
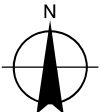
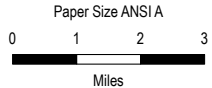


**Legend**  
 Eel River Valley Basin (No. 1-010)



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



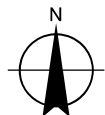
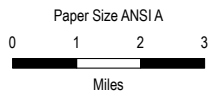
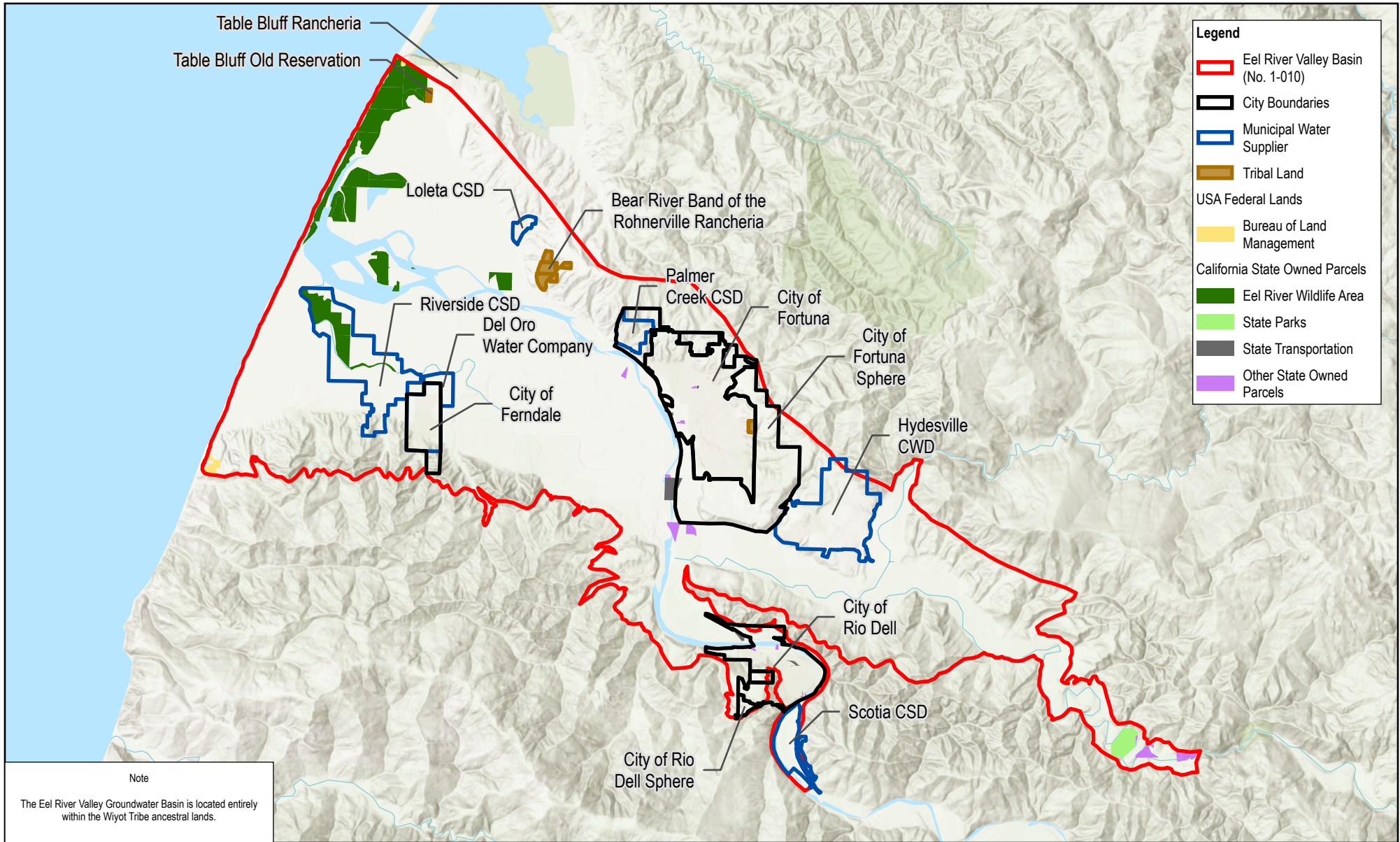
Humboldt County Groundwater Sustainability Agency  
 Eel River Valley Groundwater Sustainability Plan

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 Revision No. -  
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Site Location Map

FIGURE 1

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 Print date: 20 Jan 2022 - 09:52  
 Data source: DWR Basin, 2013; World Topographic Map - labelless; Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS; transportation: USGS The National Map; National Transportation Dataset; U.S. Census Bureau - TIGERLine; U.S. Forest Service, Data Refreshed October, 2021; World Hillshade; Esri, USGS; USGS National Map; USGS The National Map; National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGERLine; HERE Road Data. Created by: jclark2

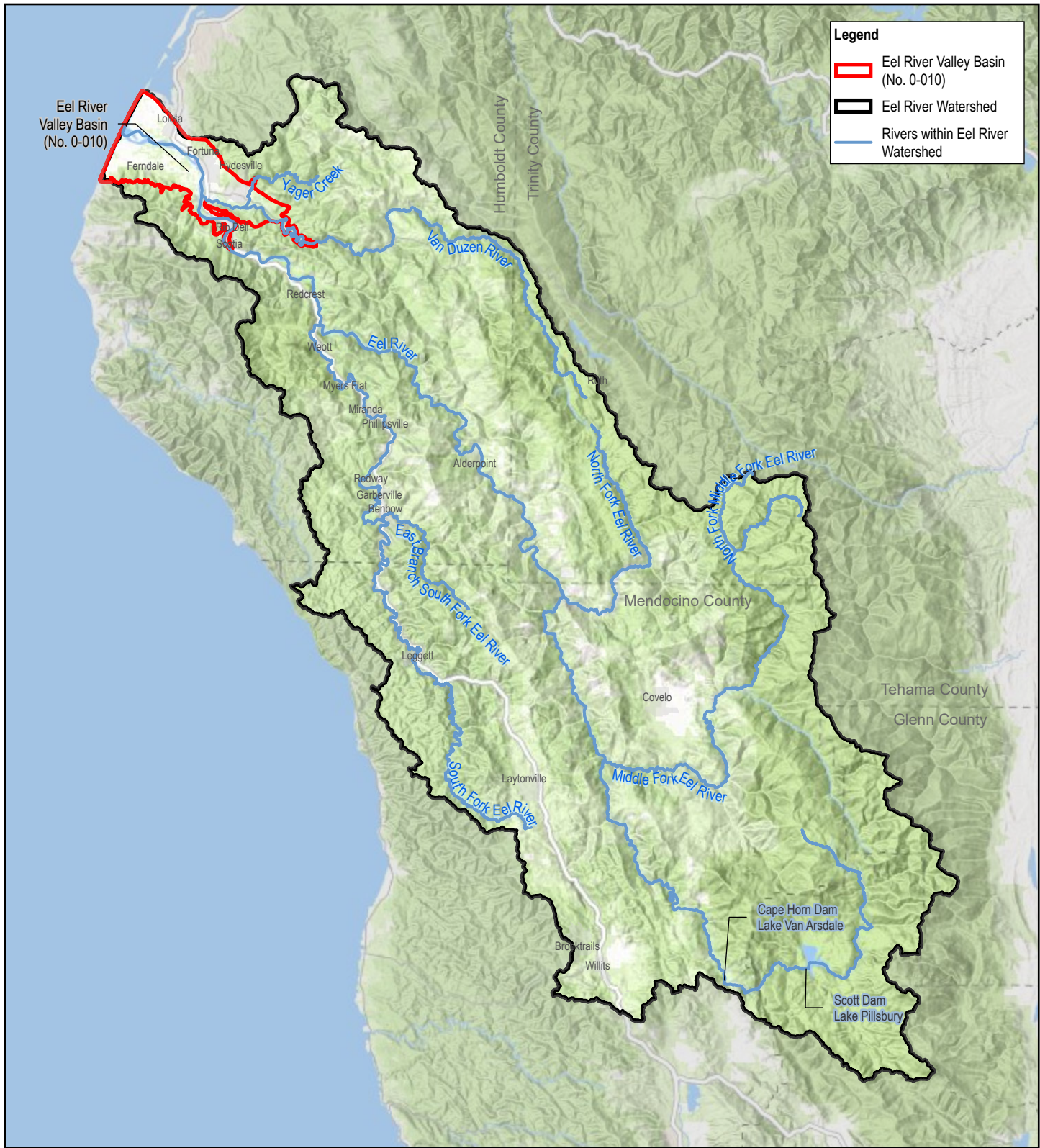


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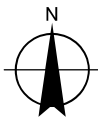
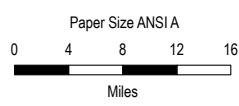
**Jurisdictions, Cities and Municipal Water Suppliers**

**FIGURE 2**



**Legend**

- Eel River Valley Basin (No. 0-010)
- Eel River Watershed
- Rivers within Eel River Watershed



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

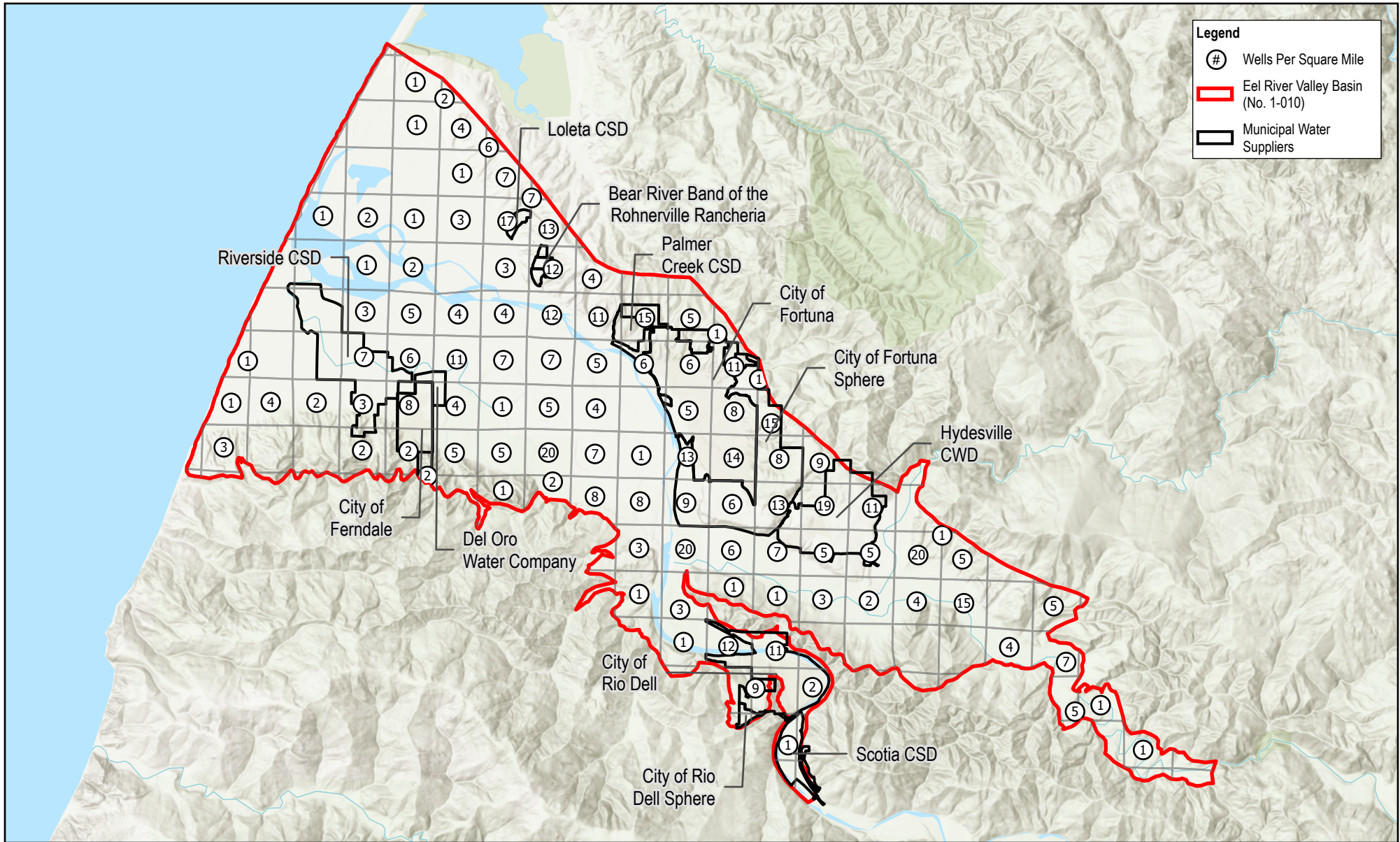
Humboldt County Groundwater Sustainability Agency  
 Eel River Valley Groundwater Sustainability Plan

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 Date Jan 2022

**Watershed Map**

**FIGURE 3**

N:\US\Eureka\Projects\56111217388\GIS\Maps\Deliverables\11217388\_ERVP\_GSP\11217388\_ERVP\_GSP.aprx  
 Print date: 20 Jan 2022 - 10:03  
 Data source: DWR basin, 2013; USDA-NRCS watershed; Populated places, 2021; NHD; World Topo Base. This work is licensed under the Esri Master License Agreement. View Summary | View Terms of Use. Alignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority. Important Note: This item is in beta and is not intended for use in production applications.; Terrain: Hillshade: Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS, OS, NMA, Geodatasys, GSA, GSI and the GIS User Community. Created by: jclark2



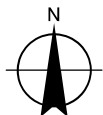
**Legend**

- Ⓝ Wells Per Square Mile
- ▭ Eel River Valley Basin (No. 1-010)
- ▭ Municipal Water Suppliers



Paper Size ANSIA  
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 Miles

Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



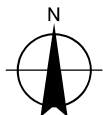
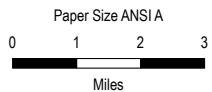
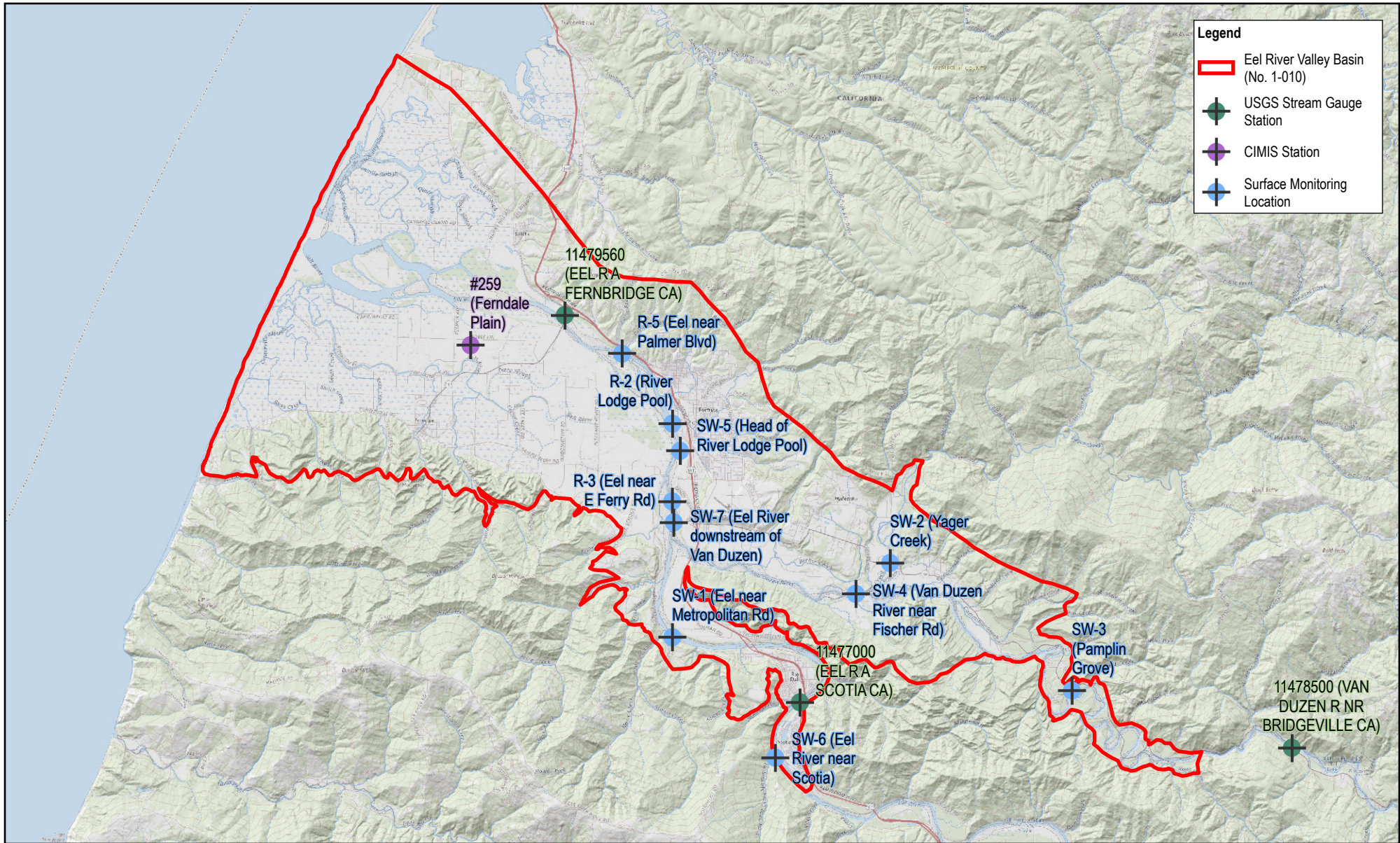
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 Sustainability Plan

