we integrated U.S. Census and USGS National Land Cover Data, to map the Federal Register definition of WUI (Federal Register 66:751, 2001). These data are useful within a GIS for mapping and analysis at national, state, and local levels."

Quoted from:  
[http://silvis.forest.wisc.edu/library/WUI\\_Metadata\\_example.html](http://silvis.forest.wisc.edu/library/WUI_Metadata_example.html)




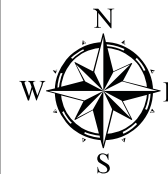
### KEY

#### WUI Potential

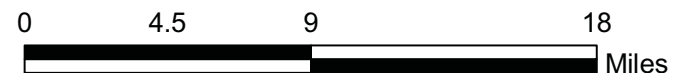


<http://www.fs.fed.us/r5/rsi/clearinghouse/gis-download.shtml>

 Watershed Boundary



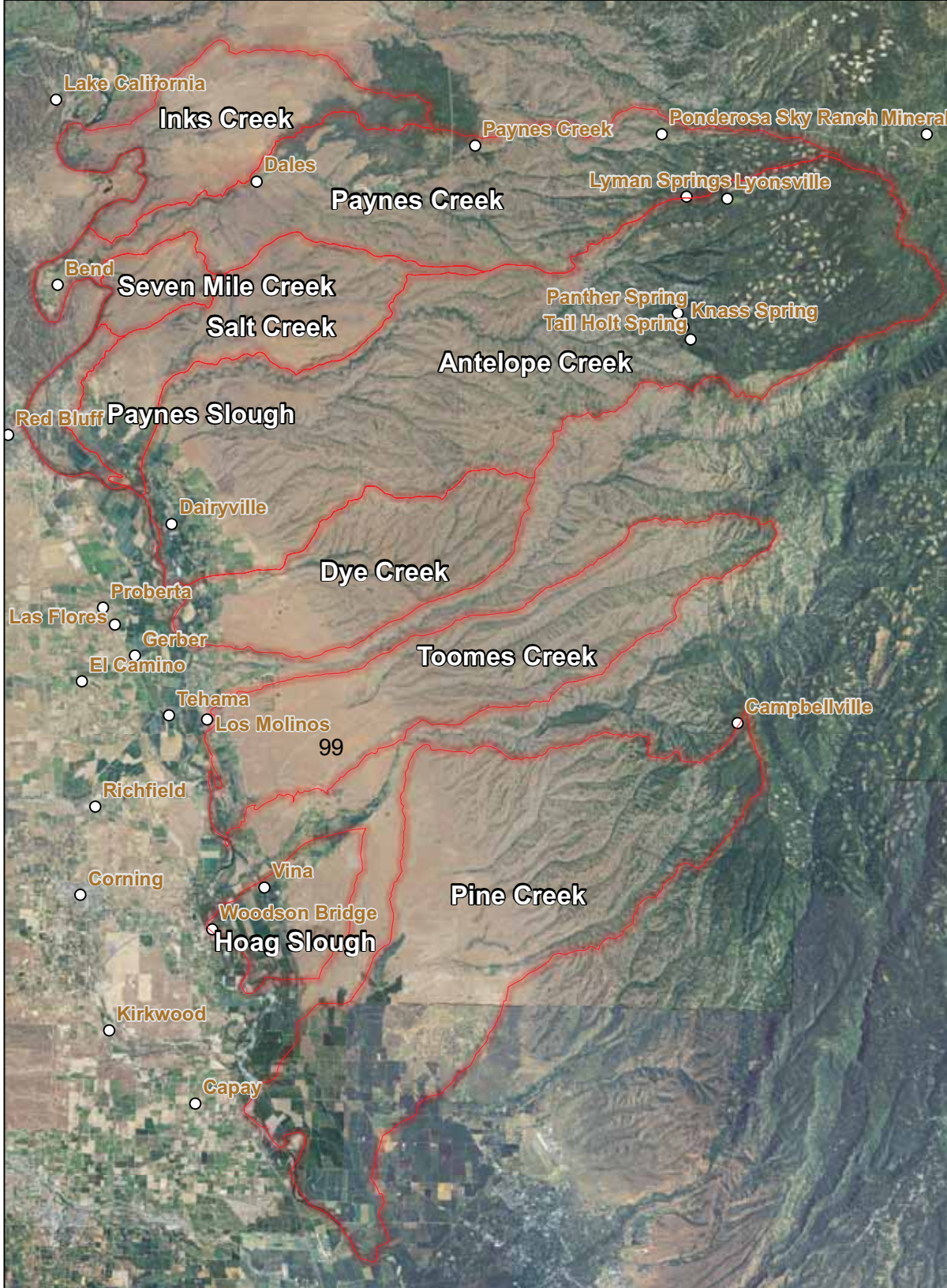
Tehama County Resource  
 Conservation District  
 (c) 2010



# Tehama East Watershed Assessment

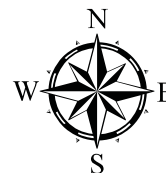
NAIP 2009

Tehama East Watersheds

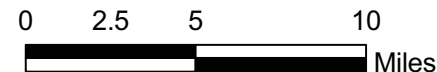


"The National Agriculture Imagery Program (NAIP) acquires imagery during the agricultural growing seasons in the continental U.S. A primary goal of the NAIP program is to enable availability of digital orthophotography within a year of acquisition."

Quoted from:  
<http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=landing>



Tehama County Resource  
Conservation District  
(c) 2010








# Tehama East Watershed Assessment

## Water Features National Hydrography Dataset USGS Tehama East Watersheds

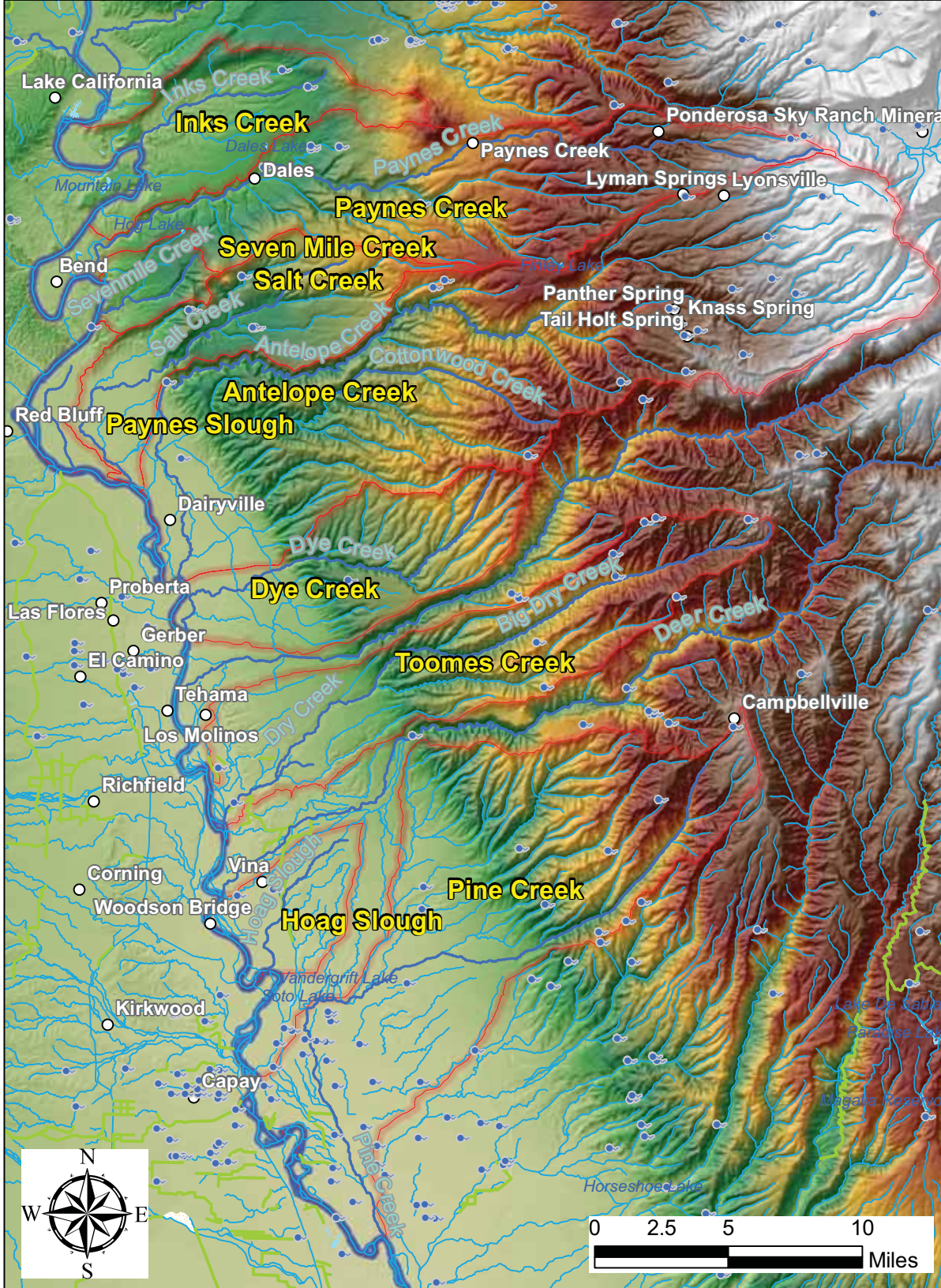
"The National Hydrography Dataset (NHD) is the surface water component of The National Map. The NHD is a comprehensive set of digital spatial data representing the surface water of the United States using common features such as lakes, ponds, streams, rivers, canals, and oceans. These data are designed to be used in general mapping and in the analysis of surface-water systems using geographic information systems (GIS). In mapping, the NHD is used with other data themes such as elevation, boundaries, and transportation to produce general reference maps. Customized maps can be made to meet specific needs of the user by emphasizing certain aspects of the data. A map emphasizing hydrography can be produced by displaying more of the content embedded in hydrography.

The NHD often is used by scientists, specifically in surface-water analysis using GIS technology. This takes advantage of a rich set of embedded attributes that can be processed by a computer system to generate specialized information. This information can then be portrayed in specialized maps to better understand the results. These analyses of hydrography are possible largely because the NHD contains a flow direction network that traces the water downstream or upstream. It also uses an addressing system to link specific information about the water such as water discharge, water quality, and fish population. Using the basic water features, flow network, linked information, and other characteristics, it is possible to study cause and affect relations, such as how a source of poor water quality upstream might affect a fish population downstream."

Quoted from:  
<http://nhd.usgs.gov/index.html>

- KEY**
-  Springs
  -  Canal/Ditch
  -  Streams/Rivers
  -  Lake or Pond
  -  Watershed Boundary

<http://nhd.usgs.gov/data.html>



# Tehama East Watershed Assessment








National Wetland Inventory  
 US Fish & Wildlife Service  
 Tehama East Watersheds

"Wetlands provide a multitude of ecological, economic and social benefits. They provide habitat for fish, wildlife and a variety of plants. Wetlands are nurseries for many saltwater and freshwater fishes and shellfish of commercial and recreational importance. Wetlands are also important landscape features because they hold and slowly release flood water and snow melt, recharge groundwater, act as filters to cleanse water of impurities, recycle nutrients, and provide recreation and wildlife viewing opportunities for millions of people."

Quoted from:  
<http://www.fws.gov/wetlands/>

## KEY

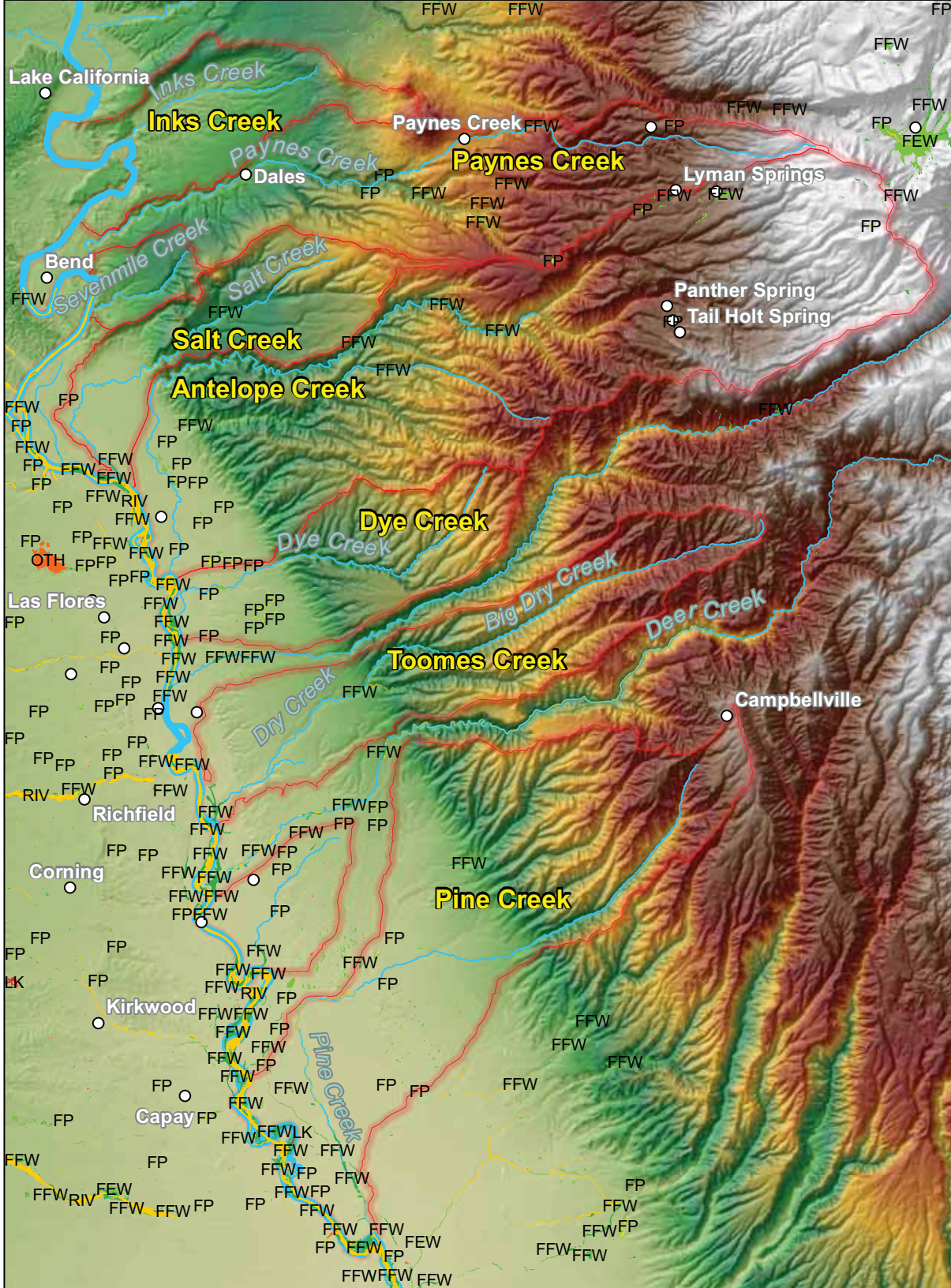
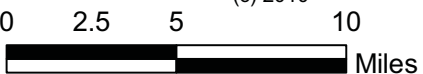
### Wetland Type

-  FEW Freshwater Emergent Wetland
-  FFW Freshwater Forested/Shrub Wetland
-  FP Freshwater Pond
-  LK Lake
-  OTH Other
-  RIV Riverine
-  Watershed Boundary

<http://www.fws.gov/wetlands/Data/DataDownload.html>



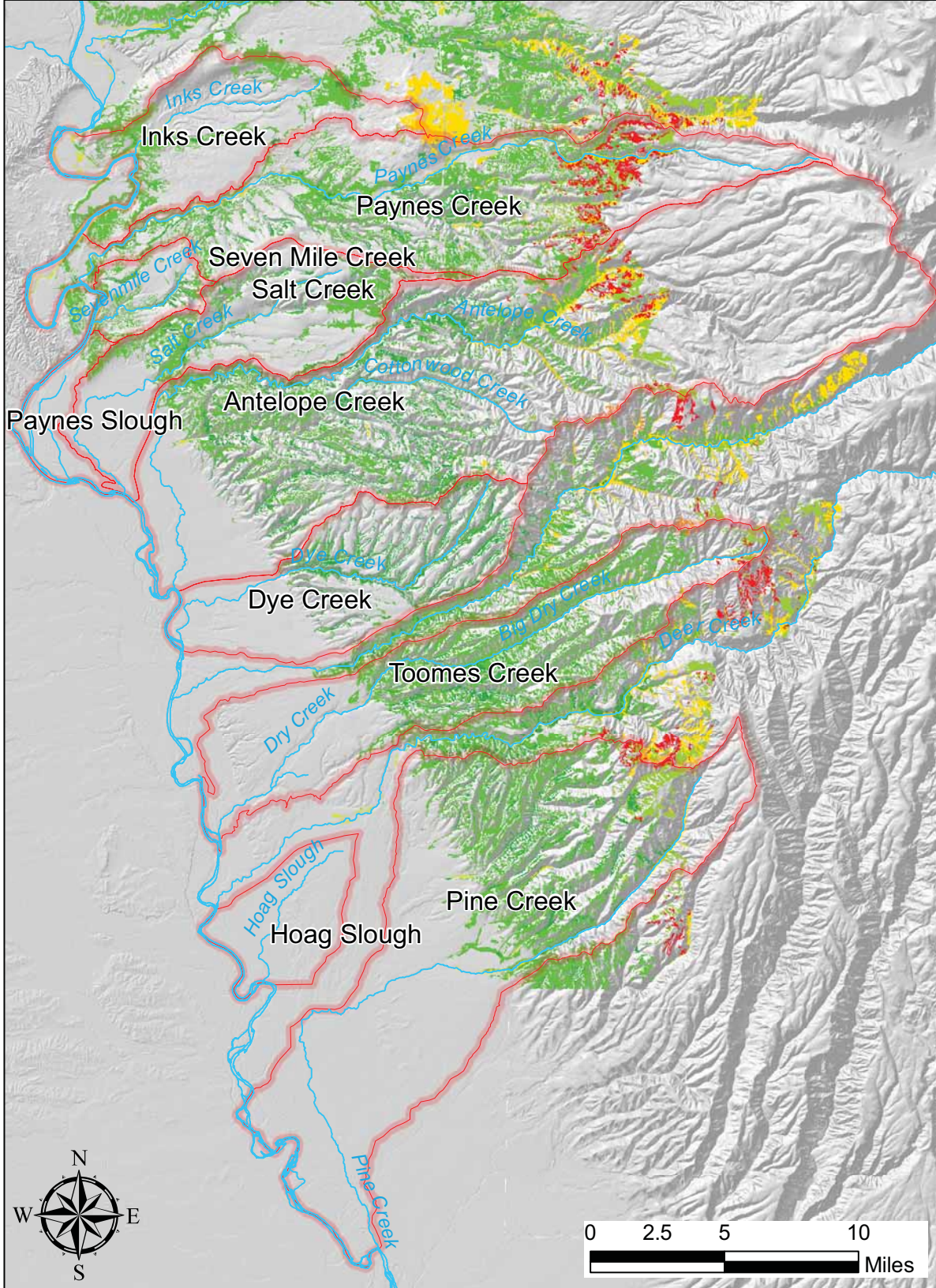
Tehama County Resource  
 Conservation District  
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# Tehama East Watershed Assessment

## Oak Woodlands

TNC/CNPS/TCRCD Special Project  
Tehama East Watersheds



"Oak woodlands are one of California's most treasured and iconic landscapes. To many, the sight of majestic oaks rising from the state's rolling foothills forms the core of California's natural persona. Oak woodlands are also rich in wildlife and are a favored place for people to recreate, build their homes, and pursue their livelihoods. Unfortunately, oak woodlands are disappearing throughout the state. Millions of acres of California's oak woodlands have been lost since 1950 along with nearly 90 percent of riparian woodlands statewide. Only about one-third of the 10-12 million acres of oak woodlands that once graced our valleys and hills remain. Vast acres have been lost to intensive agriculture, woodcutting, housing and other urban development (Garrison et al. 2000). Statewide, over 30,000 acres of oak woodlands are converted to residential and commercial uses each year and only about 4 percent of the remaining woodlands are protected (California Oak Foundation Statistics). Eighty percent of the state's hardwood rangelands are privately held (Standiford 1999)."