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Well Densities

FIGURE 4





Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

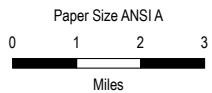
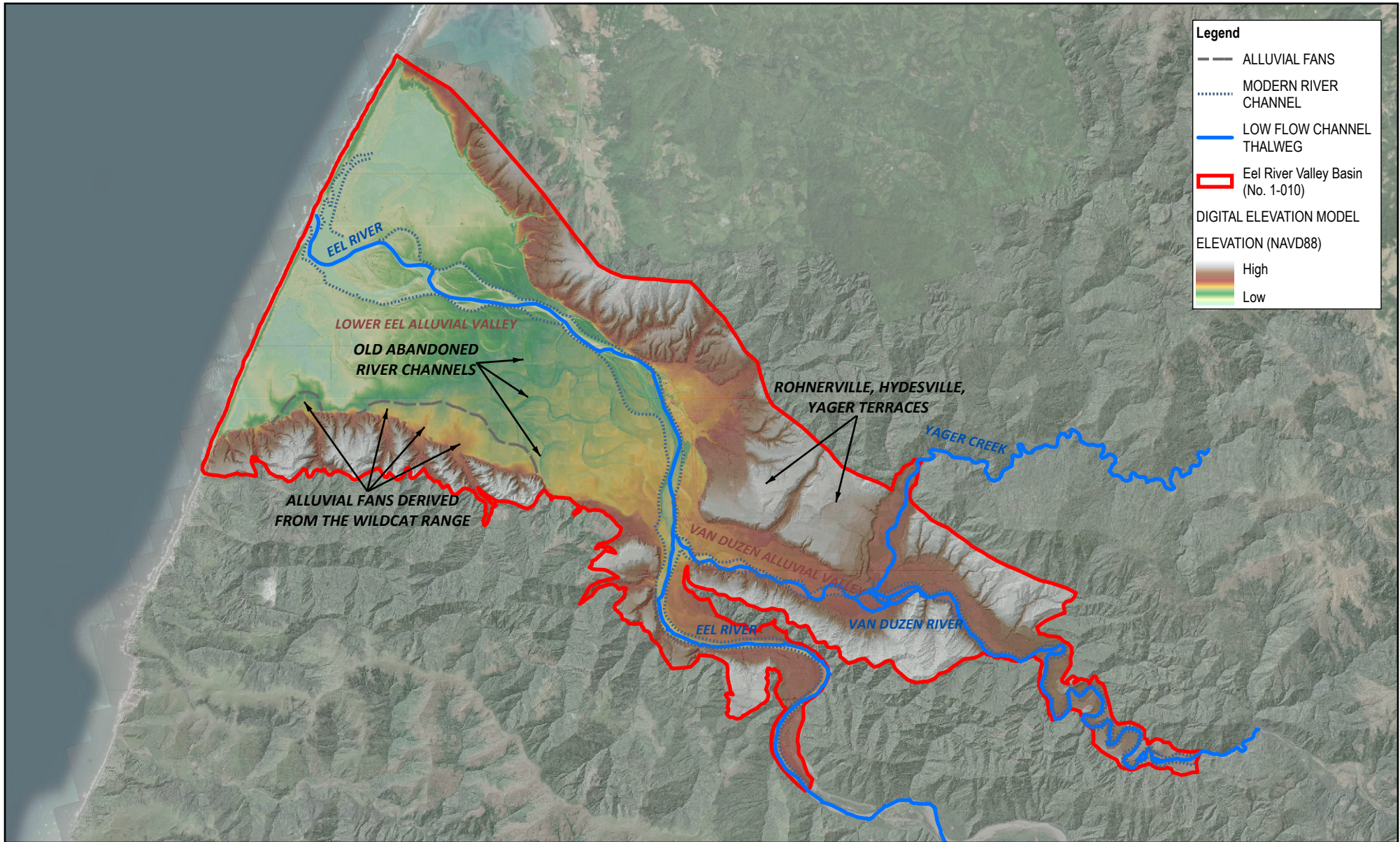


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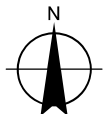
Project No. 11217388  
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**Surface Water and Weather Monitoring Stations**

**FIGURE 6**



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

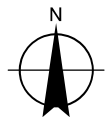
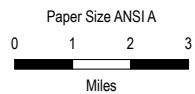
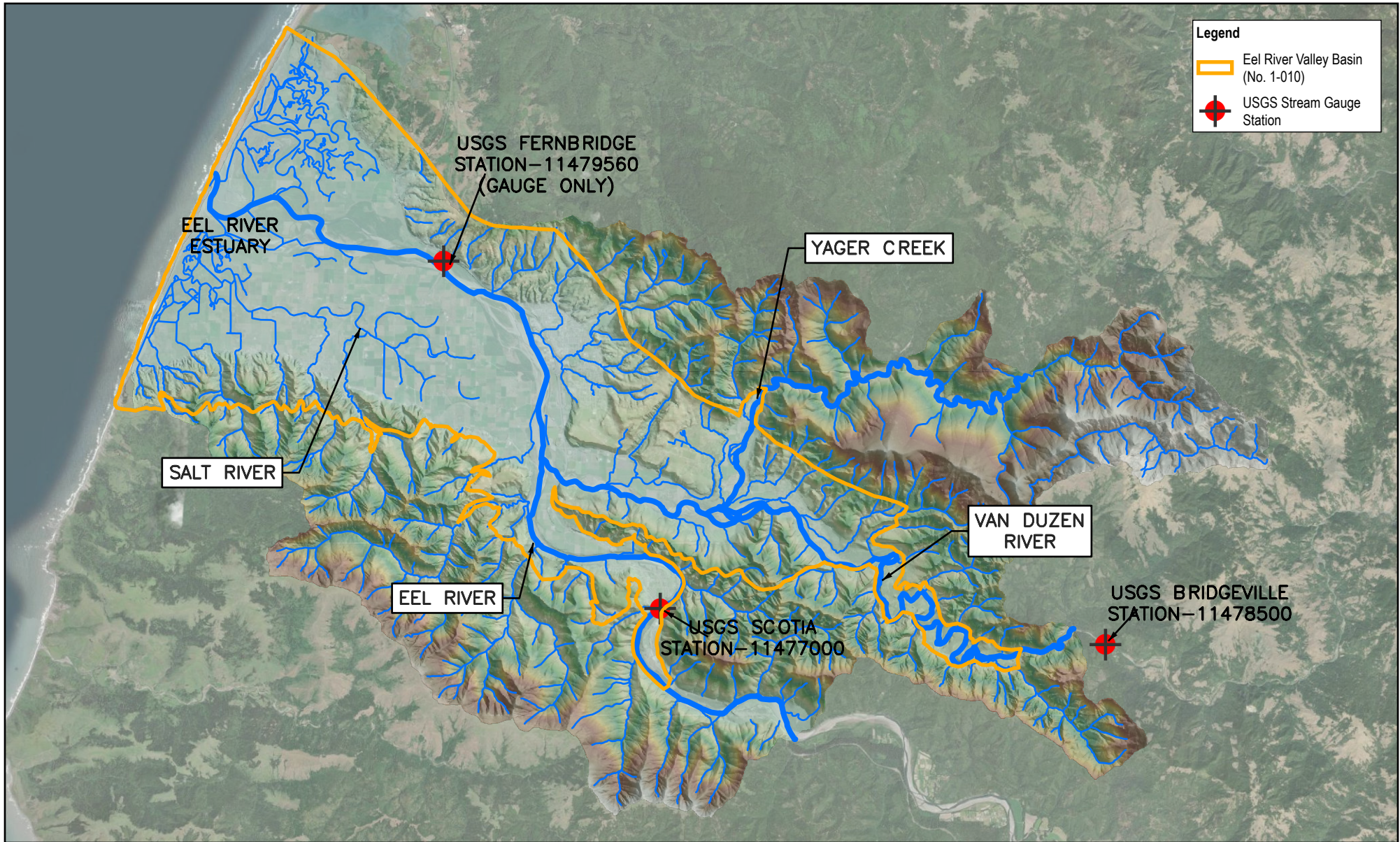


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**Geomorphology**

**FIGURE 7**

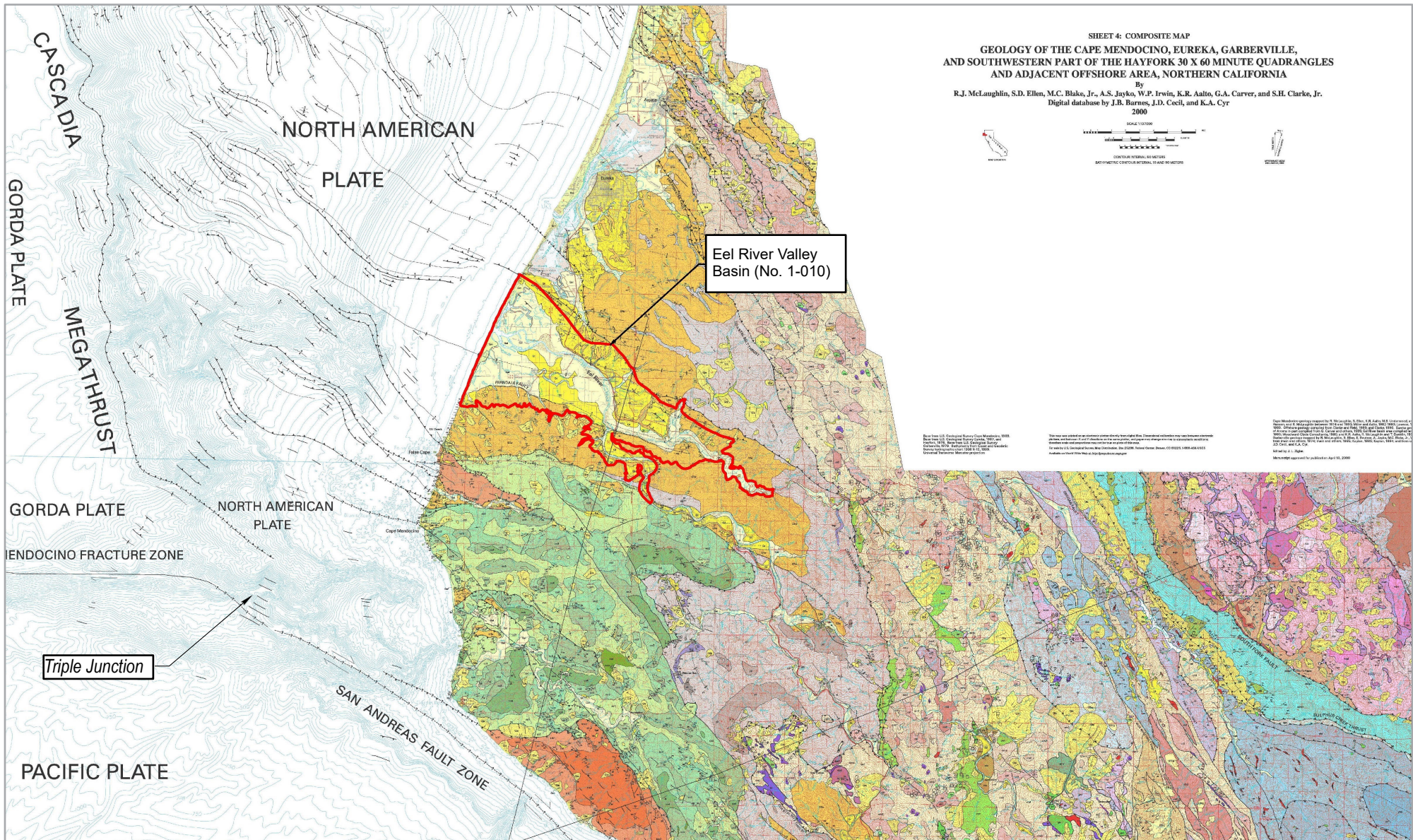


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Surface Waters

FIGURE 8

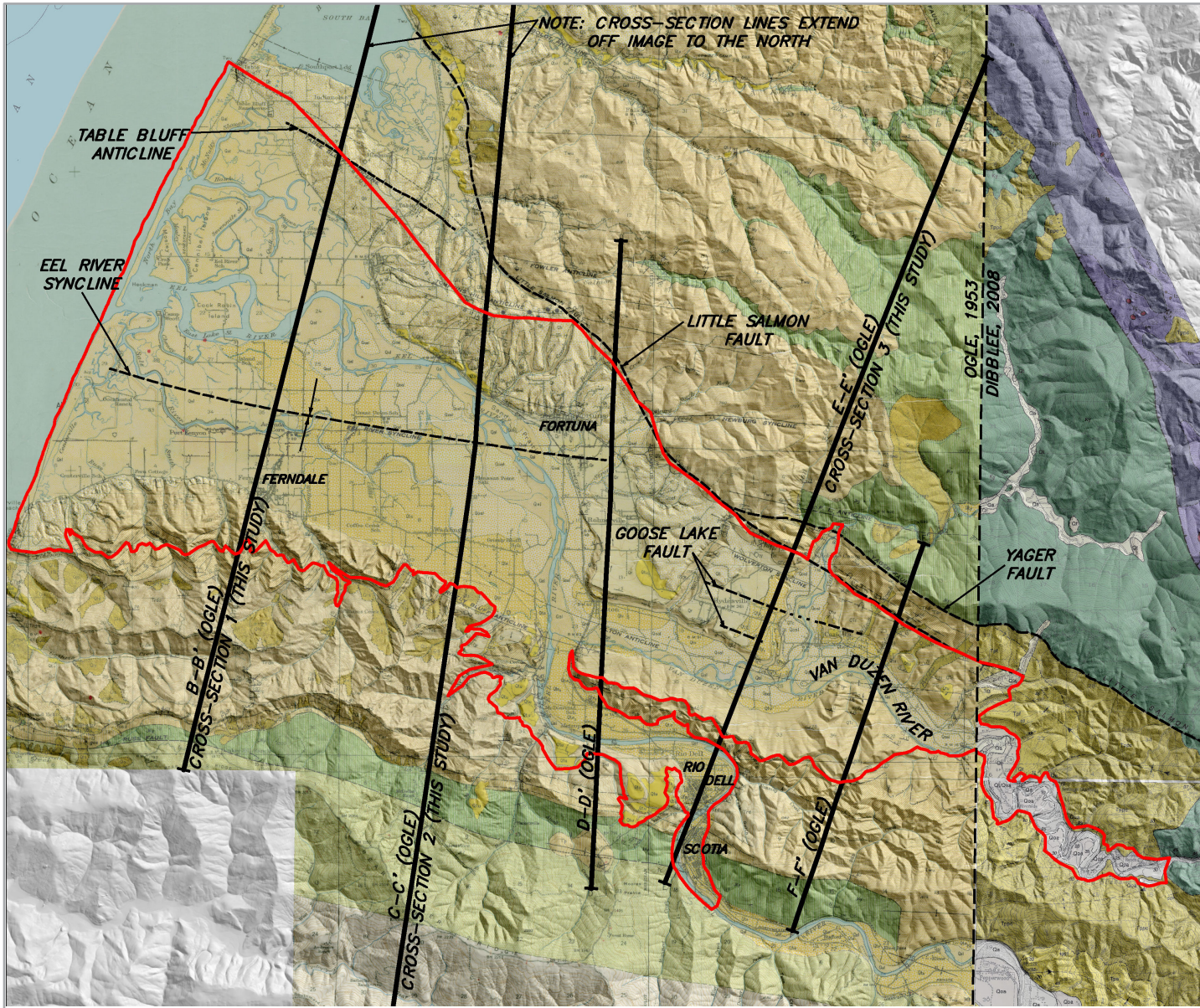


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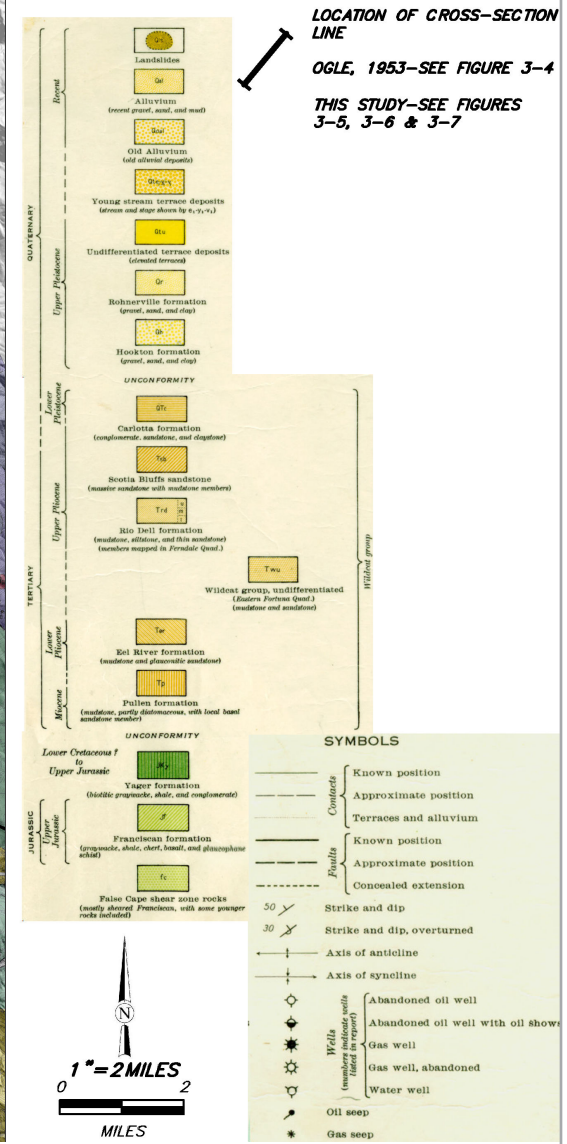
Project No. 11217388  
 Revision No. -  
 Date Jan 2022

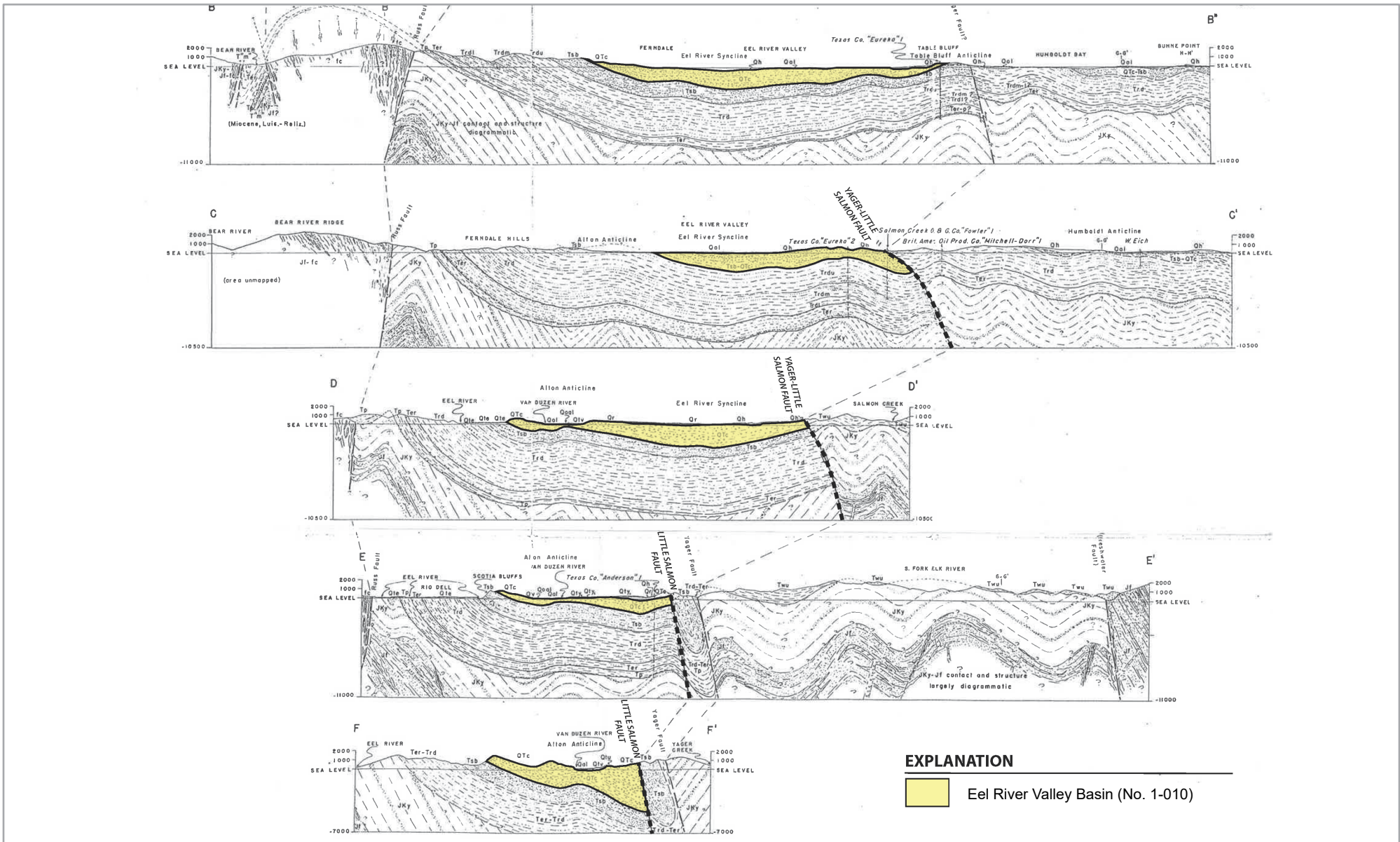
Geologic Map (McLaughlin 2002)

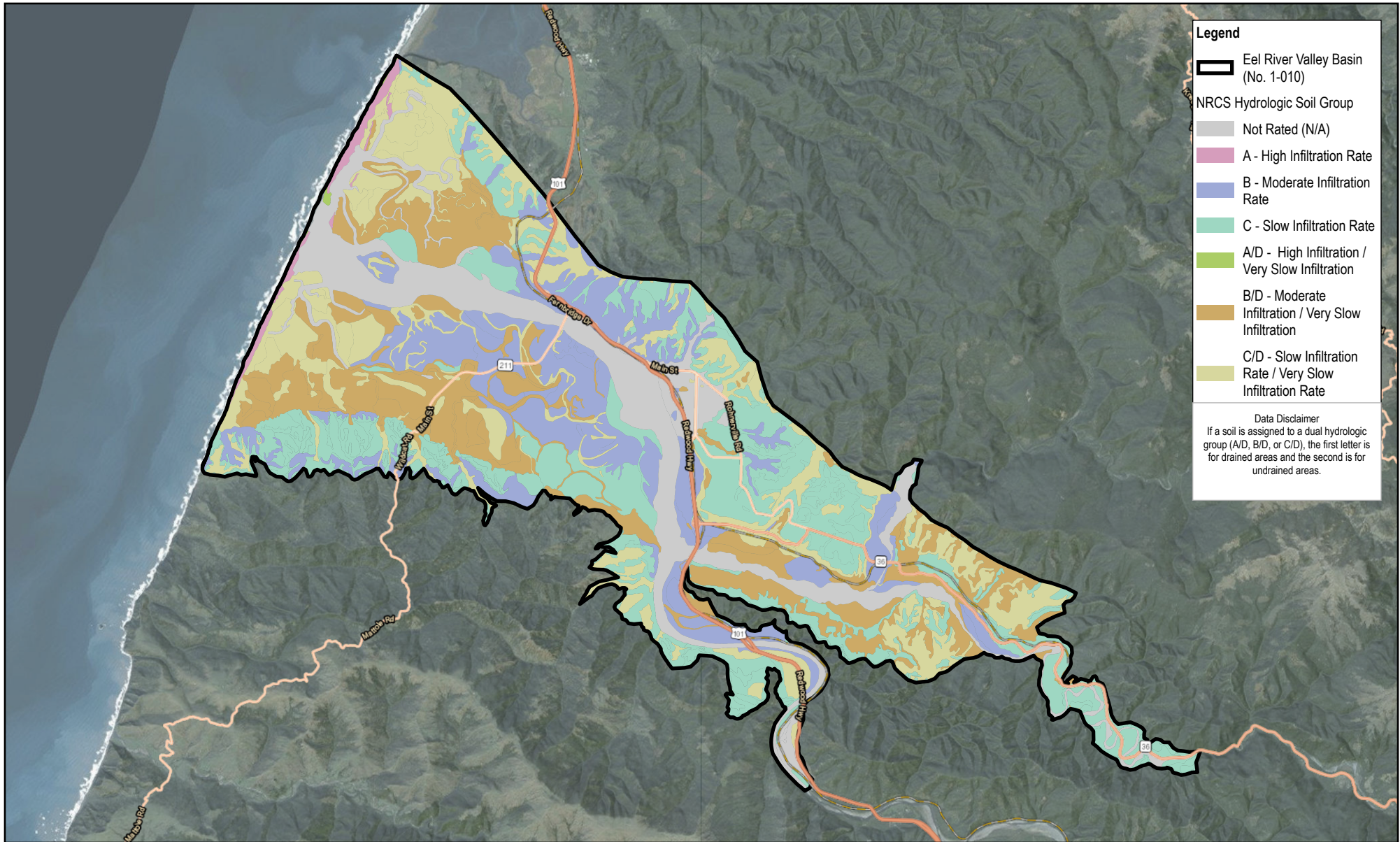
FIGURE 9



### EXPLANATION







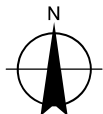
- Legend**
- Eel River Valley Basin (No. 1-010)
  - NRCS Hydrologic Soil Group**
  - Not Rated (N/A)
  - A - High Infiltration Rate
  - B - Moderate Infiltration Rate
  - C - Slow Infiltration Rate
  - A/D - High Infiltration / Very Slow Infiltration
  - B/D - Moderate Infiltration / Very Slow Infiltration
  - C/D - Slow Infiltration Rate / Very Slow Infiltration Rate

**Data Disclaimer**  
 If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.



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Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

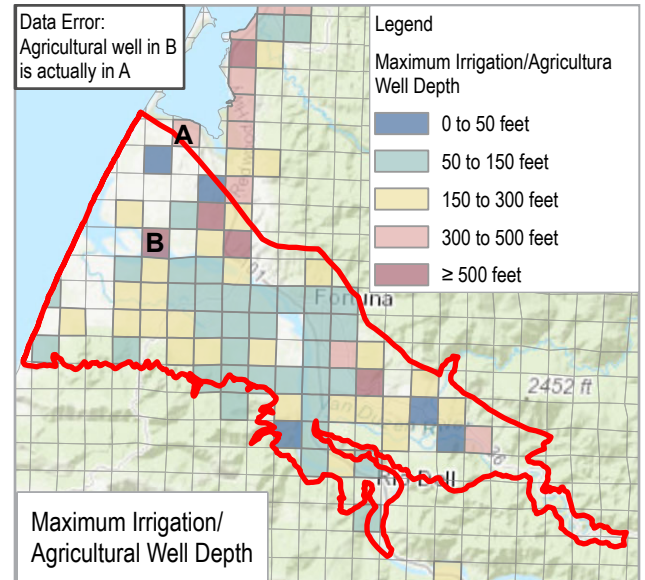
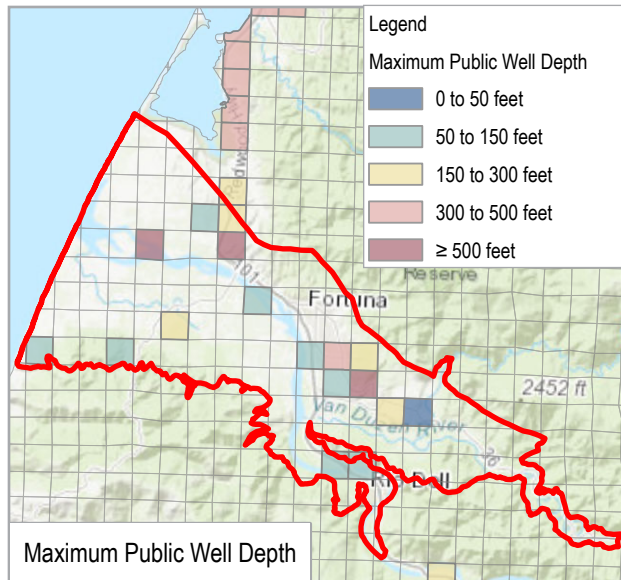
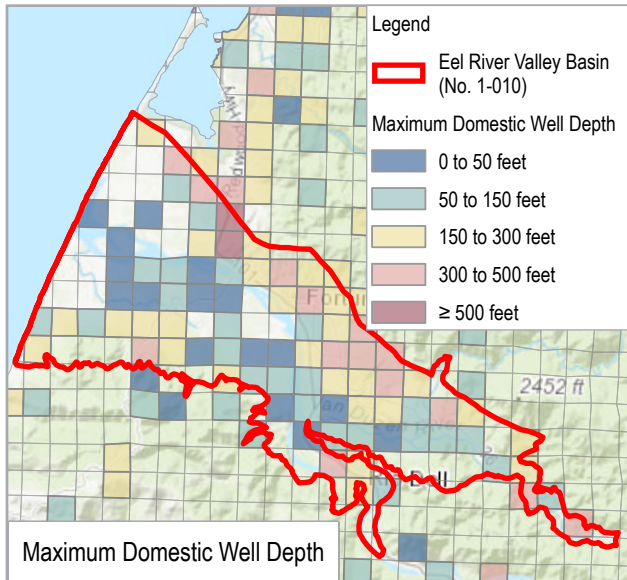
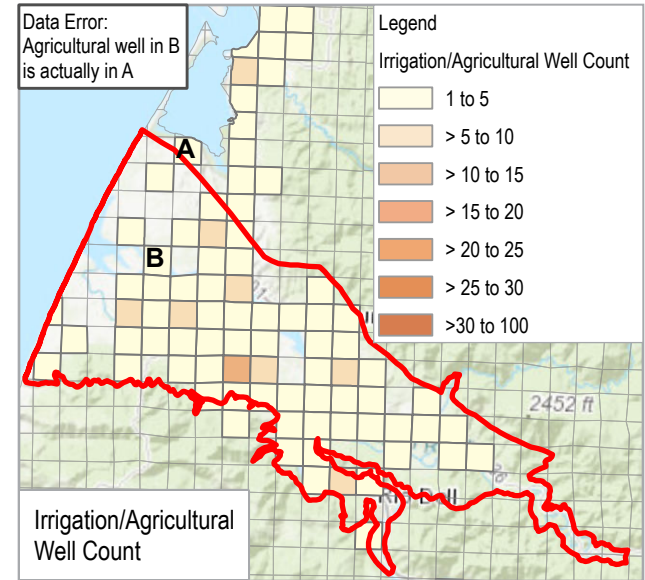
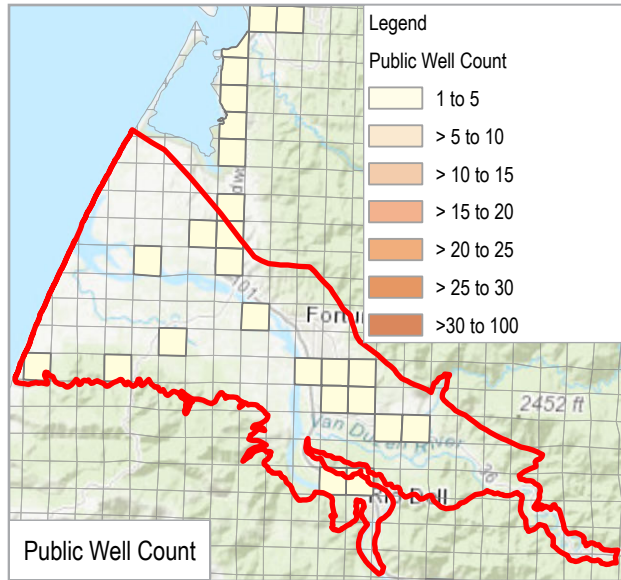
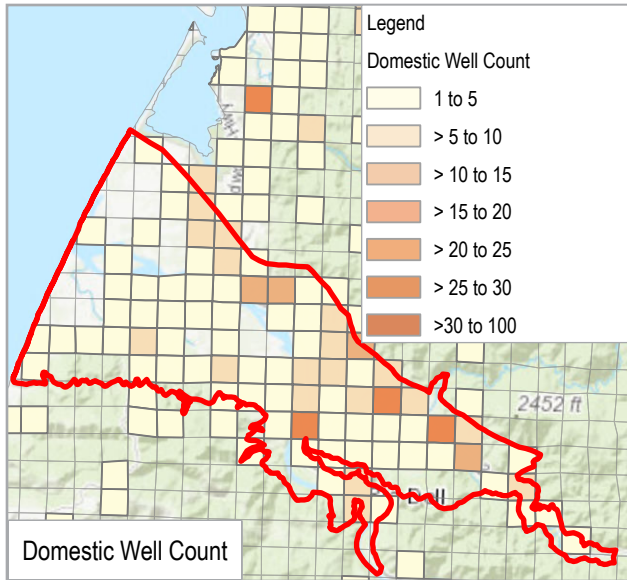


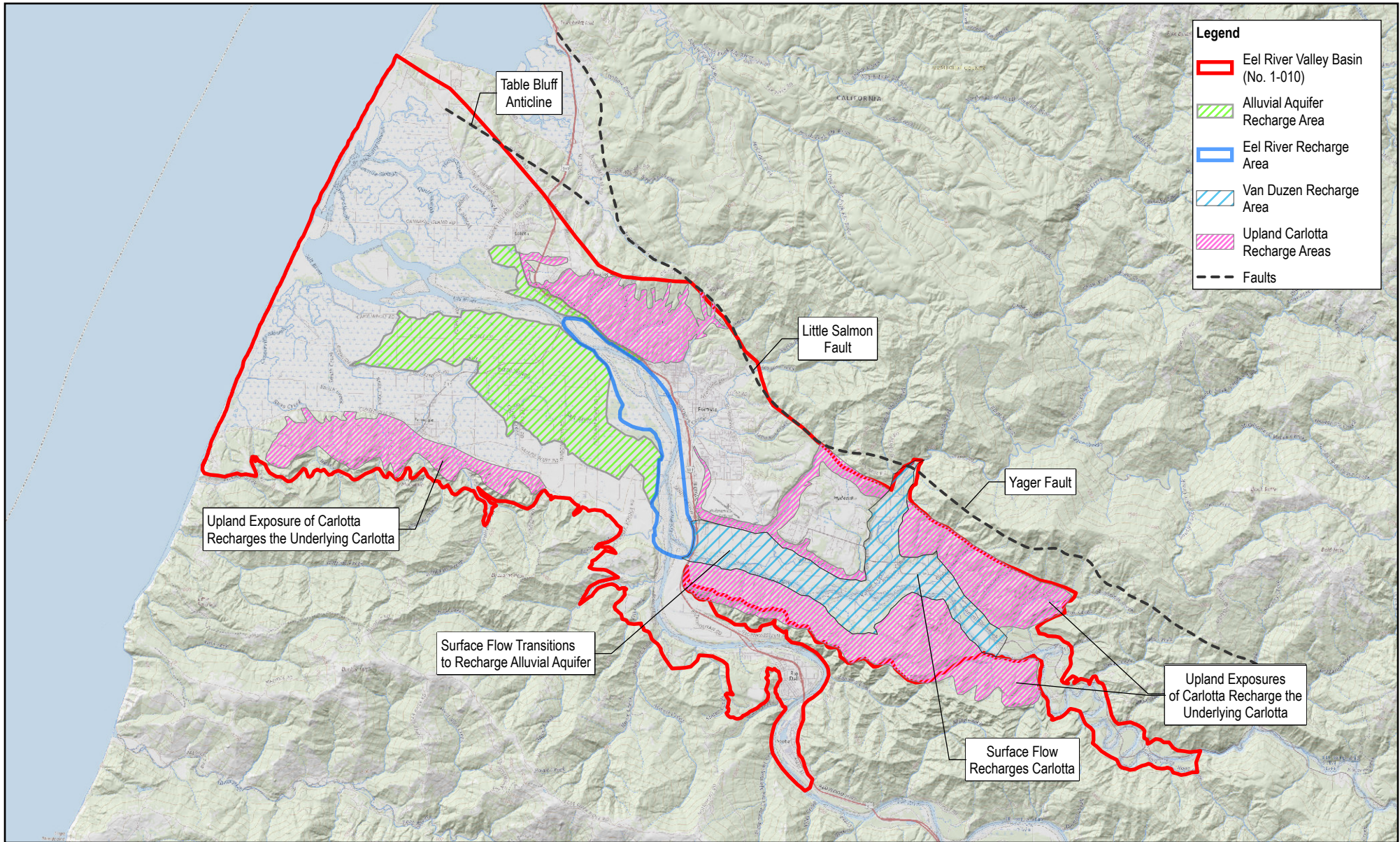
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**NRCS Mapping by  
 Hydrologic Soil Group**

**FIGURE 12**



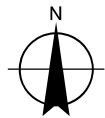


**Legend**

- Eel River Valley Basin (No. 1-010)
- Alluvial Aquifer Recharge Area
- Eel River Recharge Area
- Van Duzen Recharge Area
- Upland Carlotta Recharge Areas
- Faults



Paper Size ANSIA  
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 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