Quoted from:  
Tehama County Voluntary Oak Woodland Management Plan

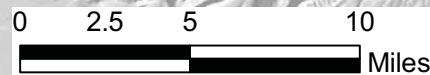
"Two-thirds of California's drinking water passes through or is stored in oak woodlands."

O'Geen, A.T., R.A. Dhlgren, A.Swarowsky, K.W. Tate, D.J. Lewis, and M.J. Singer. 2010. Research connects soil hydrology and stream water chemistry in California oak woodlands. California Agriculture 64 (2): 78-84.

- ### Legend
- Oaks
- Quercus wislizeni (Interior Live Oak Tree)
  - Quercus douglasii (Blue Oak)
  - Quercus kelloggii (Black Oak)
  - Quercus lobata (Valley Oak)
  - Quercus chrysolepis (Canyon Live Oak)
  - Quercus berberidifolia (scrub oak)
  - Quercus durata (Leather Oak)
  - Quercus garryana/ var. breweri (Brewer Oak)

TNC, CNPS, TCRCD Special Project  
 Watershed Boundary

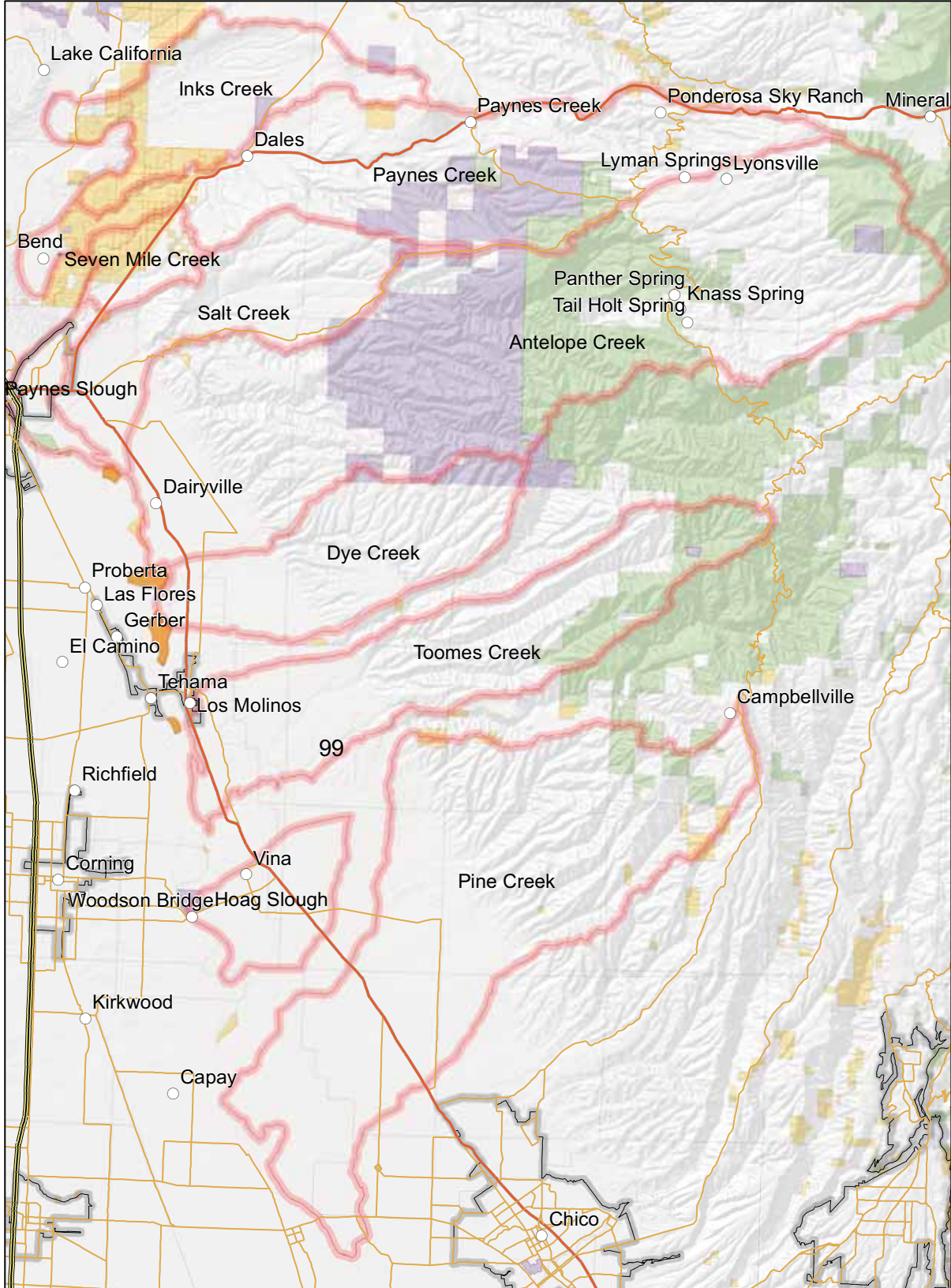
Tehama County Resource Conservation District (c)2010



# Tehama East Watershed Assessment

## Land Ownership Tehama East Watersheds

The land tenure structure can affect the economic and social development of the land and its natural resource base. This system can be a instrument for conservation, by following prescribed rules and regulations that govern and managing that base. These systems are dynamic, and as the needs for the natural resources change, so to does the use of those lands change. They will respond to socio-economic and political factors that can change those resources utilized.



### Key

Land Ownership within the Tehama East Watersheds

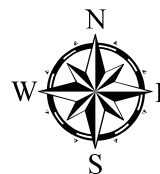
-  State Lands : 42,747 Acres
-  US National Forest : 44,925 Acres
-  US Bureau of Land Management : 16,078 Acres
-  US Fish and Wildlife : 27 Acres
-  Private : 337,967 Acres

<http://www.fs.fed.us/r5/rs/clearinghouse/gis-download.shtml>

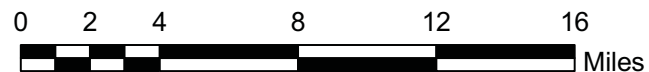
 Major Roads & Highways

 Urban Areas

 Watershed Boundary



Tehama County Resource  
Conservation District  
(c) 2010



# Tehama East Watershed Assessment

## Passage Assessment Database

### Tehama East Watersheds






"The Passage Assessment Database (PAD) is an ongoing inventory of known and potential barriers to anadromous fish in California. It compiles currently available fish passage information from more than 100 data sources, and allows past and future barrier assessments to be standardized and stored in one place. The inventory is to be used to identify barriers suitable for removal or modification to restore spawning and riparian habitat for salmon and steelhead, and to enhance aquatic and riparian habitat."

The PAD is intended to be compatible with a variety of other data sets related to anadromous fish issues. All PAD records are saved with geographic location information. This file can be used to represent the known and potential barriers on maps or to provide latitude/longitude coordinates. Each barrier record is indexed to the 24k high-resolution NHD allowing the user to combine the PAD with other fisheries data tied to the same hydrography.


Quoted from:  
[http://www.calfish.org/Portals/0/DataMaps/DataDownload/PAD\\_December2009.htm](http://www.calfish.org/Portals/0/DataMaps/DataDownload/PAD_December2009.htm)