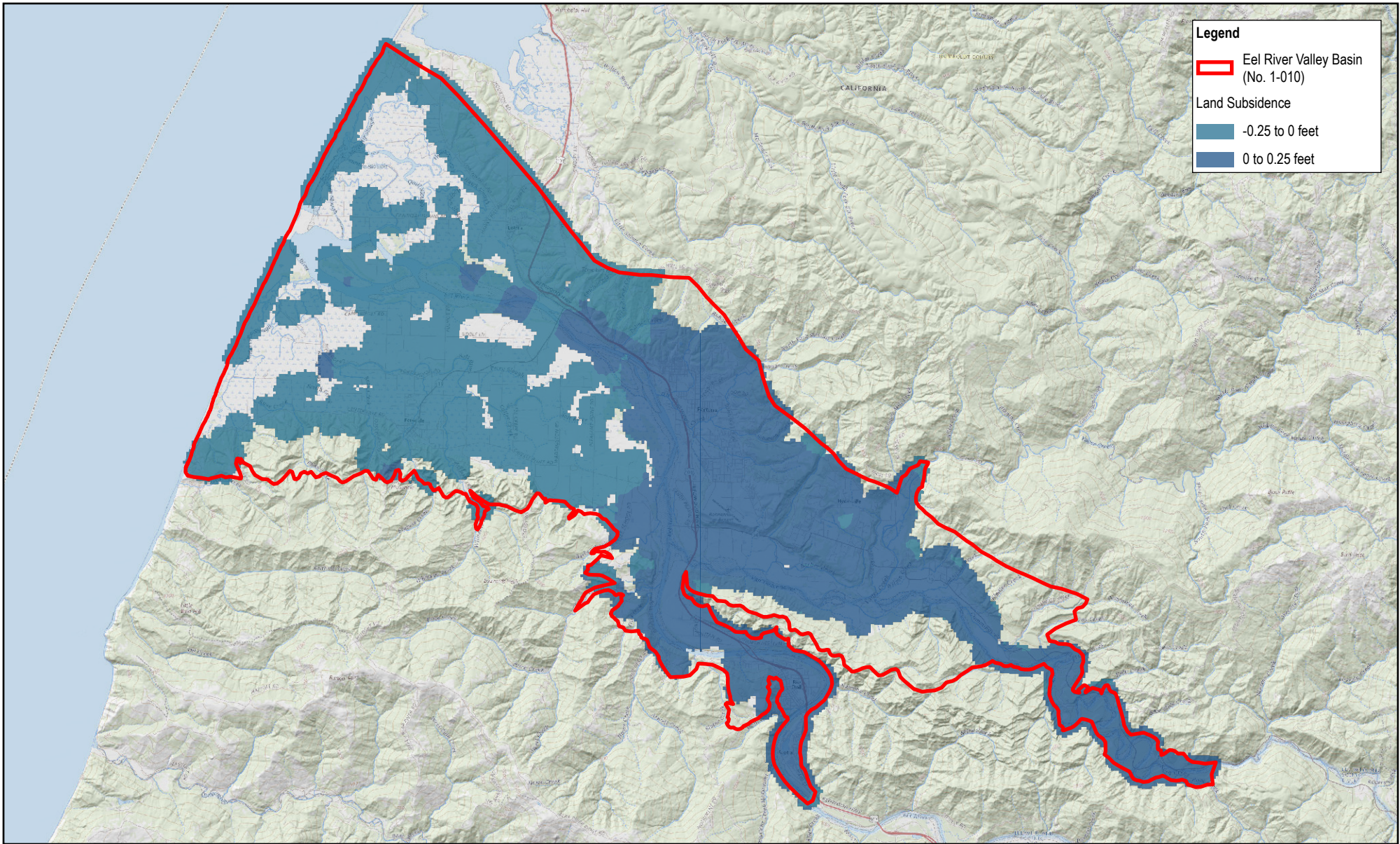


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**Important Recharge Areas**

**FIGURE 14**



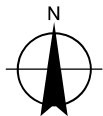
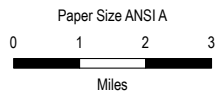
**Legend**

Eel River Valley Basin (No. 1-010)

**Land Subsidence**

-0.25 to 0 feet

0 to 0.25 feet



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

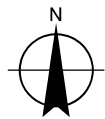
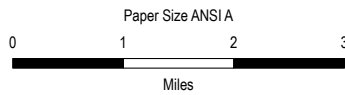
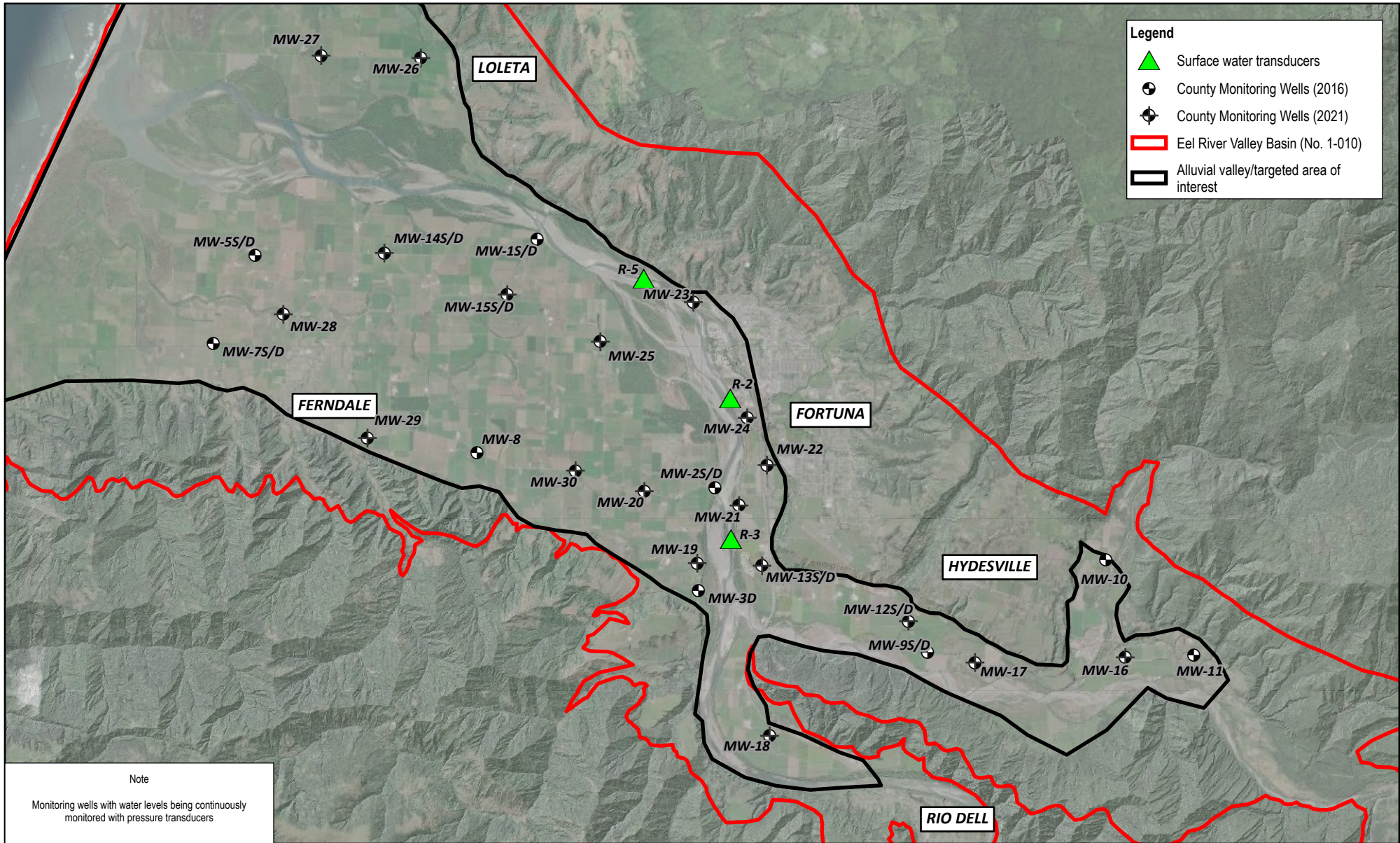


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**Land Subsidence**

**FIGURE 15**



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

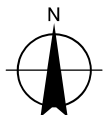
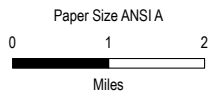
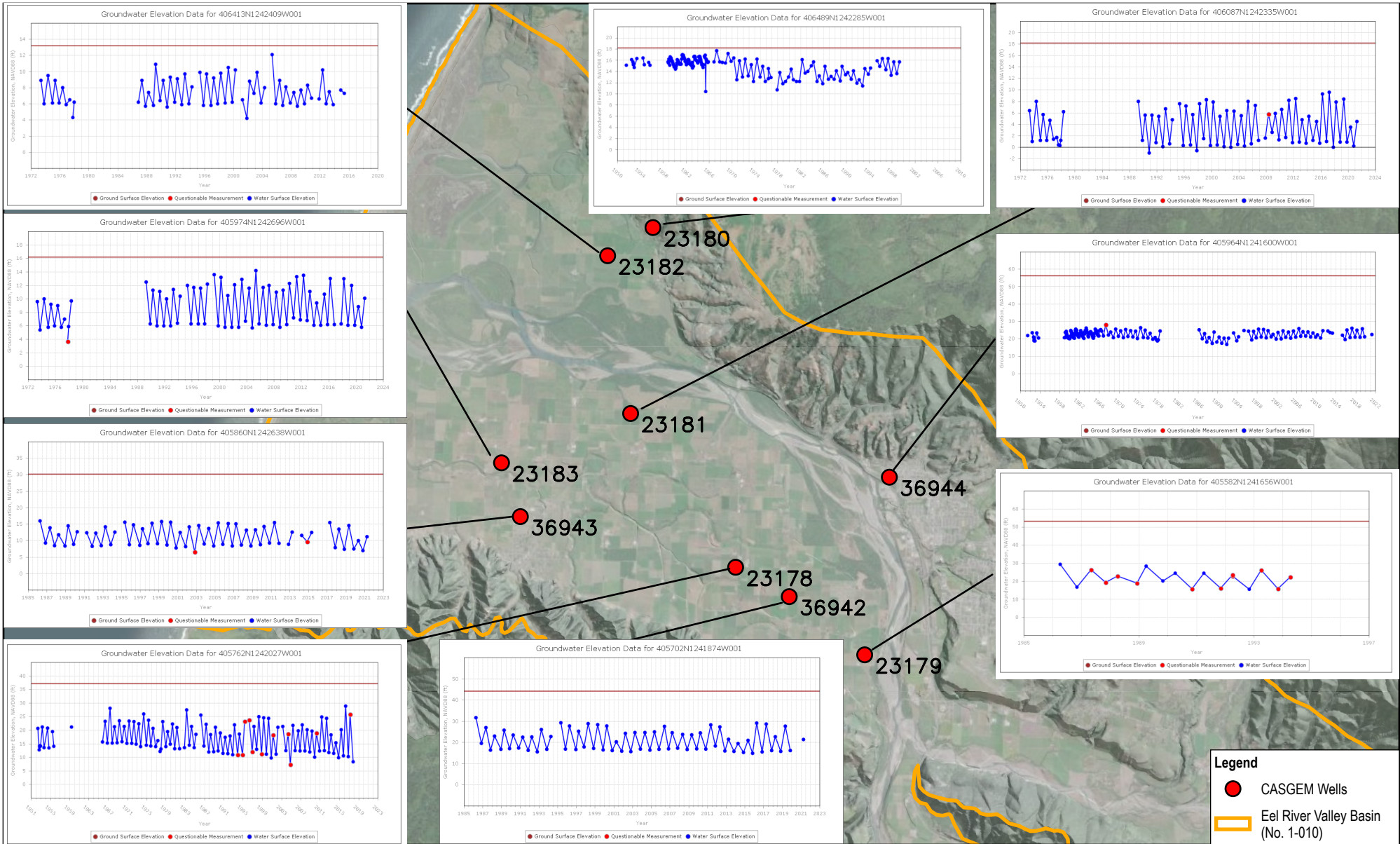


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County Monitoring Wells

FIGURE 16

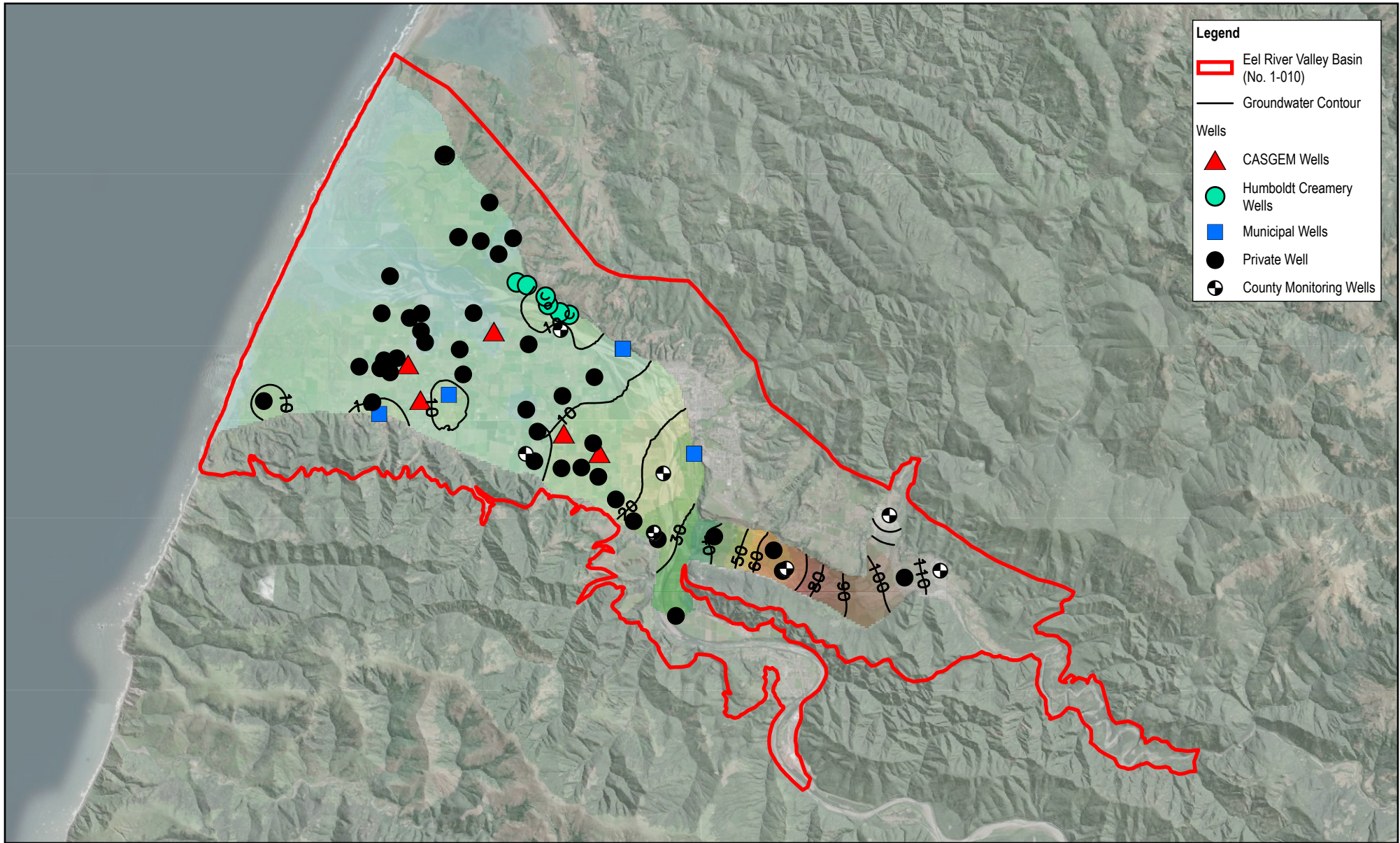


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CASGEM Hydrographs

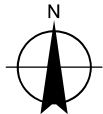
FIGURE 17



- Legend**
- Eel River Valley Basin (No. 1-010)
  - Groundwater Contour
  - Wells**
  - ▲ CASGEM Wells
  - Humboldt Creamery Wells
  - Municipal Wells
  - Private Well
  - County Monitoring Wells



Paper Size ANSIA  
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 Miles  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

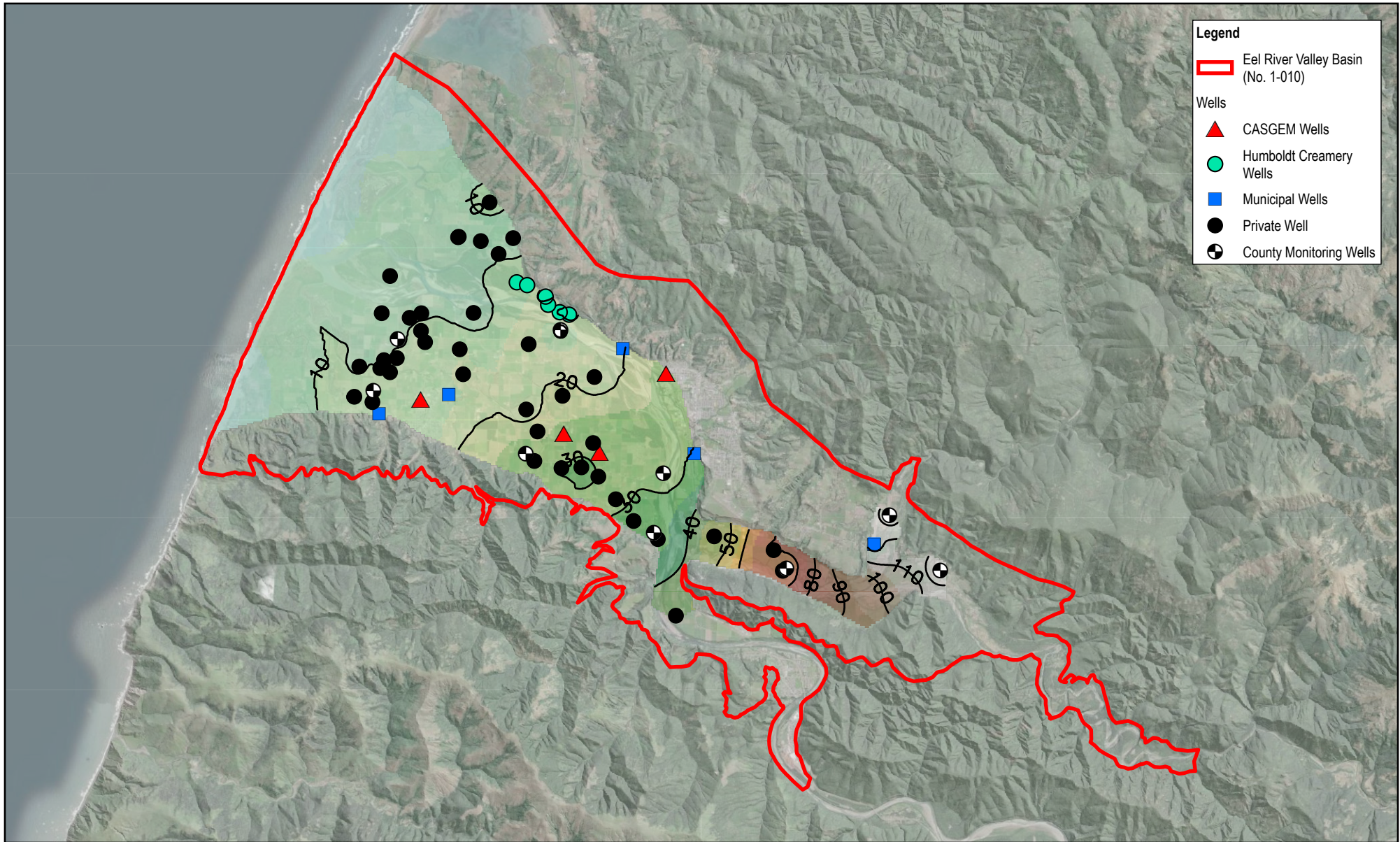


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Fall 2016 Groundwater Contour Map

FIGURE 18



**Legend**

Eel River Valley Basin (No. 1-010)

**Wells**

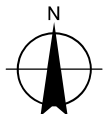
- ▲ CASGEM Wells
- Humboldt Creamery Wells
- Municipal Wells
- Private Well
- ⊕ County Monitoring Wells



Paper Size ANSIA

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Map Projection: Lambert Conformal Conic  
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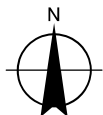
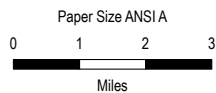
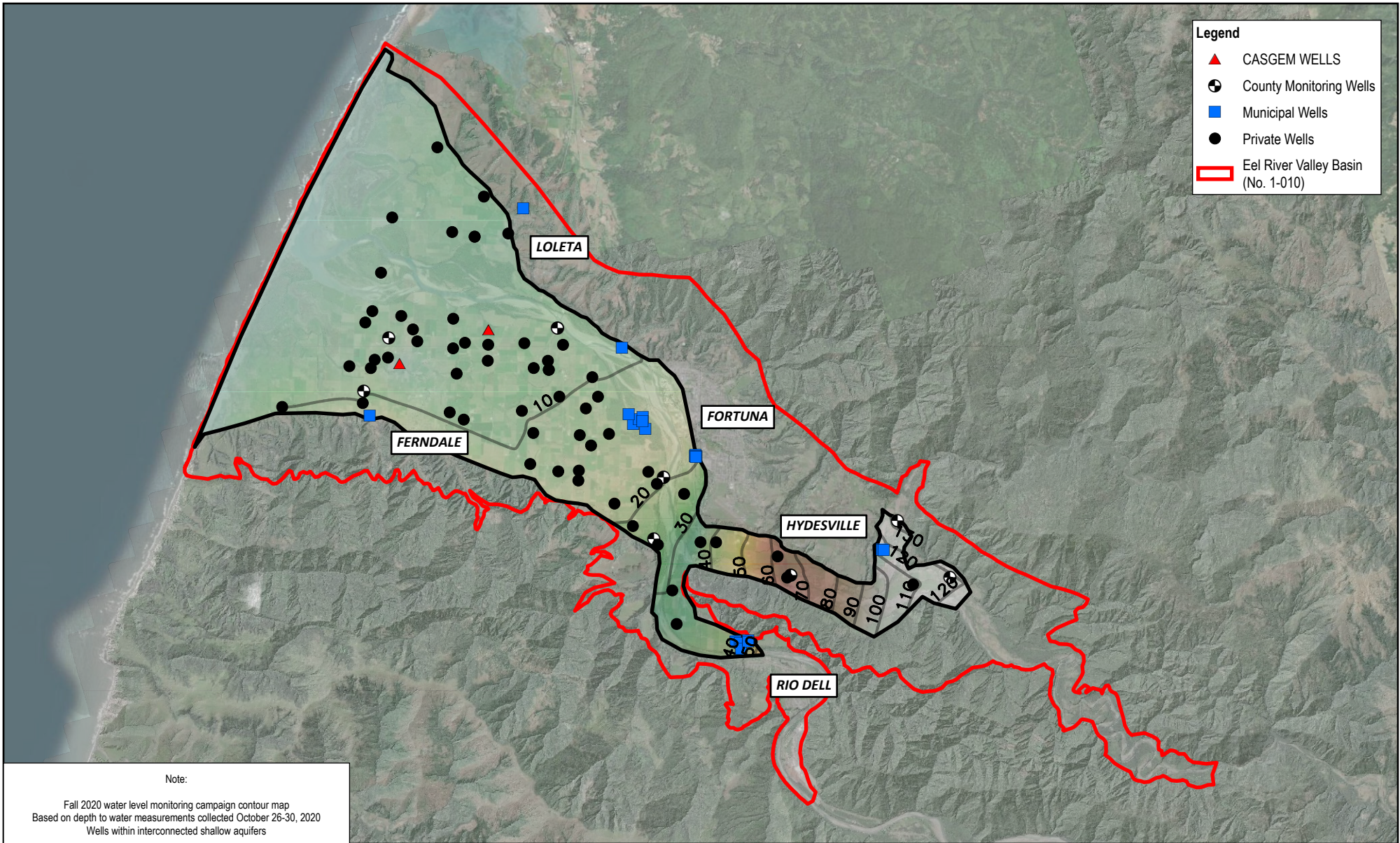


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Spring 2017 Groundwater Contour Map

**FIGURE 19**



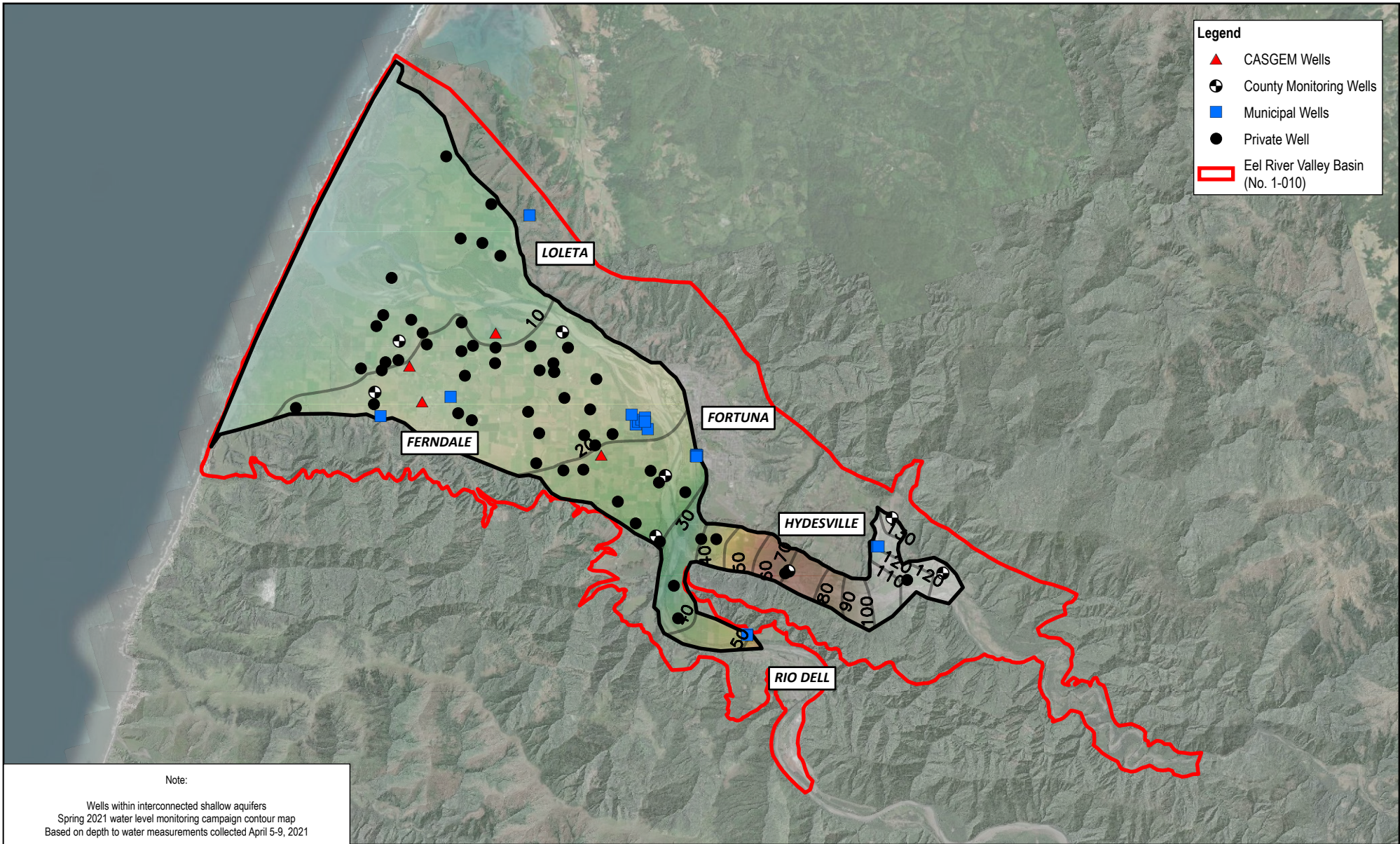
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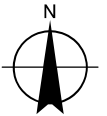
Map Projection: Lambert Conformal Conic  
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 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

Fall 2020 Groundwater Contour Map

FIGURE 20



Paper Size ANSIA  
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 Horizontal Datum: North American 1983  
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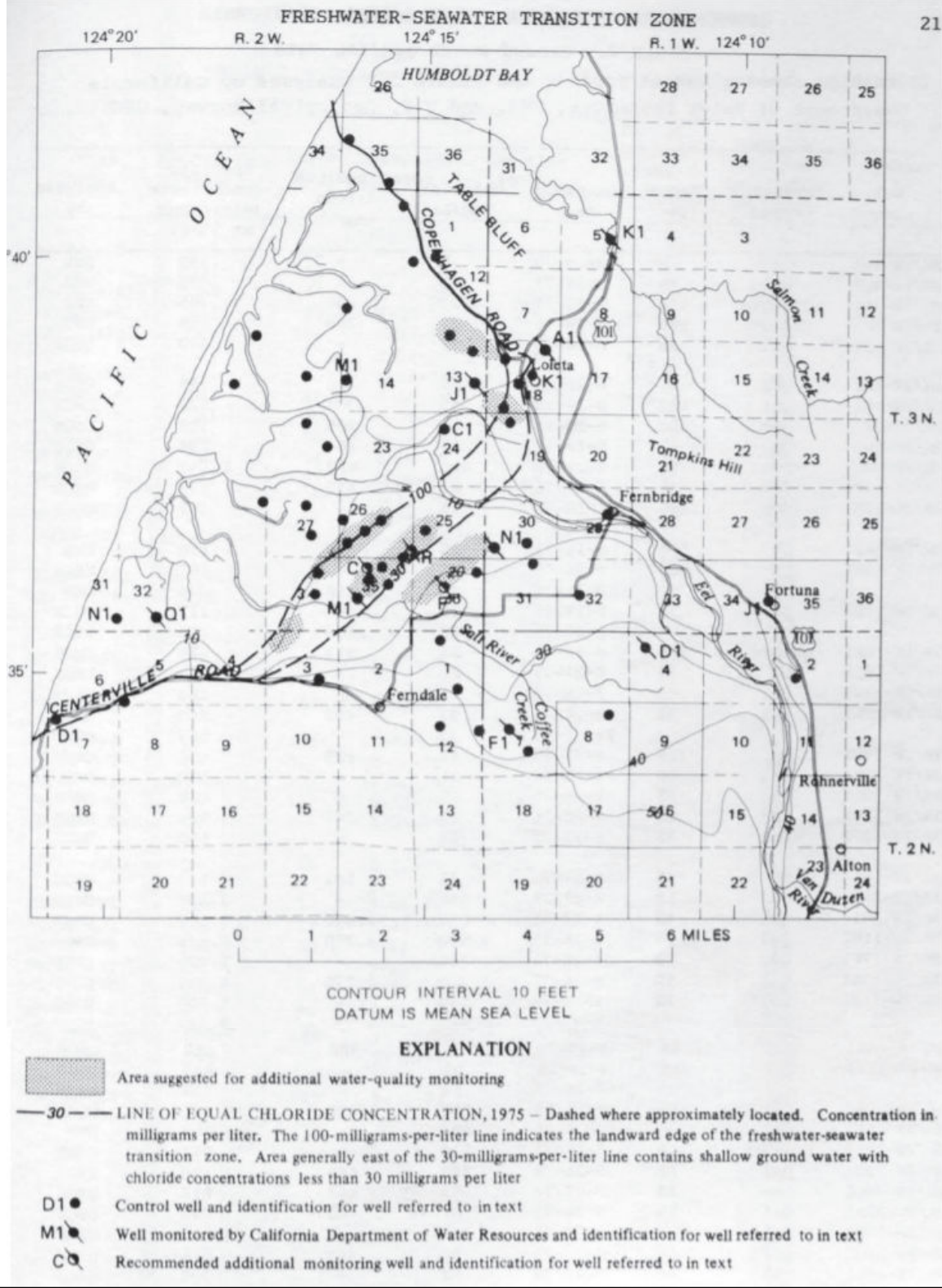


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Spring 2021 Groundwater Contour Map

FIGURE 21

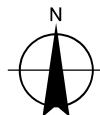
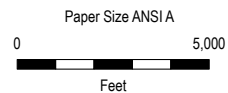
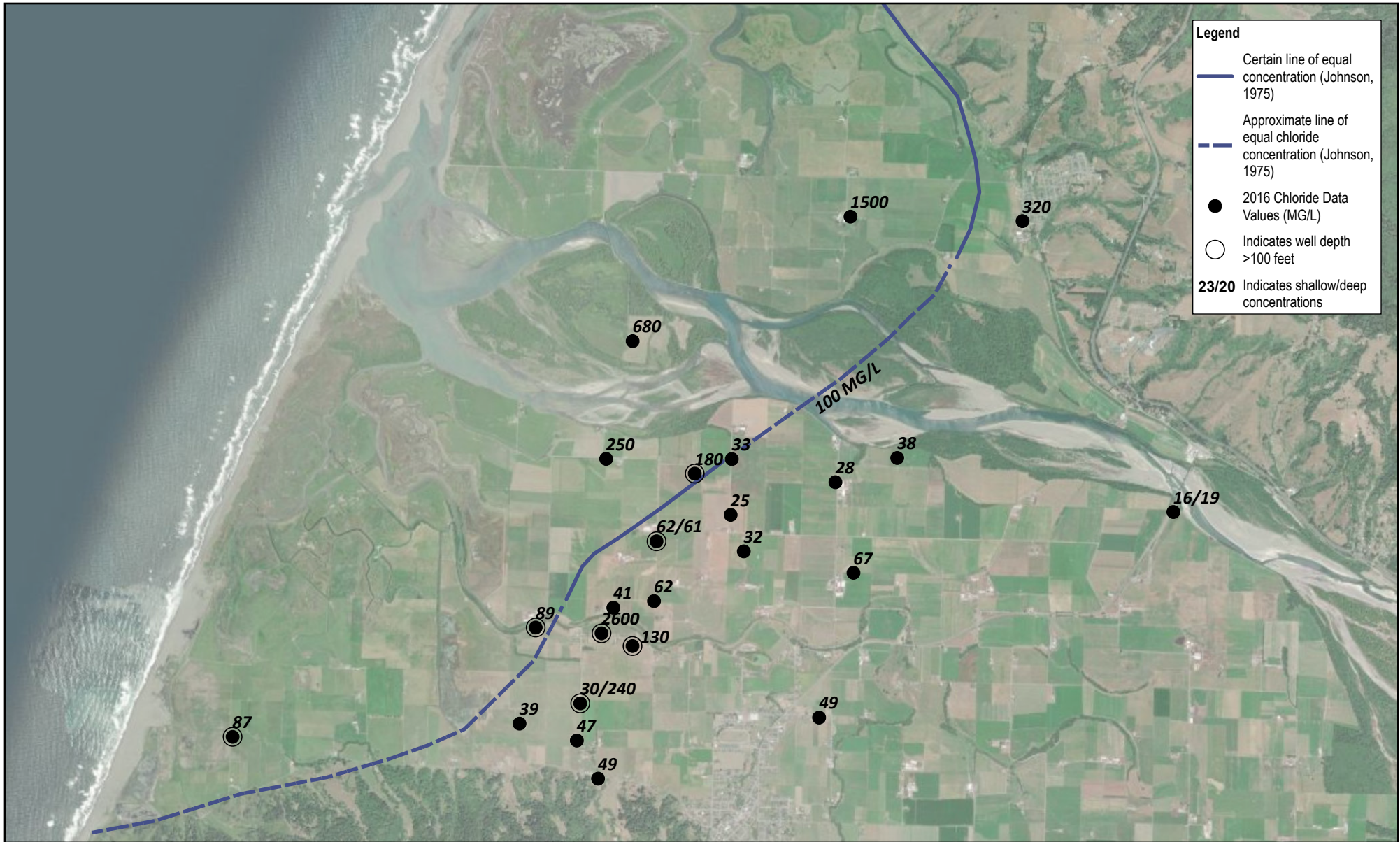