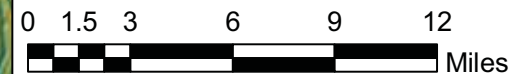
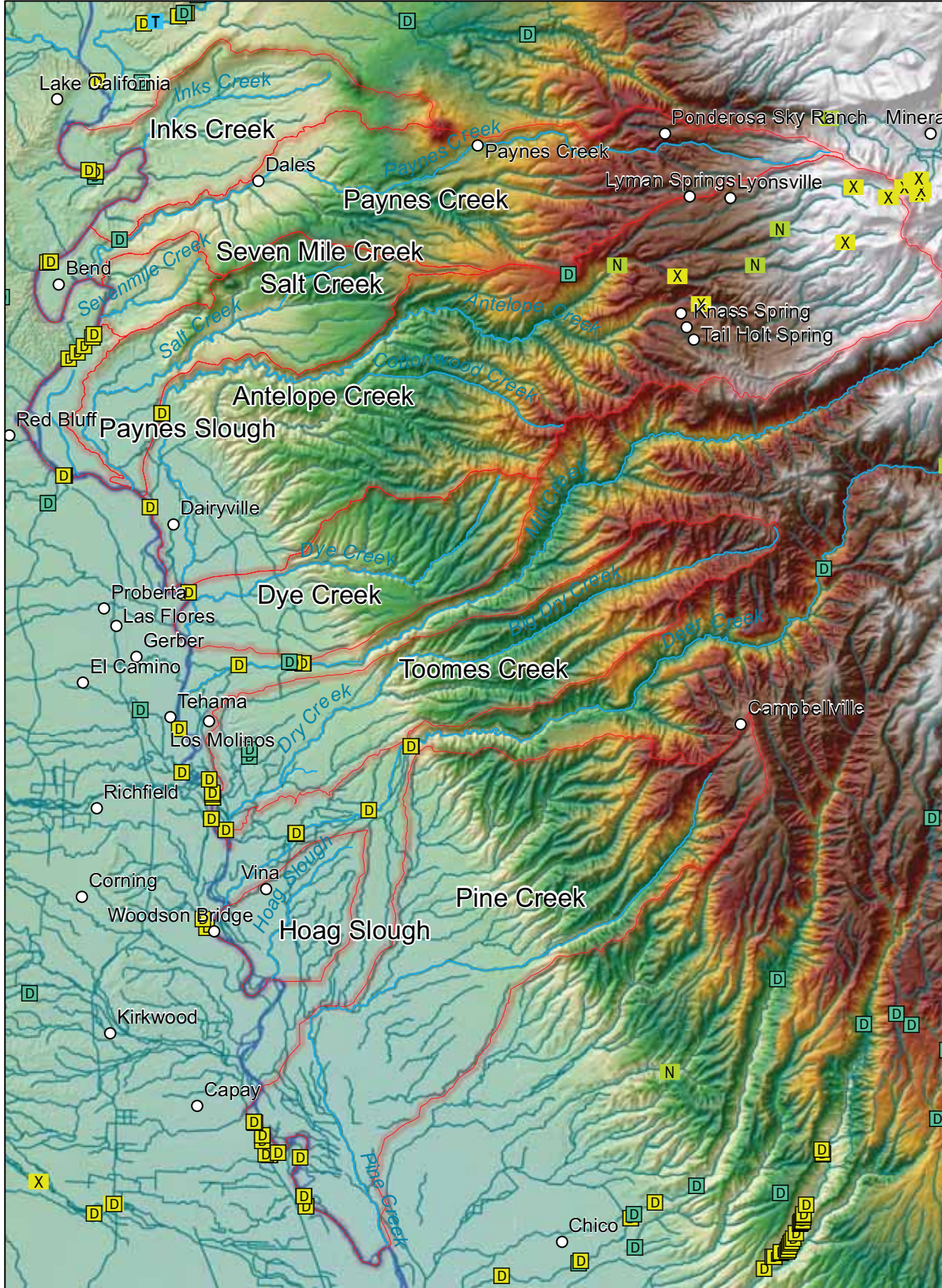
### Legend

#### Site Type

-  Dam
-  Diversion
-  Fish trap
-  Non-structural
-  Road crossing

<http://www.calfish.org/DataampMaps/CalFishDataDownloads/tabid/93/Default.aspx>

 Watershed Boundary



# Tehama East Watershed Assessment

## Riparian Vegetation in Hardwood Rangelands








### Tehama East Watersheds

"Hardwood rangelands below 5000' elevation were originally mapped by Dr. Norm Pillsbury (Cal Poly SLO) under contract by California Department of Forestry and Fire Protection (CDF). Polygons were delineated on 1981 1:24,000 scale black and white air photos, transferred to 1:100,000 scale base maps, and digitized. The data were updated by Pacific Meridian Resources under contract from CDF using 1990 LANDSAT TM imagery. This GRID format data represent a portion of the base classification data used to update delineated polygons for a 375 meter buffer around perennial streams. Each pixel is coded based on life form (e.g. riparian, hardwood, conifer, shrub).

In response to concerns over the extent and condition of California's hardwood rangelands, the Board of Forestry asked the University of California, California Department of Forestry and Fire Protection, and the California Department of Fish and Game to develop a program of research, education, and monitoring designed to conserve hardwood rangelands."

Quoted from: <http://frap.cdf.ca.gov/data/frapgisdata/output/riparian.txt>

#### KEY

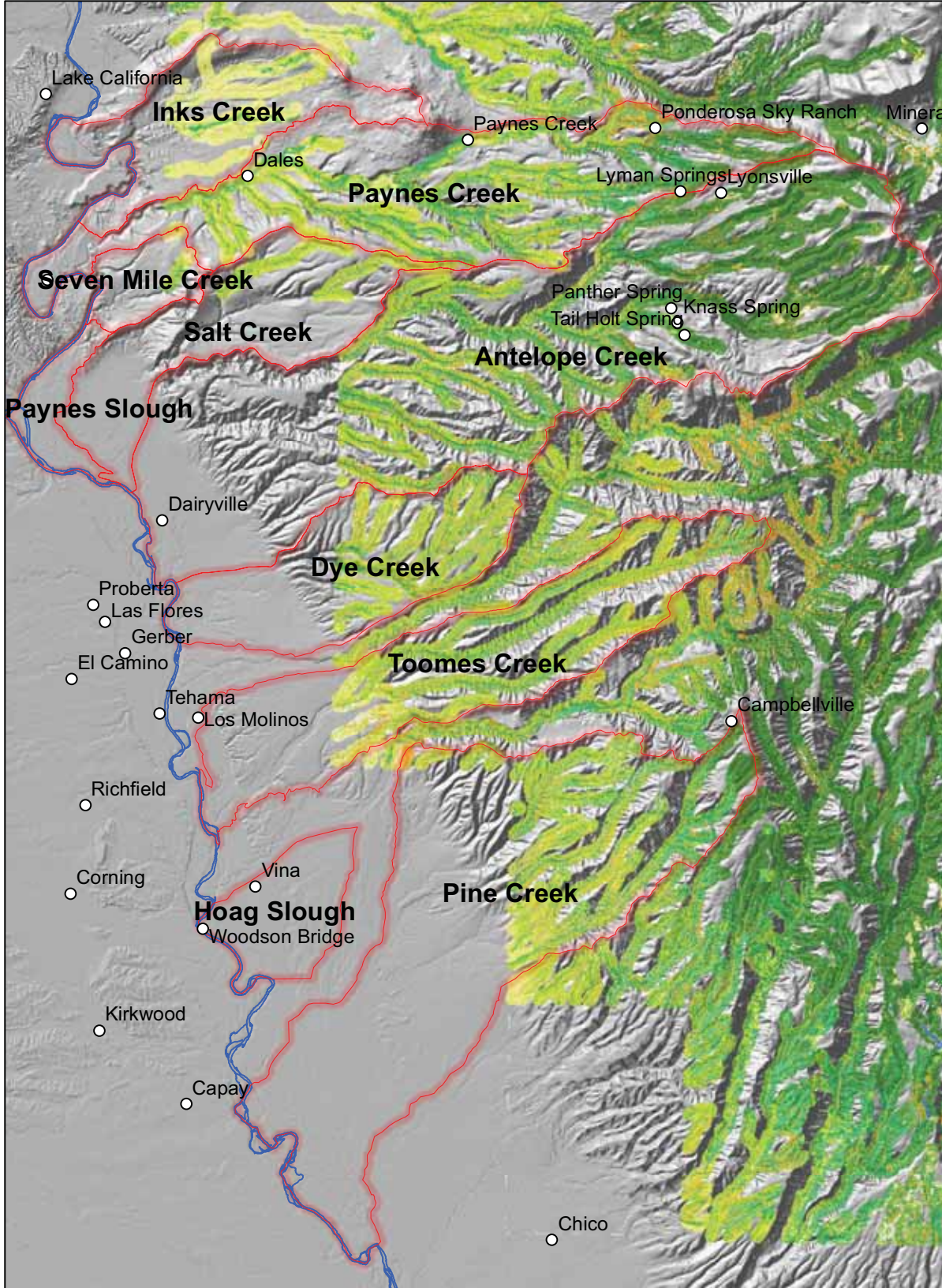
-  Riparian
-  Hardwood Range w/<70% Canopy
-  Shrub
-  Conifer
-  Herbaceous
-  Water
-  Other: Urban, Marsh, Rock, Barren

<http://frap.cdf.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=riparian>

 Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010





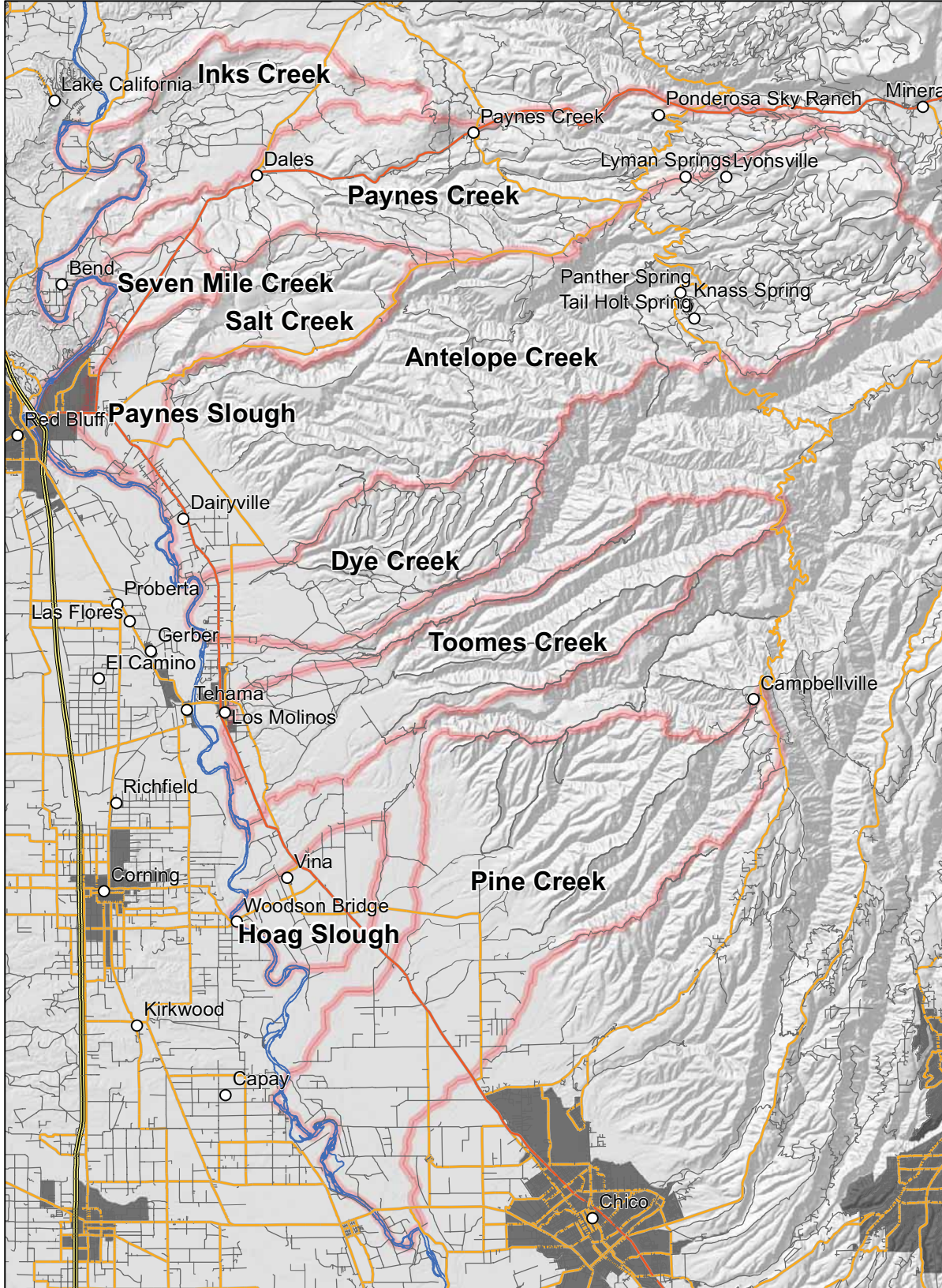
# Tehama East Watershed Assessment

## Roadways



### Tehama East Watersheds

"Vehicles and the highways affect wildlife in several significant ways. Road kills account for substantial mortality of many species, including deer, owls, and snakes. More deer are killed by collisions with vehicles than by hunting. Habitat is eliminated and fragmented by roads and highways. Oil and other chemicals from roads pollute aquatic ecosystems. And invasive species are often introduced along highways."


Quoted from:  
[www.dfg.ca.gov/wildlife/WAP/docs/report/ch6-strengthening.pdf](http://www.dfg.ca.gov/wildlife/WAP/docs/report/ch6-strengthening.pdf) - 2007-08-20




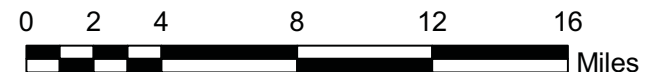
### Legend

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Other Road
-  Ramp
-  Ferry
-  Pedestrian Way

ESRI

 Urban Areas

 Watershed Boundary



# Tehama East Watershed Assessment

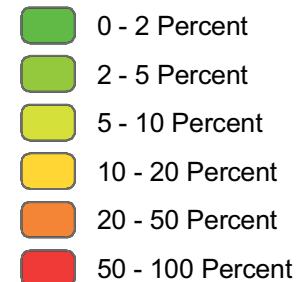
## Percent Slope Tehama East Watersheds

"Landslide movements are interpreted from the geomorphic expression of the landslide deposit and source area, and are categorized as falls, topples, spreads, slides, or flows. Falls are masses of soil or rock that dislodge from steep slopes and free-fall, bounce, or roll downslope. Topples move by the forward pivoting of a mass around an axis below the displaced mass. Lateral spreads, commonly induced by liquefaction of material in an earthquake, move by horizontal extension and shear or tensile fractures. Slides displace masses of material along one or more discrete planes. In rotational sliding the slide plane is curved and the mass rotates backwards around an axis parallel to the slope; in translational sliding the failure surface is more or less planar and the mass moves parallel to the ground surface. Flows mobilize as a deforming, viscous mass without a discrete failure plane. More than one form of movement may occur during a failure, in which case the movement is classified as complex if movements occur sequentially and composite if they do not."

Quoted from:  
[http://www.consrv.ca.gov/cgs/geologic\\_hazards/landslides/Pages/index.aspx](http://www.consrv.ca.gov/cgs/geologic_hazards/landslides/Pages/index.aspx)

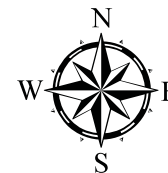
### KEY

#### Percent Slope



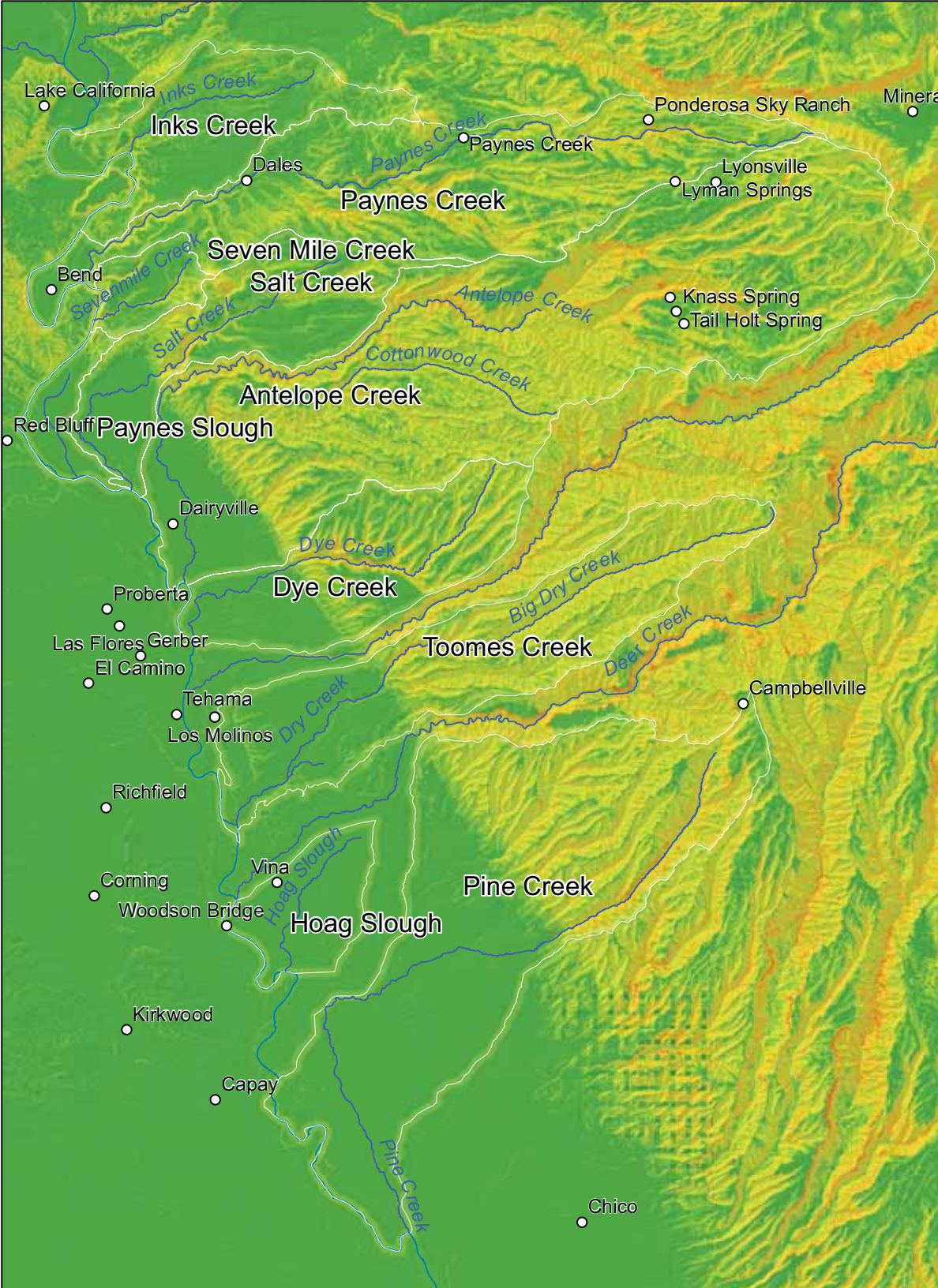
<http://data.geocomm.com/catalog/US/61069/919/group4-3.html>

 Watershed Boundary



Tehama County Resource  
Conservation District

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# Tehama East Watershed Assessment