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1975 Chloride Map

FIGURE 22



Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

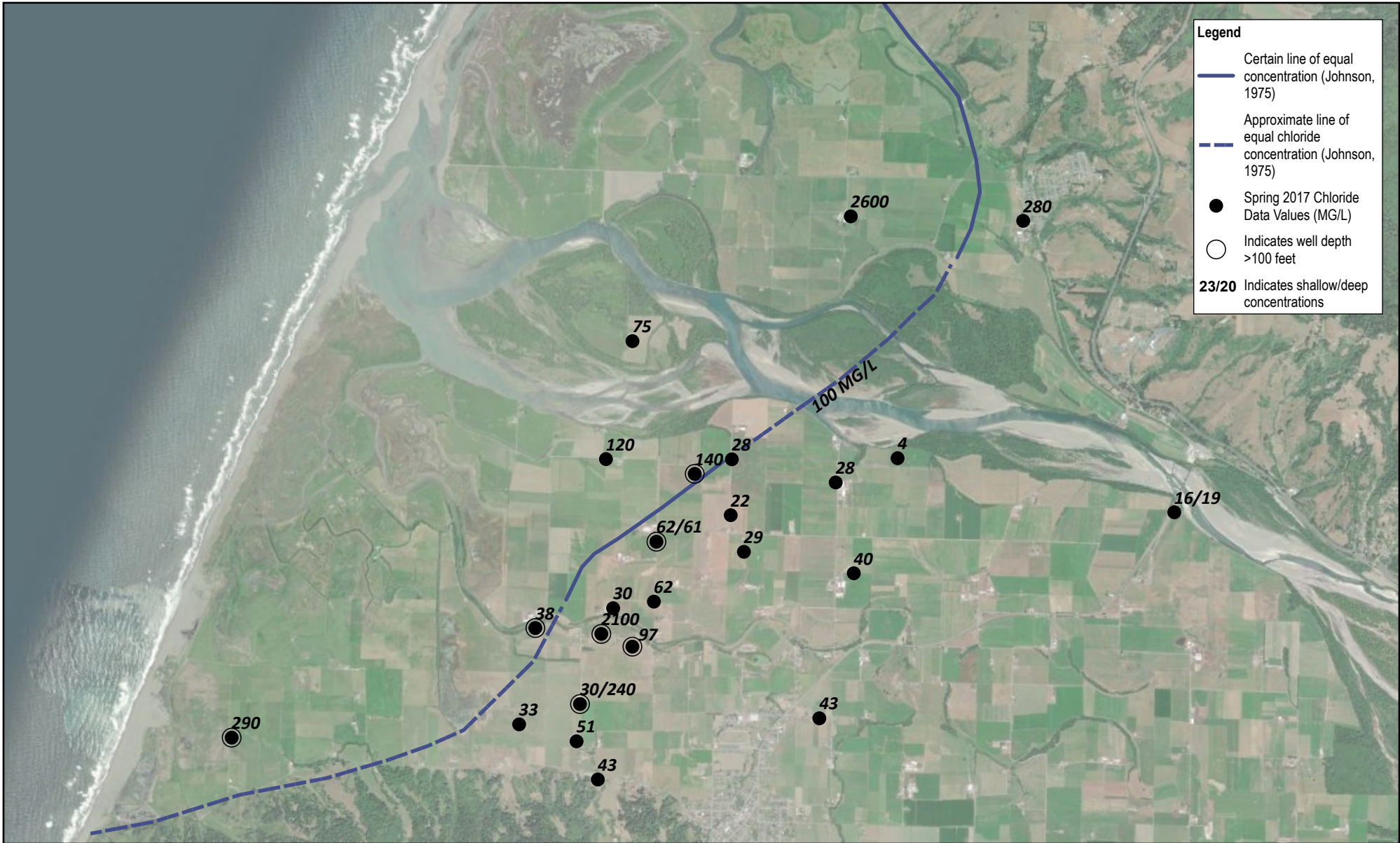


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Fall 2016 Chloride Map

FIGURE 23

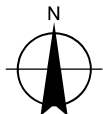


**Legend**

- Certain line of equal concentration (Johnson, 1975)
- Approximate line of equal chloride concentration (Johnson, 1975)
- Spring 2017 Chloride Data Values (MG/L)
- Indicates well depth >100 feet
- 23/20** Indicates shallow/deep concentrations



Paper Size ANSIA  
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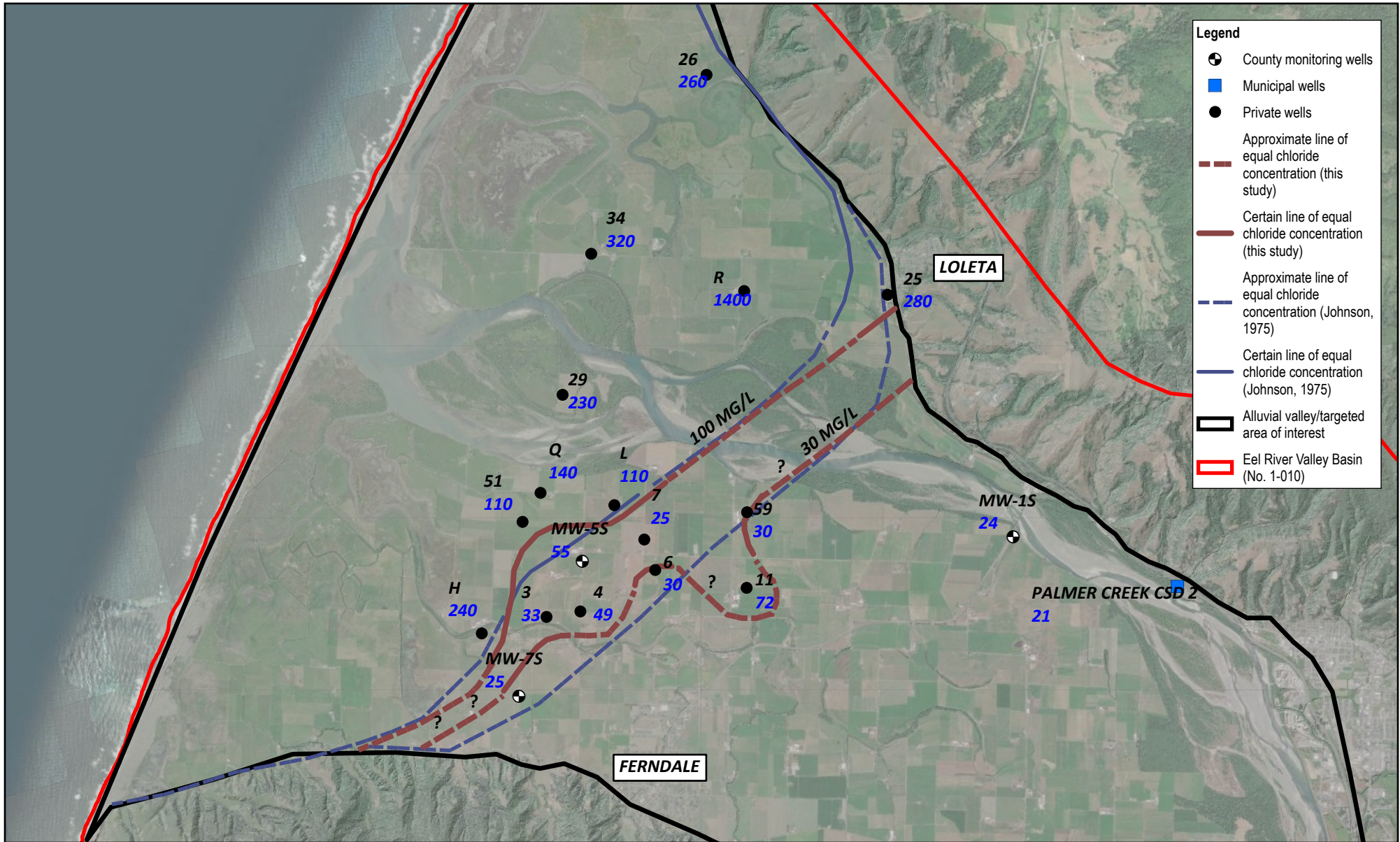


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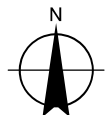
Project No. 11217388  
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 Date Jan 2022

Spring 2017 Chloride Map

FIGURE 24



Paper Size ANSIA  
 0 2,000 4,000 6,000  
 Feet  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



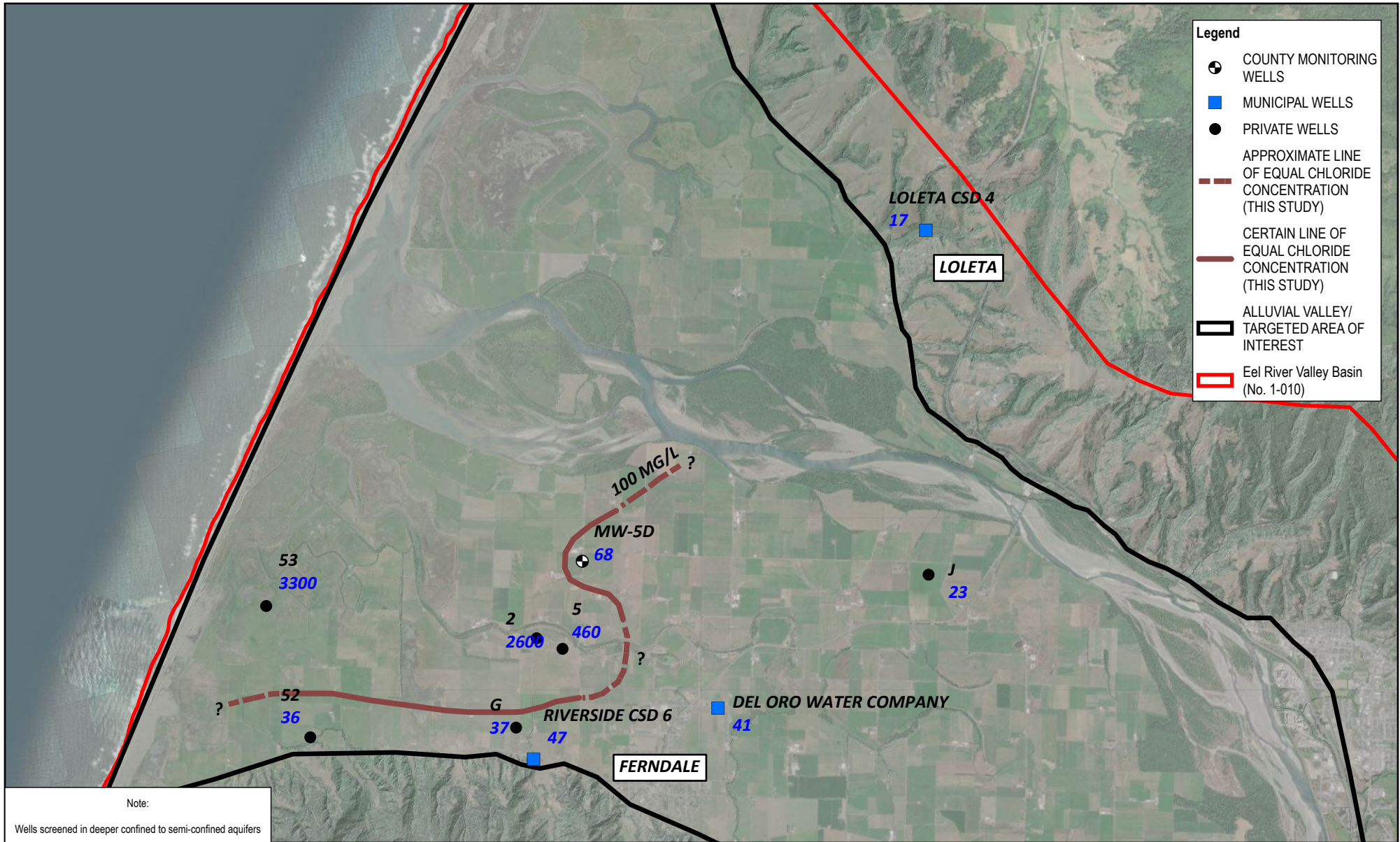
Humboldt County Groundwater Sustainability Agency  
 Eel River Valley Groundwater  
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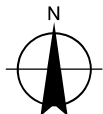
Fall 2020 Chloride Map

FIGURE 25





Paper Size ANSIA  
 0 2,000 4,000 6,000  
 Feet  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

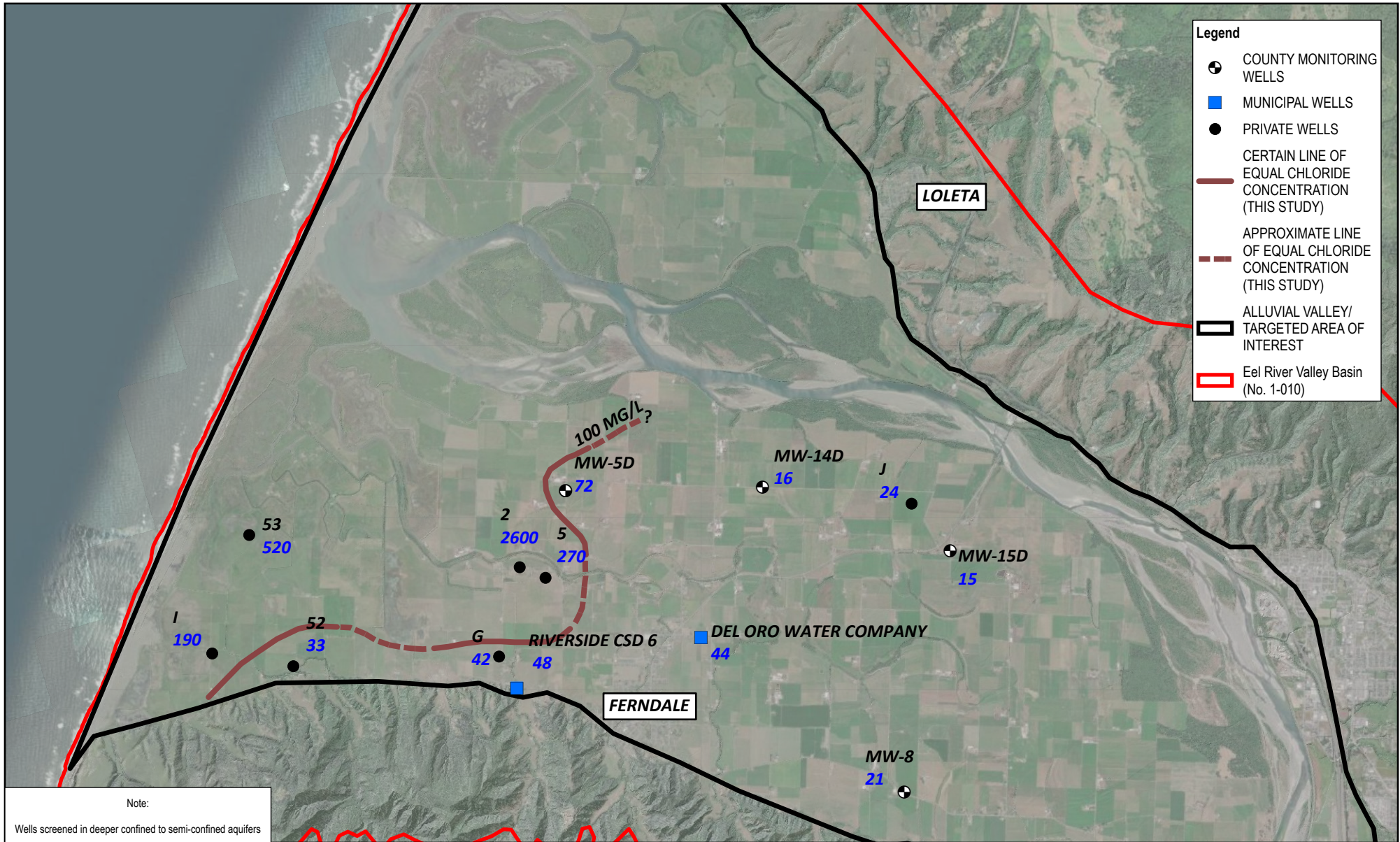


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Fall 2020 Deep Chloride Map

FIGURE 27



Paper Size ANSIA  
 0 2,000 4,000 6,000  
 Feet  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

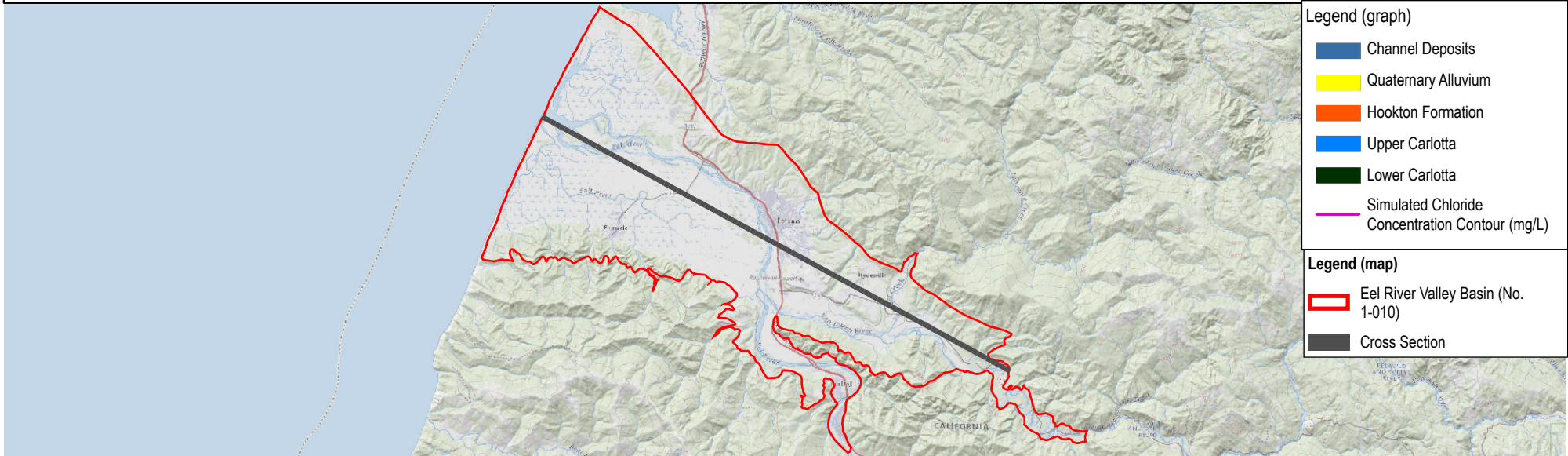
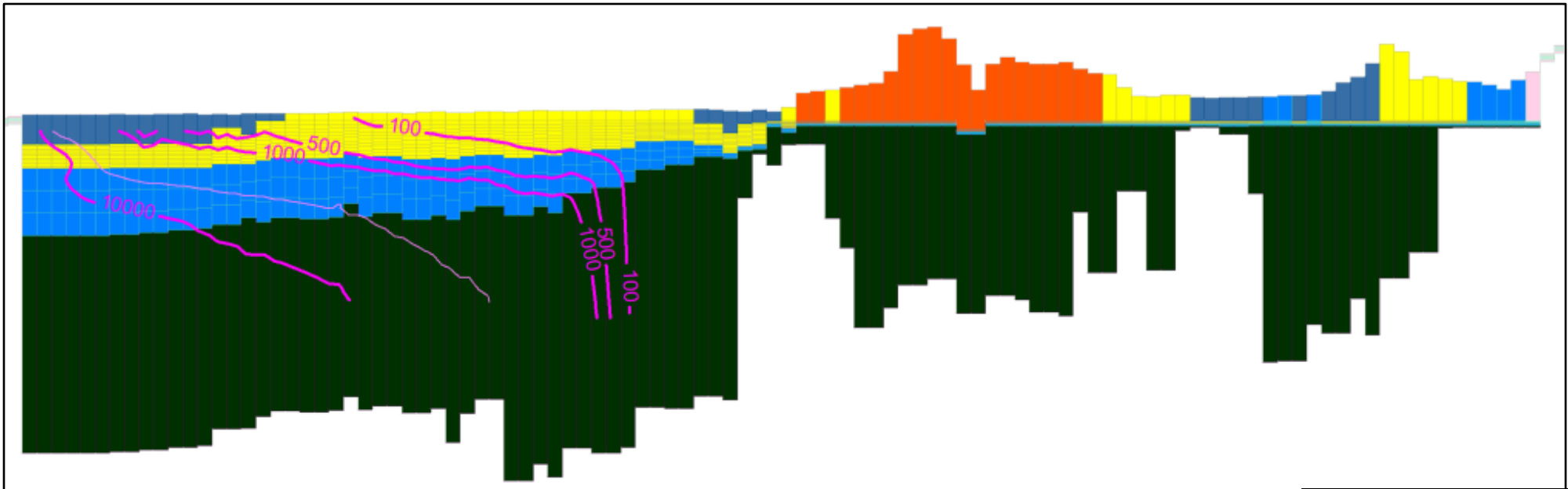