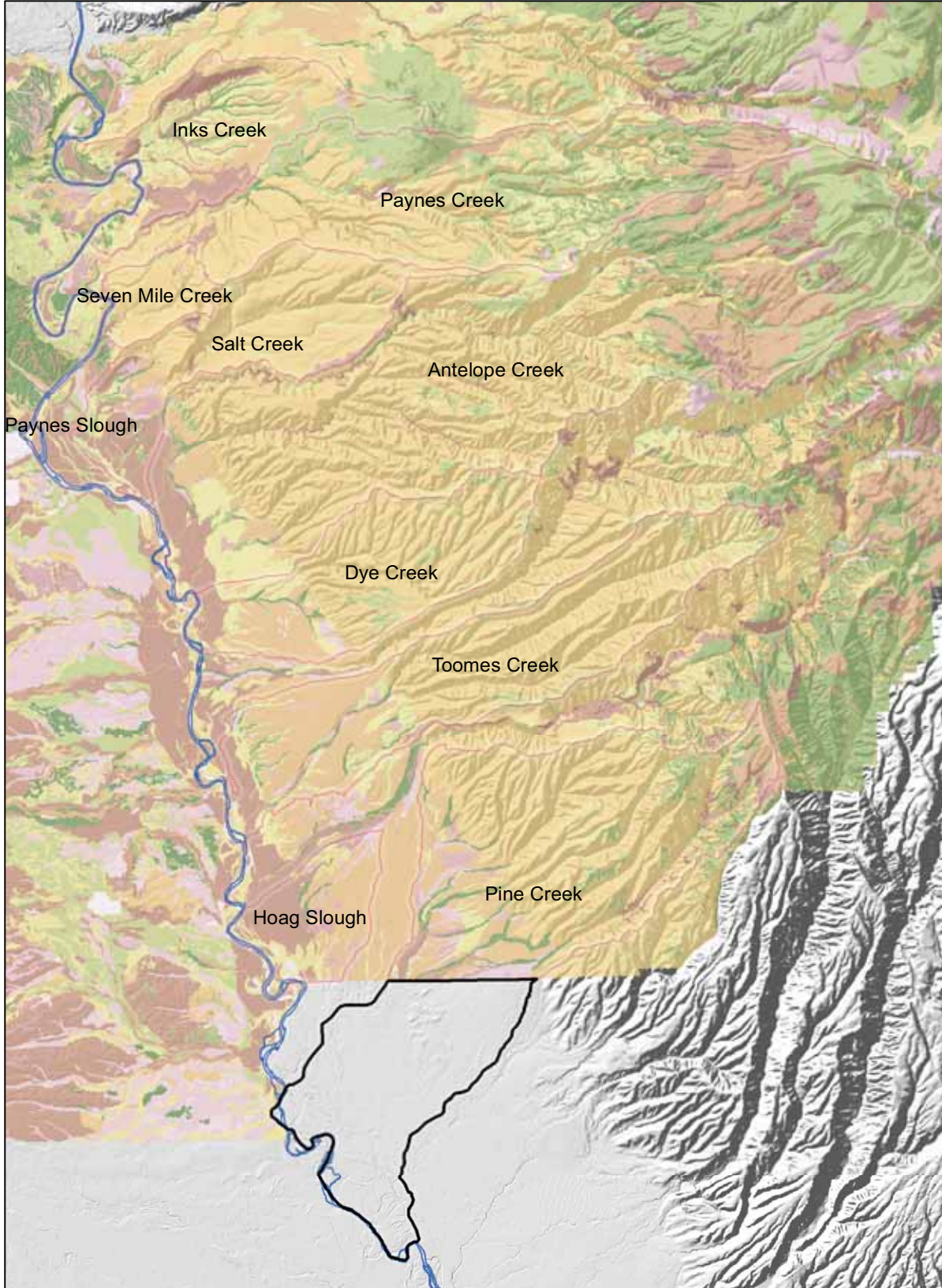
## Land Capability Classification Tehama East Watersheds

"Definition. Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time.

Classes. Land capability classification is subdivided into capability class and capability subclass nationally. Some states also use a capability unit.

Significance. Land capability classification has value as a grouping of soils. National Resource Inventory information, Farmland Protection Policy Act, and many field office technical guides have been assembled according to these classes. The system has been adopted in many textbooks and has wide public acceptance. Some state legislation has used the system for various applications. Users should reference Agriculture Handbook No. 210 (Exhibit 622-2) for a listing of assumptions and broad wording used to define the capability class and capability subclass."

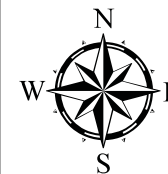
Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part622.html>



### KEY

See Land Capability Key

 Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

## Land Capability Classification Tehama East Watersheds

### Cap\_Units

Code	Unknown	Capability Class.
I-1	IVs-3	Definition. Capability class is the broadest category in the land capability classification system. Class codes I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), and VIII (8) are used to represent both irrigated and nonirrigated land capability classes.
IIIe-3	IVs-4	
IIIe-5	IVs-8	Classes and definitions. Class I (1) soils have slight limitations that restrict their use.
IIIs-3	IVw-5	
IIIs-5	Ive-1	Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
IIIs-8	VIIIs-8	
IIIs-9	VIIe-3	Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
IIIw-5	VIIe-4	
IIe-1	VIIe-8	Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
IIe-3	VIIIs-1	
IIe-4	VIIIs-4	Class V (5) soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
IIIs-0	VIIIs-7	
IIIs-3	VIIIs-8	Class VI (6) soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
IIIs-4	VIIw-4	
IIIs-5	VIe-3	Class VII (7) soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
IIIs-8	VIe-4	
IIIs-o	VIe-5	Class VIII (8) soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.
IIw-0	VIe-8	
IIw-2	VIIs-1	Capability Subclass.
IVe-1	VIIs-7	
IVe-3	VIIs-8	Definition. Capability subclass is the second category in the land capability classification system. Class codes e, w, s, and c are used for land capability subclasses.
IVe-4	VIw-1	
IVe-5	Vw-2	Subclasses and definitions. Subclass e is made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass.
IVe-8		

### Capability Class.

Definition. Capability class is the broadest category in the land capability classification system. Class codes I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), and VIII (8) are used to represent both irrigated and nonirrigated land capability classes.

### Classes and definitions.

Class I (1) soils have slight limitations that restrict their use.

Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class V (5) soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VI (6) soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VII (7) soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.

Class VIII (8) soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.

### Capability Subclass.

Definition. Capability subclass is the second category in the land capability classification system. Class codes e, w, s, and c are used for land capability subclasses.

### Subclasses and definitions.

Subclass e is made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass.

Subclass w is made up of soils for which excess water is the dominant hazard or limitation affecting their use. Poor soil drainage, wetness, a high water table, and overflow are the factors that affect soils in this subclass.

Subclass s is made up of soils that have soil limitations within the rooting zone, such as shallowness of the rooting zone, stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium content.

Subclass c is made up of soils for which the climate (the temperature or lack of moisture) is the major hazard or limitation affecting their use.

Application. The subclass represents the dominant limitation that determines the capability class. Within a capability class, where the kinds of limitations are essentially equal, the subclasses have the following priority: e, w, s, and c. Subclasses are not assigned to soils in capability class I (1) and subclass "e" is not used in class V (5).

### Capability unit.

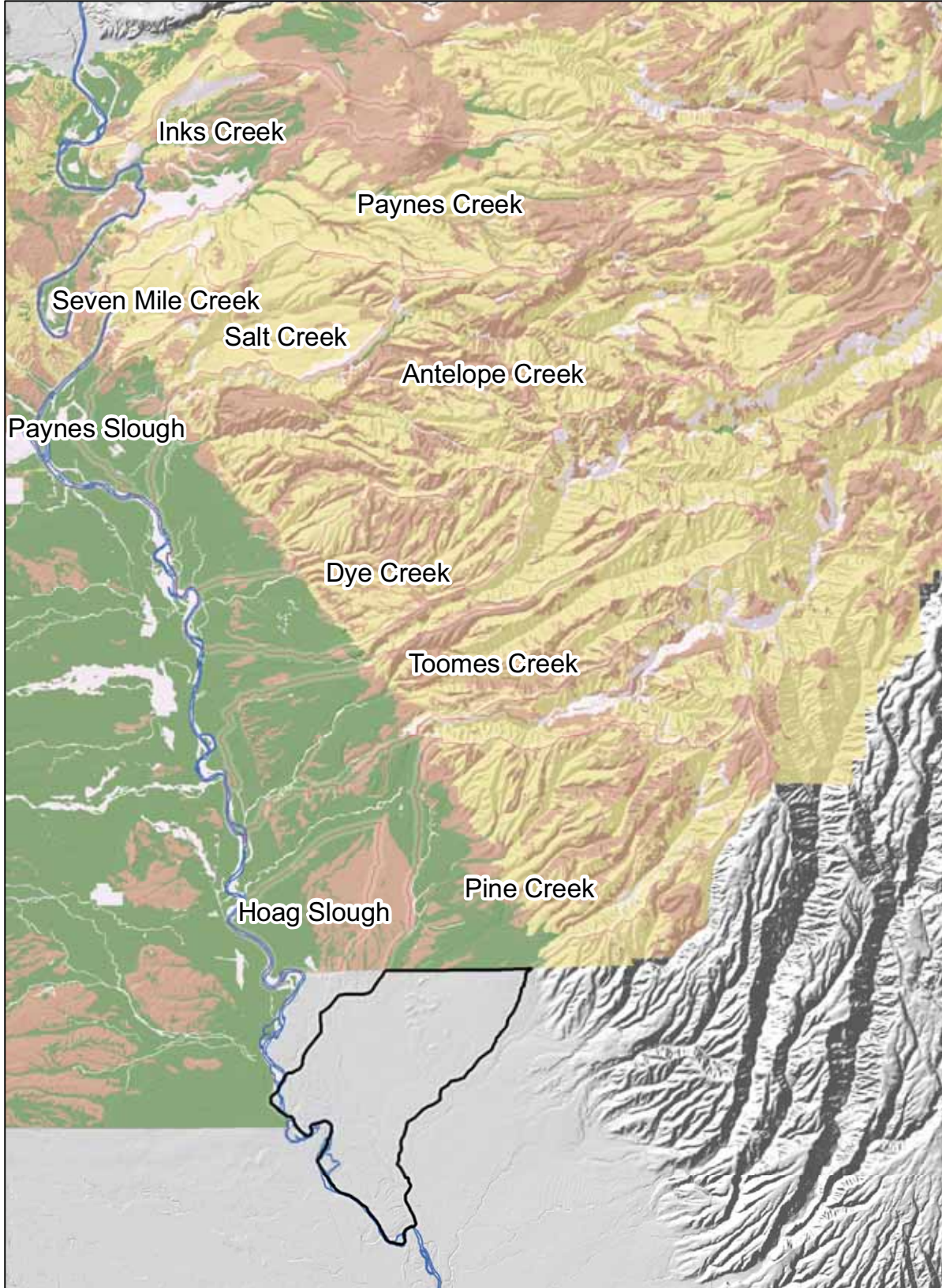
Definition. Capability unit is the first category listed in the land capability classification system. It is a grouping of one or more individual soil mapping units having similar potentials and continuing limitations or hazards.

Application. Use of this category and definition of codes are state options. Valid entries in NASIS are integers ranging from 1 to 99.

Entries. Enter the appropriate capability class and subclass code for each map unit component, including miscellaneous areas. Enter the appropriate capability unit code, if one is to be used in the area. Allowable entries for capability class are I (1), II (2), III (3), IV (4), V (5), VI (6), VII (7), or VIII (8). Allowable entries for subclass are e, w, s, or c. Enter subclass for all classes except class I (1) and subclass "e" is not used in class V (5). Valid entries for capability unit are integers ranging from 1 to 99. Nonirrigated land capability classes and subclasses should be entered for all map unit components, including miscellaneous areas. Enter the irrigated land capability class and subclass if the soil component is irrigated or potentially will be irrigated.

# Tehama East Watershed Assessment

NRCS Soils Highly Erodible Soils  
Tehama East Watersheds



## Highly Erodible Land - Highly Erodible Soil Map Unit List

Definition. Highly erodible land is defined by the Sodbuster, Conservation Reserve, and Conservation Compliance parts of the Food Security Act of 1985 and the Food, Agriculture, Conservation, and Trade Act of 1990. Determinations for highly erodible land are based on an erodibility index as defined in the National Food Security Act Manual.

Policy. Lists of highly erodible and potential highly erodible map units are maintained in the field office technical guide. Policy and procedures for developing and maintaining the lists are given in part 511 of the National Food Security Act Manual.

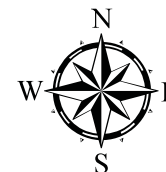
Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part622.html>

## KEY

### Highly Erodible Land Classification

- 1
- 2
- 3
- Code Unknown

Watershed Boundary



Tehama County Resource  
Conservation District  
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# Tehama East Watershed Assessment

NRCS Soils Hydric Soils  
Tehama East Watersheds

## "Hydric Soils

The definition of a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

## Concept

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are hydric if the soil, in an unaltered state, was hydric. Some series, designated as hydric, have phases that are not hydric depending on water table, flooding, and ponding characteristics."

Quoted from:

<http://soils.usda.gov/use/hydric/overview.html>

## KEY

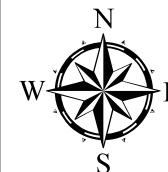
Hydric Percentage

- 1
- 2
- 3
- 5
- 10
- 25
- 35

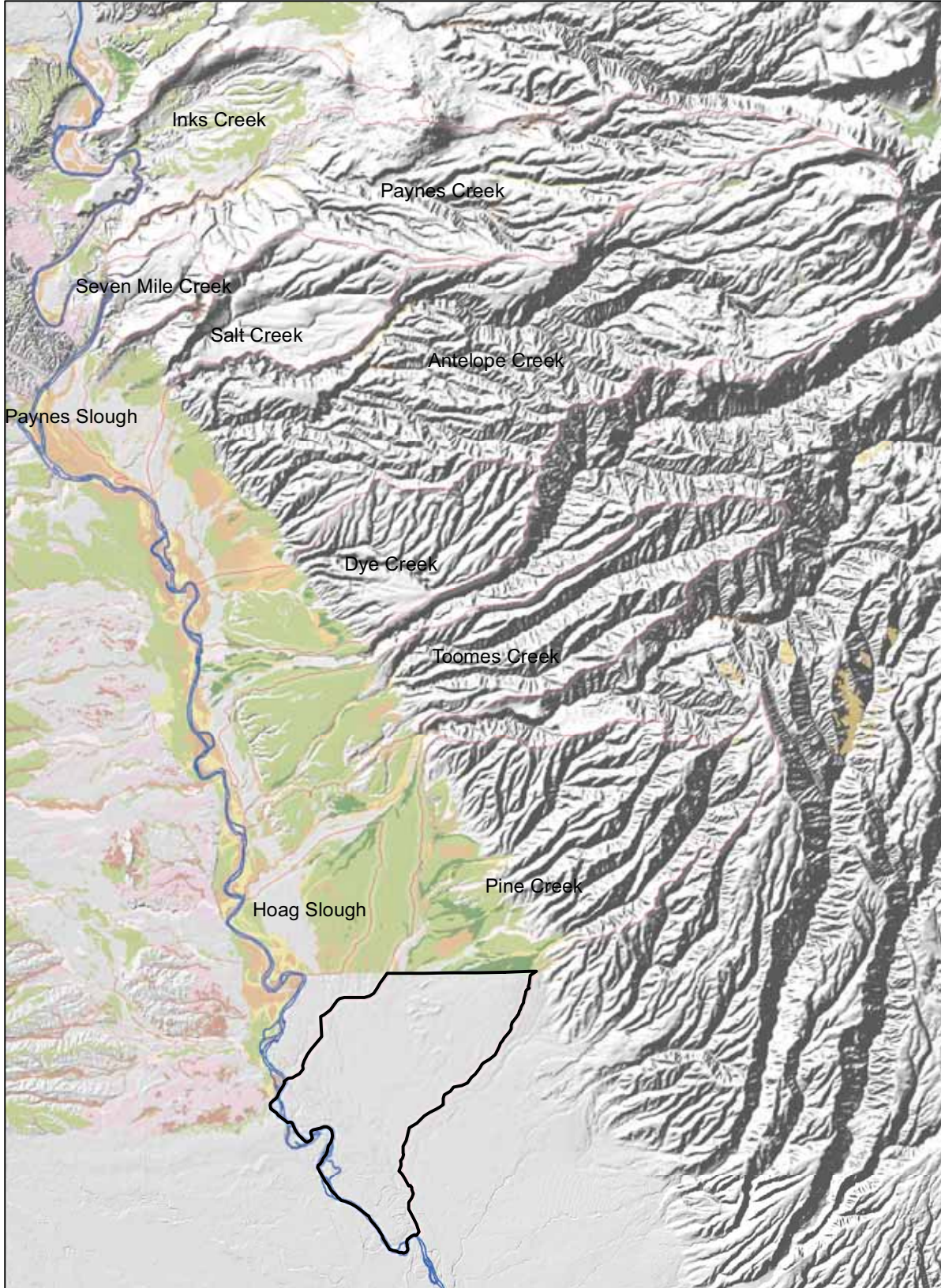
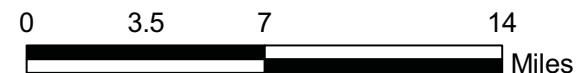
- 40
- 60
- 85
- 100
- C
- CX
- X
- Code Unknown