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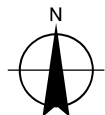
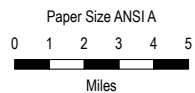
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Spring 2021 Deep Chloride Map

FIGURE 28



- Legend (graph)**
- Channel Deposits
  - Quaternary Alluvium
  - Hookton Formation
  - Upper Carlotta
  - Lower Carlotta
  - Simulated Chloride Concentration Contour (mg/L)
- Legend (map)**
- Eel River Valley Basin (No. 1-010)
  - Cross Section

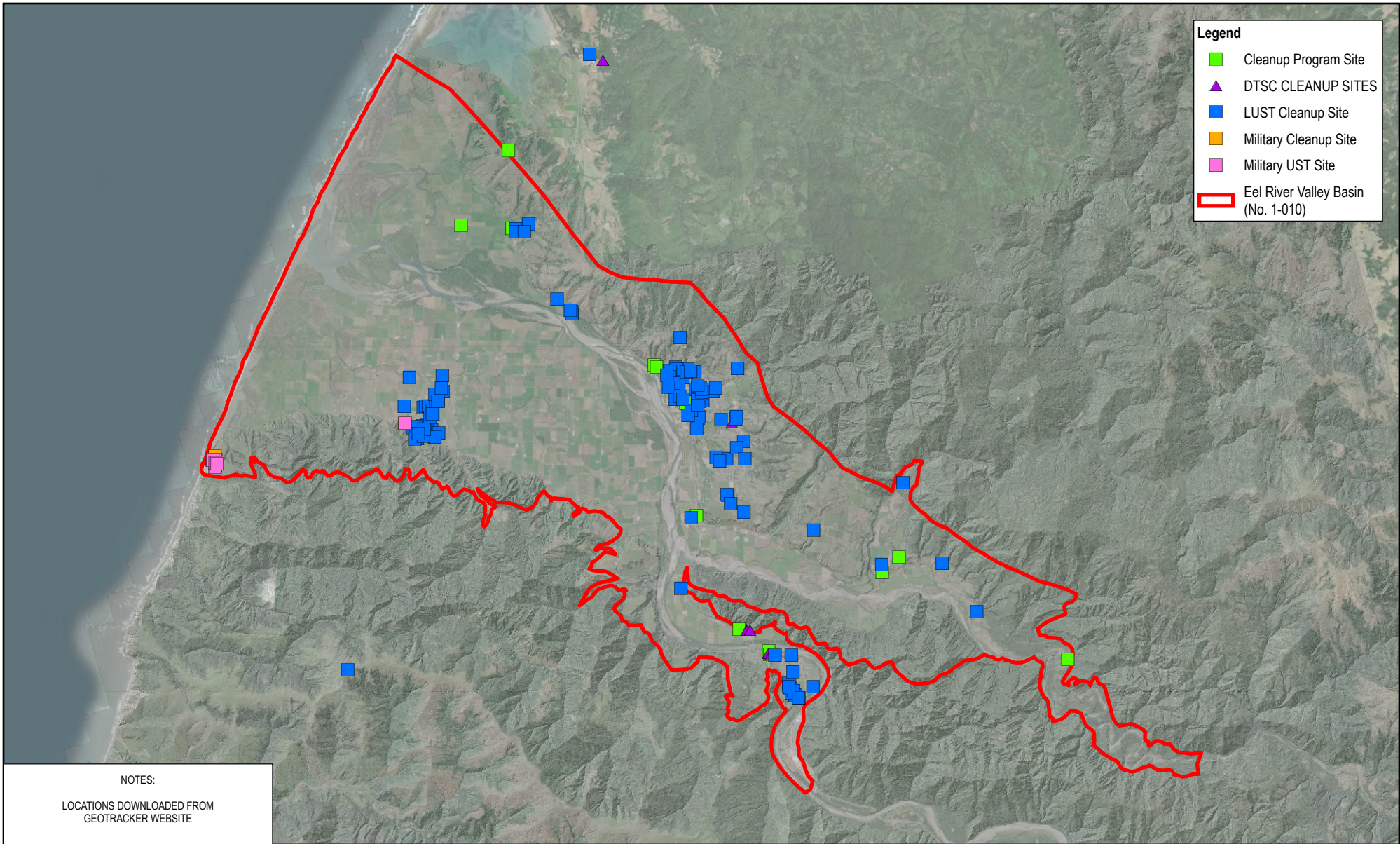


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**Seawater Deep Chloride Cross Section**

**FIGURE 29**



**Legend**

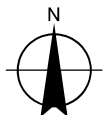
- Cleanup Program Site
- ▲ DTSC CLEANUP SITES
- LUST Cleanup Site
- Military Cleanup Site
- Military UST Site
- Eel River Valley Basin (No. 1-010)

NOTES:  
 LOCATIONS DOWNLOADED FROM  
 GEOTRACKER WEBSITE



Paper Size ANSIA  
 0 1 2 3  
 Miles

Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

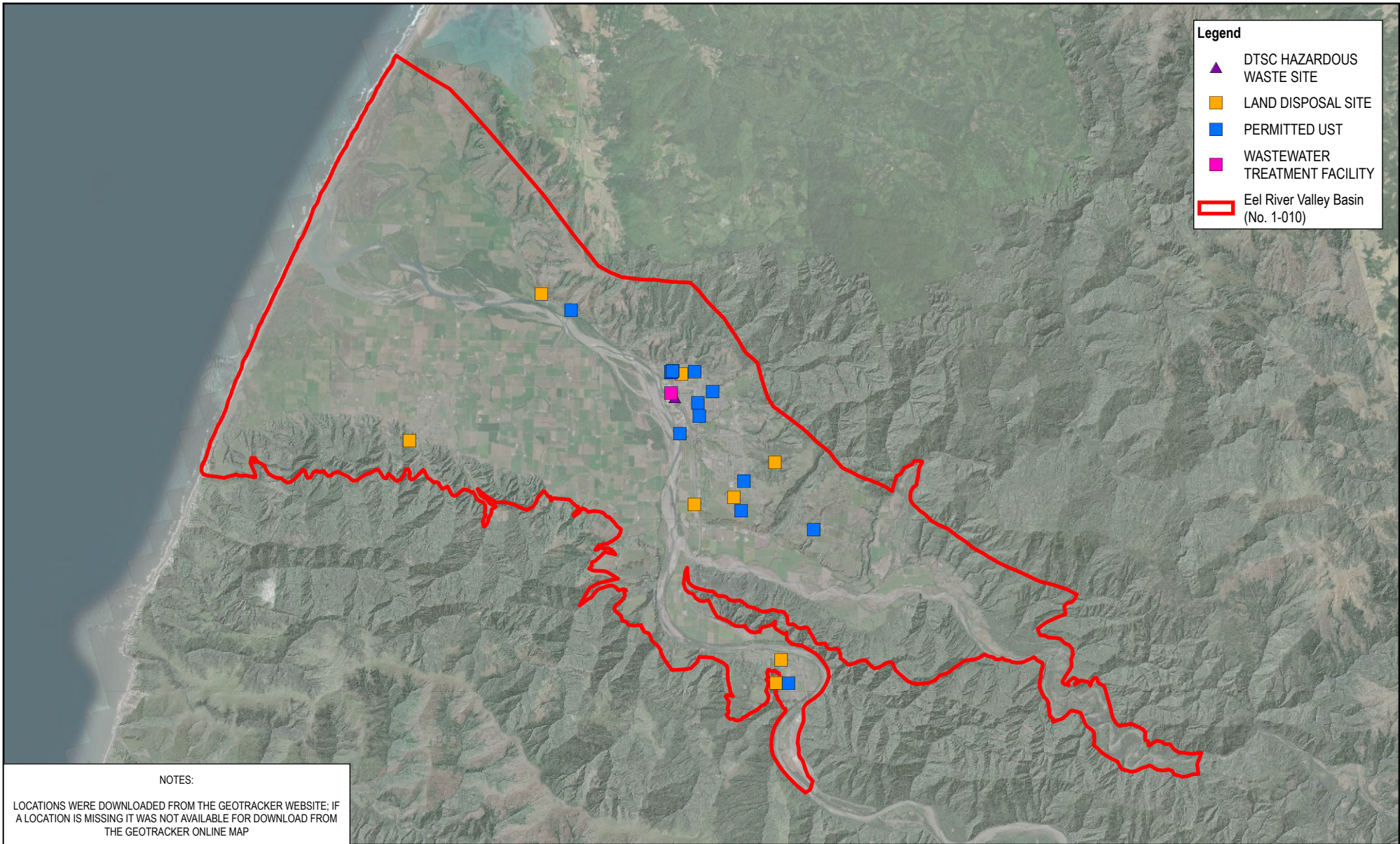


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Geotracker UST and CleanUp Sites

FIGURE 30



**Legend**

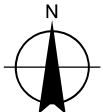
- ▲ DTSC HAZARDOUS WASTE SITE
- LAND DISPOSAL SITE
- PERMITTED UST
- WASTEWATER TREATMENT FACILITY
- Eel River Valley Basin (No. 1-010)

**NOTES:**  
 LOCATIONS WERE DOWNLOADED FROM THE GEOTRACKER WEBSITE; IF A LOCATION IS MISSING IT WAS NOT AVAILABLE FOR DOWNLOAD FROM THE GEOTRACKER ONLINE MAP



Paper Size ANSIA  
 0 1 2 3  
 Miles

Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

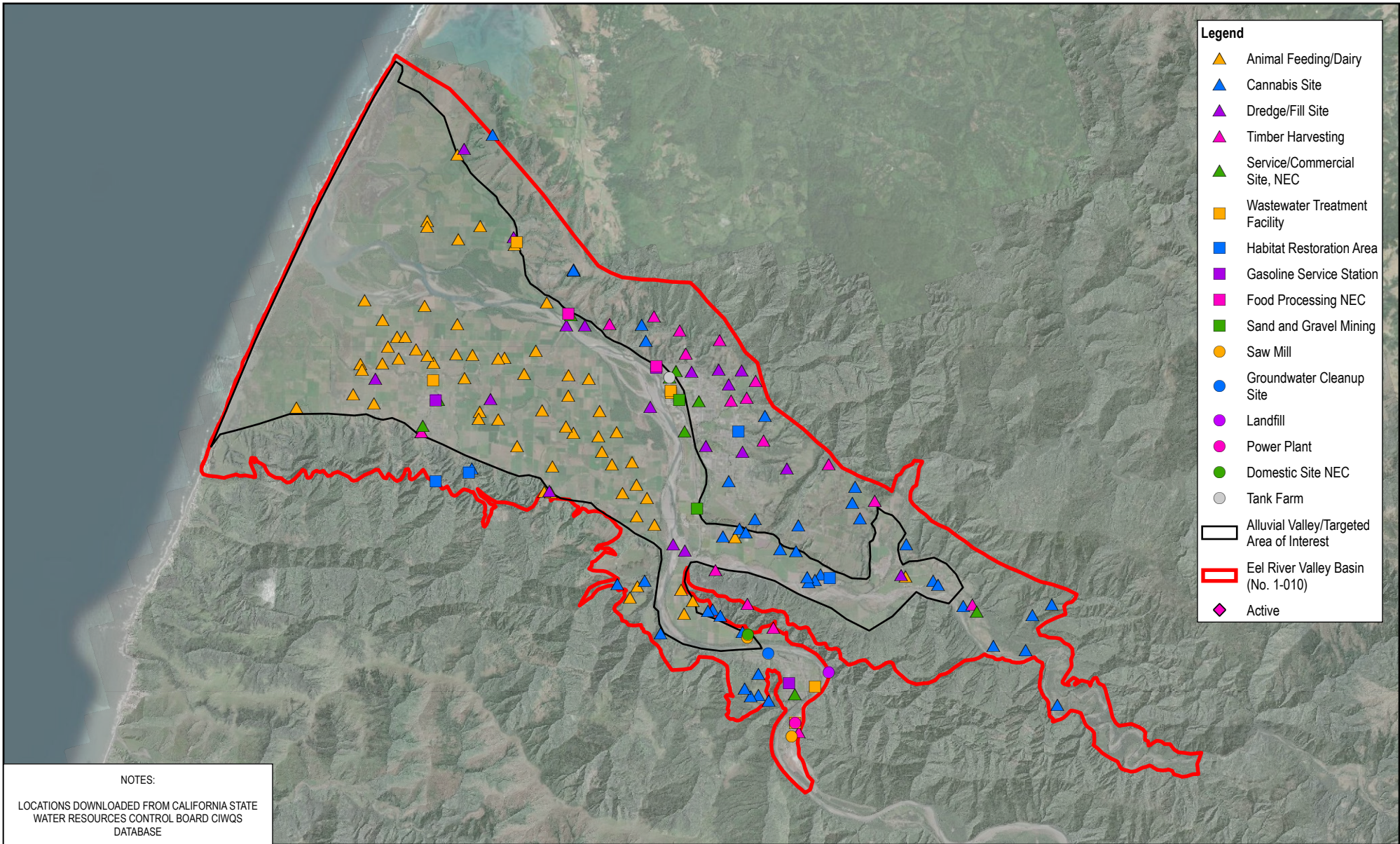


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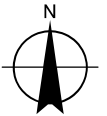
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**Geotracker Permitted Facilities**

**FIGURE 31**



Paper Size ANSIA  
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 Miles  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

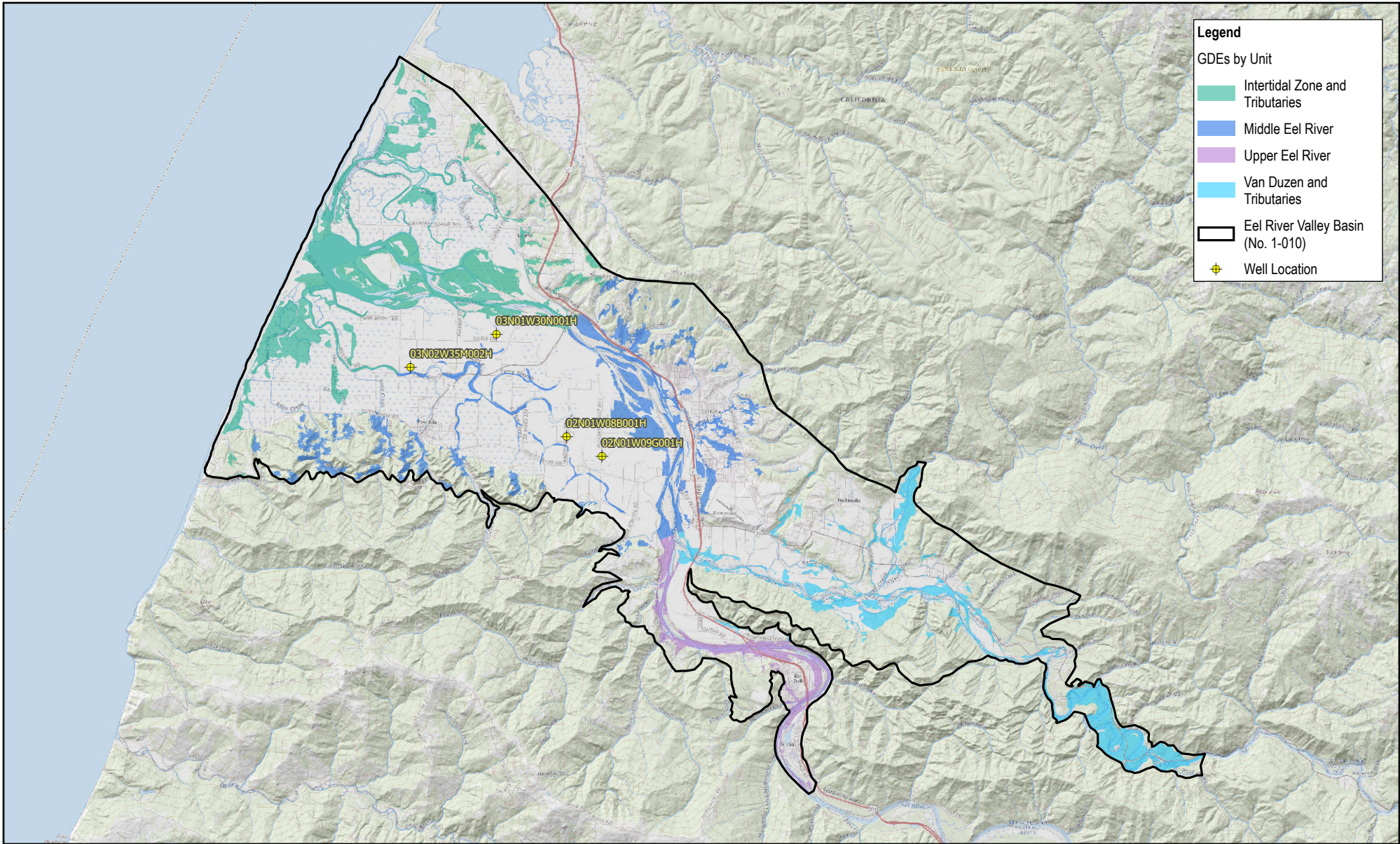


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Regulated Facilities with Active  
 Permits Listed in CIWQS