 South Pine Creek Watersheds within the Butte County Soils Database

 Watershed Boundary



Tehama County Resource Conservation District  
(c) 2010

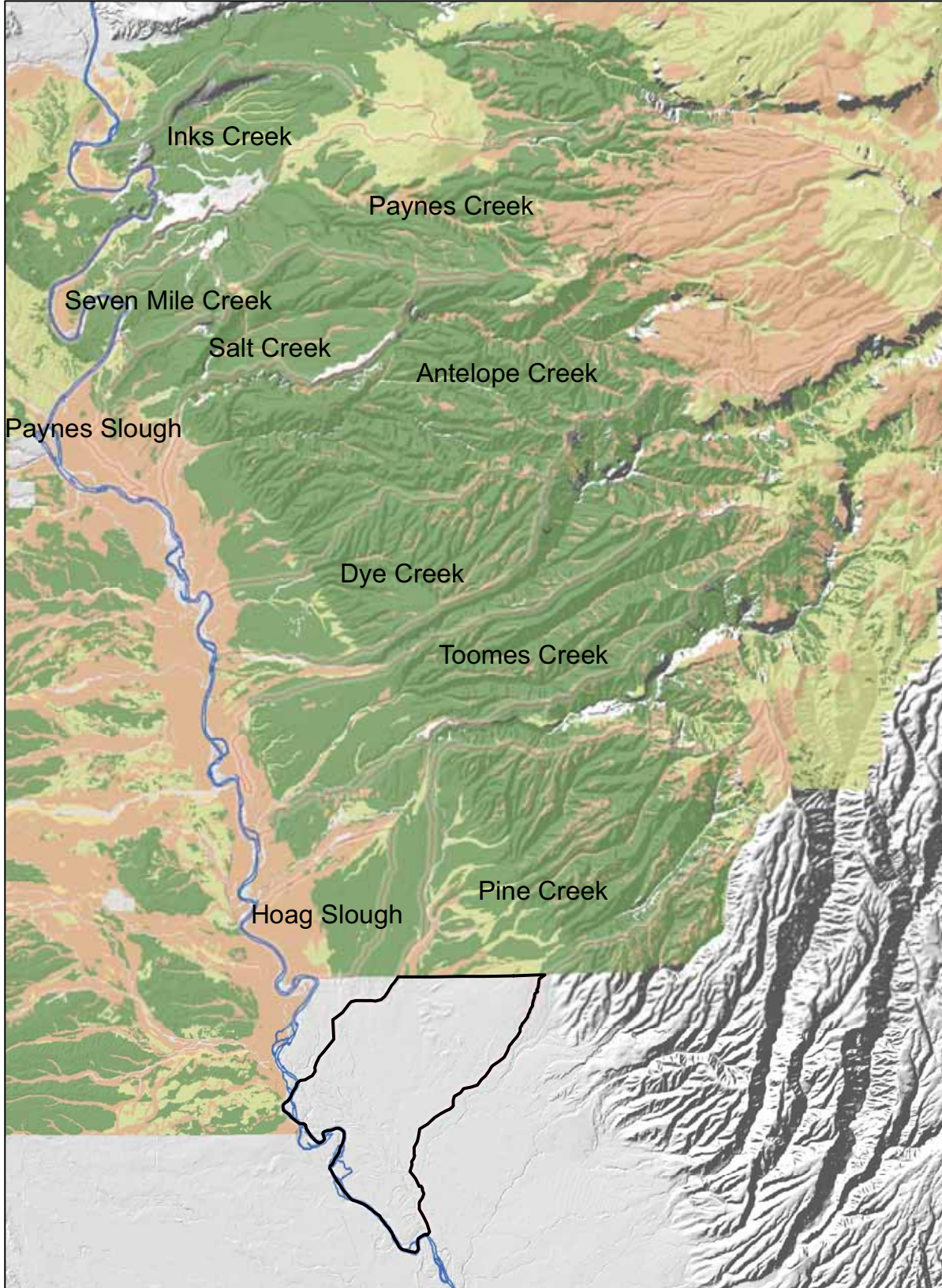


# Tehama East Watershed Assessment

## NRCS Soils Hydrologic Group Tehama East Watersheds

Hydrologic group is a group of soils having similar runoff potential under similar storm and cover conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The influence of ground cover is treated independently.

Quoted from:  
<http://soils.usda.gov/technical/handbook/contents/part618.html>



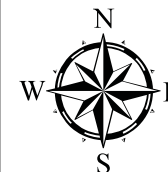
### KEY

#### Hydrologic Group

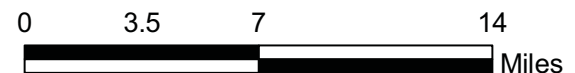
- A
- B
- C
- D
- Code Unknown

Watershed Boundary

South Pine Creek Watersheds within the Butte County Soils Database



Tehama County Resource  
Conservation District  
(c) 2010

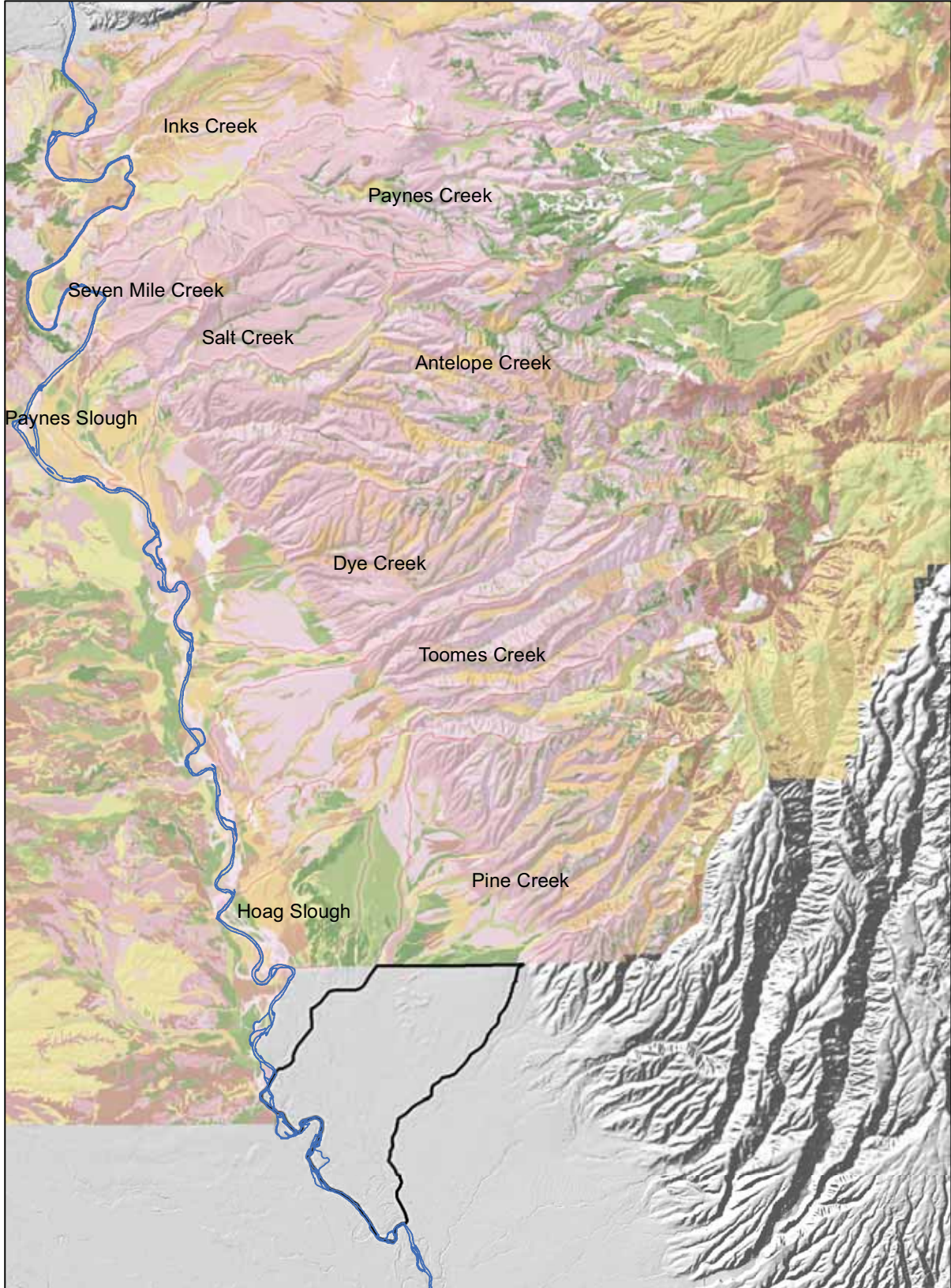


# Tehama East Watershed Assessment

## NRCS Soils Tehama East Watersheds


"NRCS Soils includes soil surveys for each state, a manual for surveying soil, an urban soil primer for homeowners and local planning boards, and "tools for educators" -- lessons and information on soil taxonomy (the "12 orders of soil"), fundamental concepts about soil, soil biology, and soil risks and hazards. (Natural Resources Conservation Service, Department of Agriculture)"

Quoted from:  
[http://free.ed.gov/resource.cfm?resource\\_id=1596](http://free.ed.gov/resource.cfm?resource_id=1596)

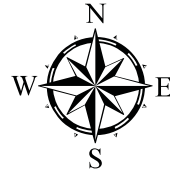


### KEY

See Soils Key

 Watershed Boundary

 South Pine Creek Watersheds within the Butte County Soils Database



Tehama County Resource  
Conservation District  
(c) 2010





# Tehama East Watershed Assessment

## NRCS Soils Tehama East Watersheds

### Soil Survey MUSYM

AaD	Cb	CyB	IcD	LaD	MmE	NhE	PrD2	TfD	WnD
AbD	Cc	Cz	IcE	LbB	MmF	NkB	PrE	TfE	WnE
AbE	CdD	CzD	IkD	LgF	MnE	NmB	PsE	TgD	WnF
AcA	CdE	Czs	IkE	Lk	Mo	NnF	PvB	TgE	WrE2
AcB	CeD	Czx	ImD	Lm	Mp	NoF	Rb	ThE	WsD
AcD	CfD	DbD	ImE	Ln	Mr	NrB	Rg	TkB	WsE
Ad	CfE	DgD	IrD	Lo	Mw	NrB2	Rh	TkD	Wy
Af	CgD	DnD	IrE	LsD	Mx	NrD	Rm	TmD	Wz
Ag	CgE	DxD	IrF	LtD	My	NrD2	RnA	TmE	Yo
An	ChD2	DxE	IsE	LvD	Mz	NrE	RnB	TnD	Ys
Ao	CkF	EgB	IxE	LvE	Mzd	NrE2	Ro	TnE	Yt
Ap	ClF	Ew	JgD	LvF	Mzm	NrF	Rr	ToE	Za
AsB	CmA	Fa	JgD2	LyD	Mzr	NvD	RtF	TsB	Zc
At	CmB	FoD	JgE	LyE	Mzs	NvE	RuF	TtB	Zm
Au	Cn	GP	JgE2	LyF	Mzt	NwD	ScD	TuB	Zo
AvA	Co	GgF	JgF	M-W	NODIG	NwE	ScE	TvB	
AvB	CpB	GnD	JgF2	MaD	NaD	Of	SnD	TwB	
Aw	CsA	GnE	Kc	Mc	NaE	Om	SnE	TxC	
Ay	CsB	GsD	Kf	Md	NaE2	Op	SnF	Vd	
Az	Ct	GsE	Km	Me	NcB	Or	SuD	VnA	
Bc	Cu	HgA	Kn	Mf	NcD	Os	SuE	VnB	
Bd	CvD	HgB	KoA	Mg	NcD2	PkA	TaA	Vw	
Bg	CvE	Hk	KoB	Mh	NcE2	PkB	TaB	Vy	
Bh	CwA	Hl	KpA	MkD	NhB	Pm	Tb	W	
BuD	CwB	HvD	KpB	MkE	NhD	PrB	Tc	WgD	
CaC	CxB2	HvE	LaB	MkF	NhD2	PrD	TeF	WgE	

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