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FIGURE 32



**Legend**

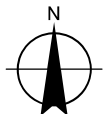
GDEs by Unit

- Intertidal Zone and Tributaries
- Middle Eel River
- Upper Eel River
- Van Duzen and Tributaries
- Eel River Valley Basin (No. 1-010)
- Well Location



Paper Size ANSIA  
 0 1 2 3  
 Miles

Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

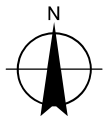
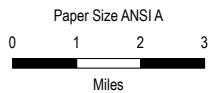
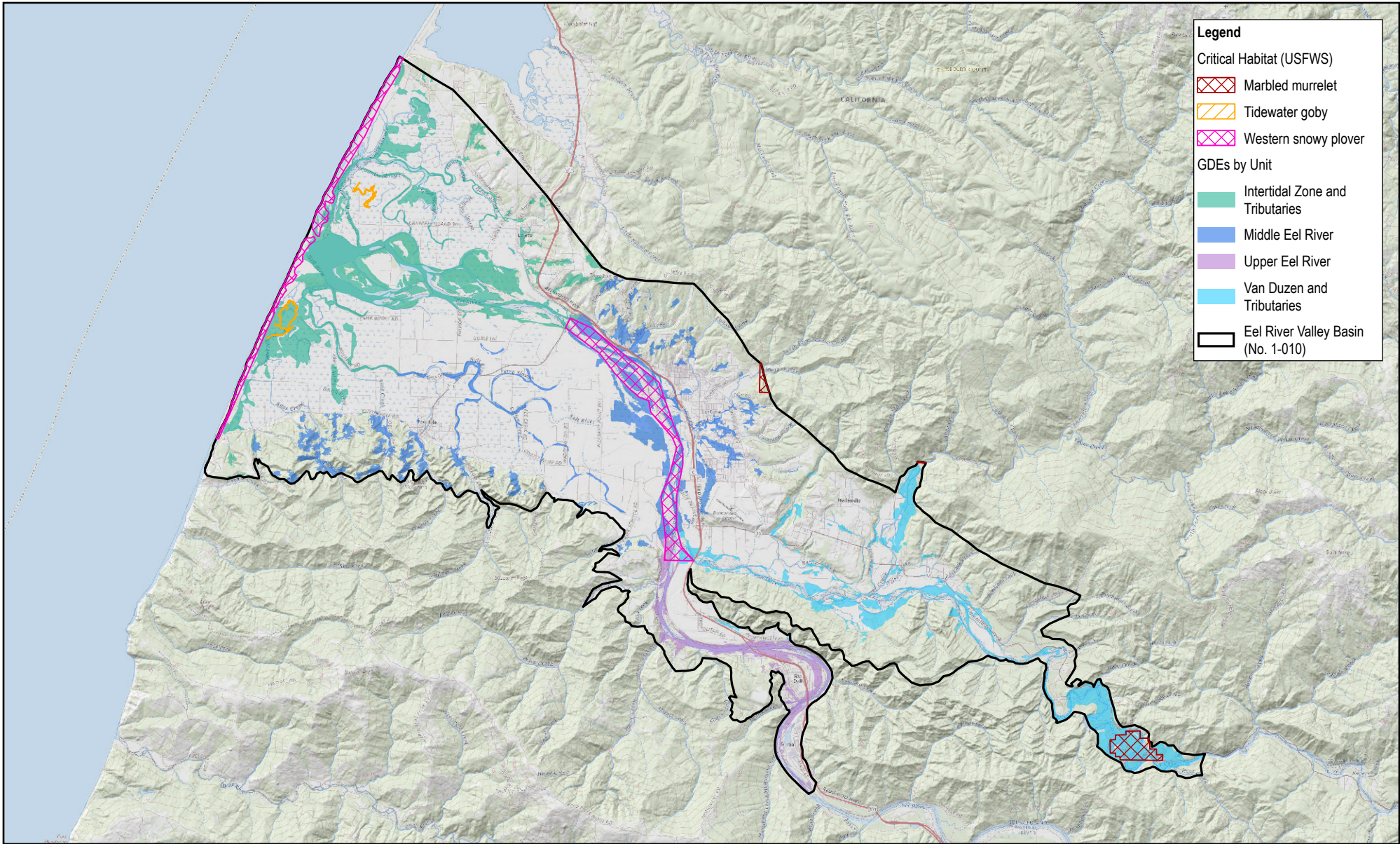


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**Potential Groundwater  
 Dependent Ecosystems**

**FIGURE 33**



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

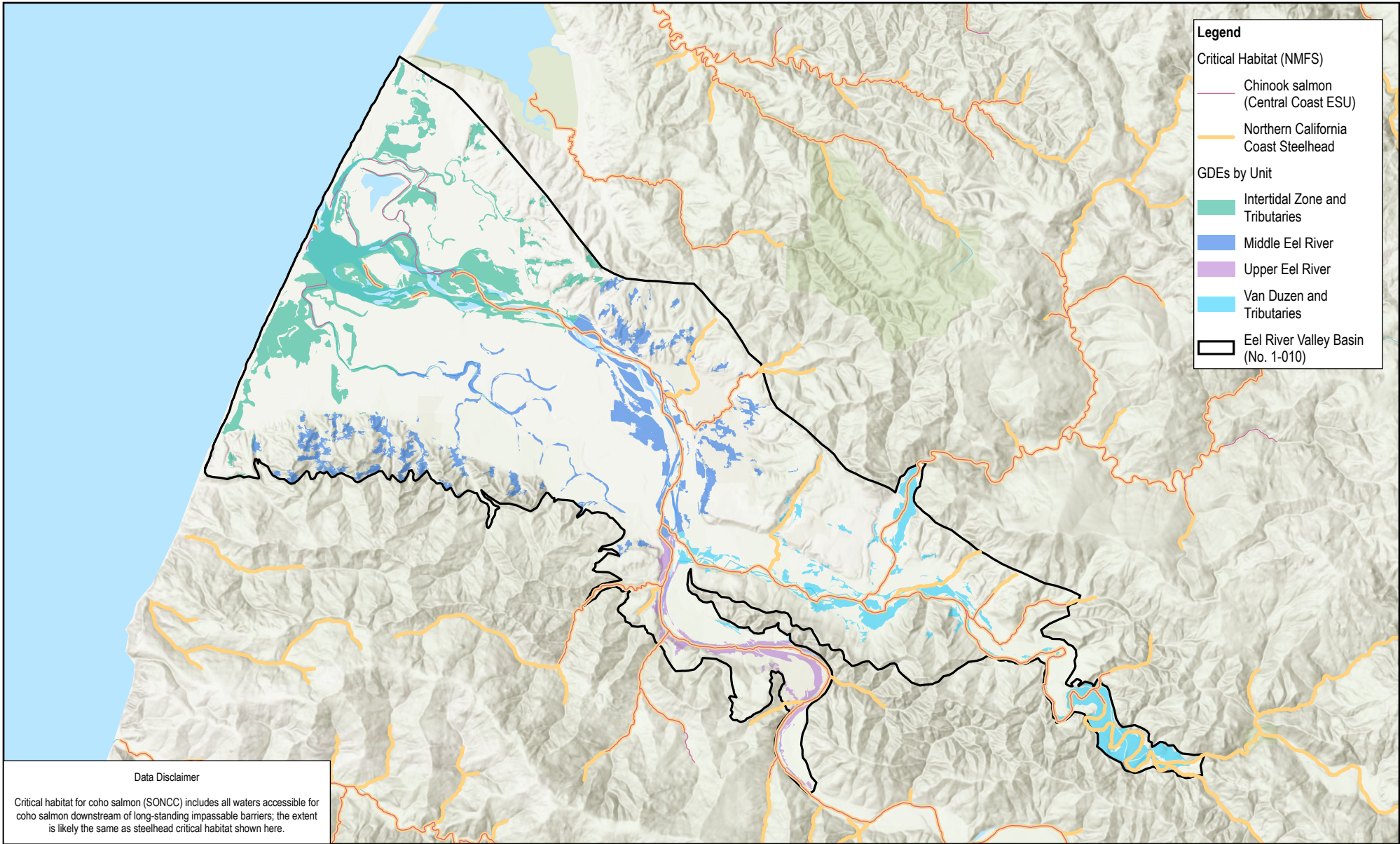


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**USFWS Critical Habitat  
 and GDE Units**

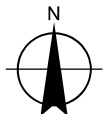
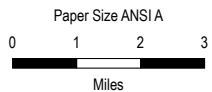
**FIGURE 34**



- Legend**
- Critical Habitat (NMFS)**
- Chinook salmon (Central Coast ESU)
  - Northern California Coast Steelhead
- GDEs by Unit**
- Intertidal Zone and Tributaries
  - Middle Eel River
  - Upper Eel River
  - Van Duzen and Tributaries
  - Eel River Valley Basin (No. 1-010)

**Data Disclaimer**

Critical habitat for coho salmon (SONCC) includes all waters accessible for coho salmon downstream of long-standing impassable barriers; the extent is likely the same as steelhead critical habitat shown here.



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

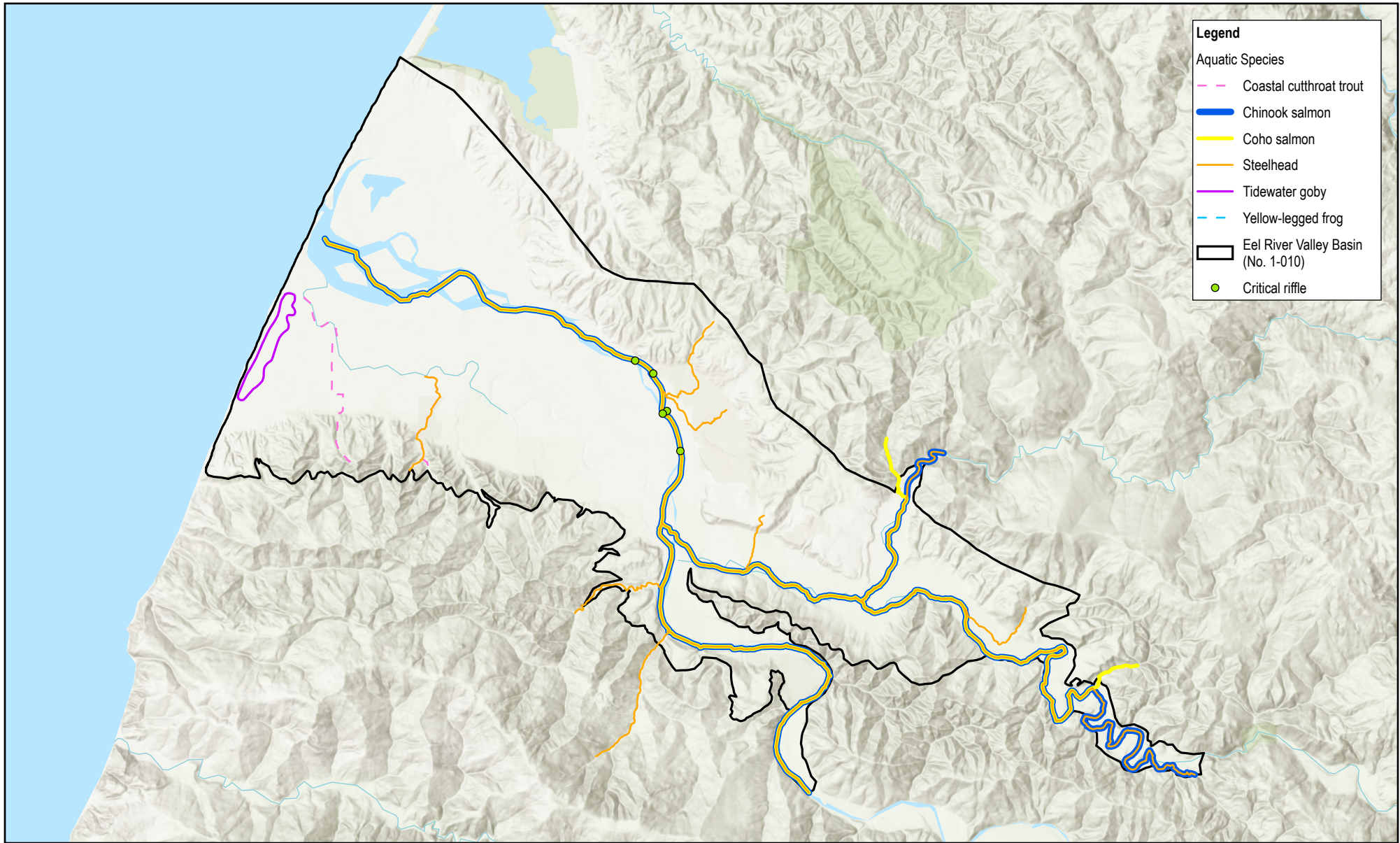


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**NMFS Critical Habitat and GDE Units**

**FIGURE 35**



**Legend**

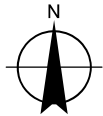
**Aquatic Species**

- Coastal cutthroat trout
- Chinook salmon
- Coho salmon
- Steelhead
- Tidewater goby
- Yellow-legged frog
- Eel River Valley Basin (No. 1-010)
- Critical riffle



Paper Size ANSIA  
 0 1 2 3  
 Miles

Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

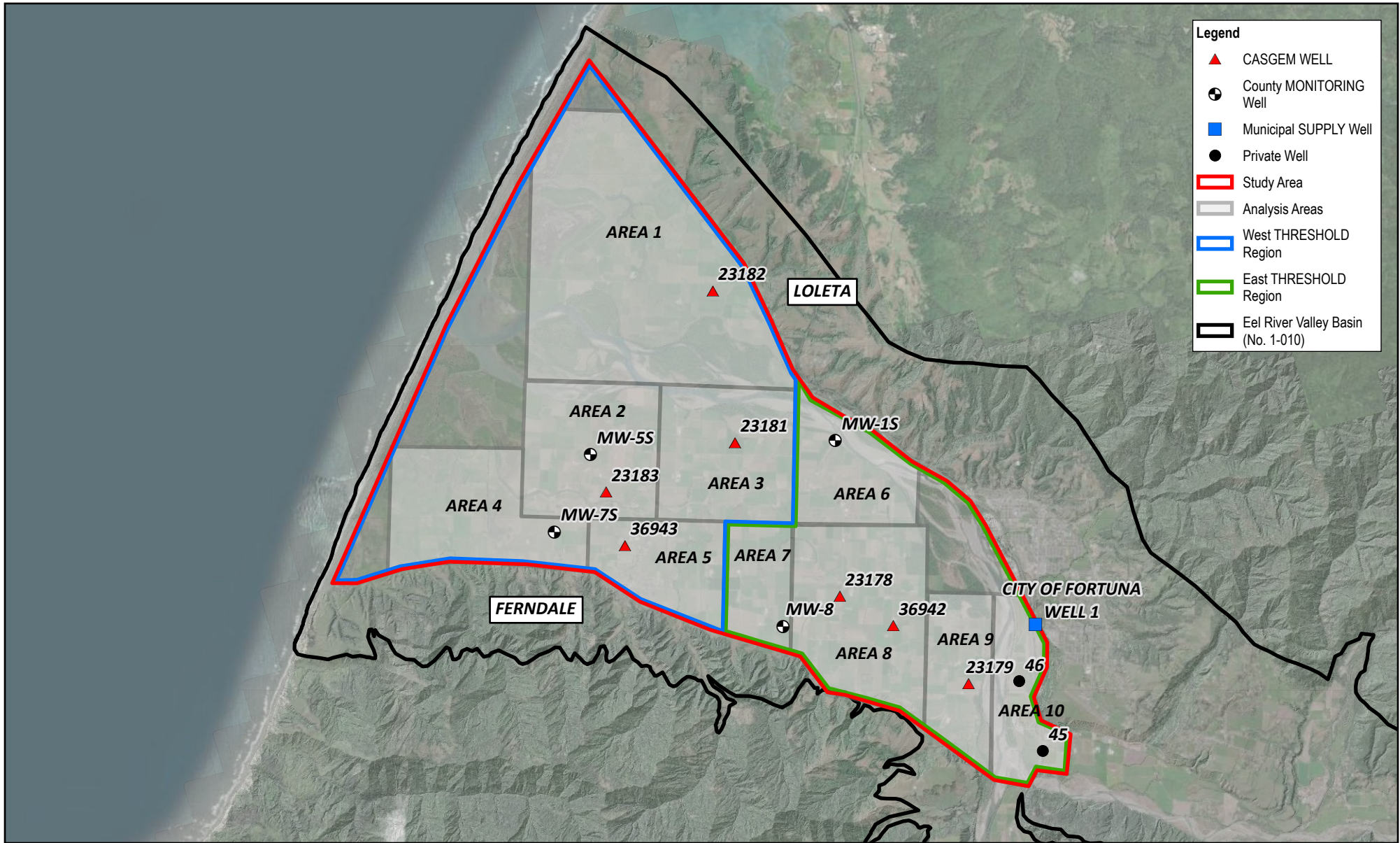


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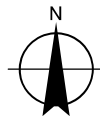
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**Aquatic Species Distribution**

**FIGURE 36**



Paper Size ANSIA  
 0 1 2  
 Miles  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



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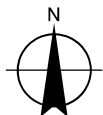
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**Well Locations and Areas Used  
 for Well Impacts Analysis**

**FIGURE 37**



Paper Size ANSIA  
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 Miles  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

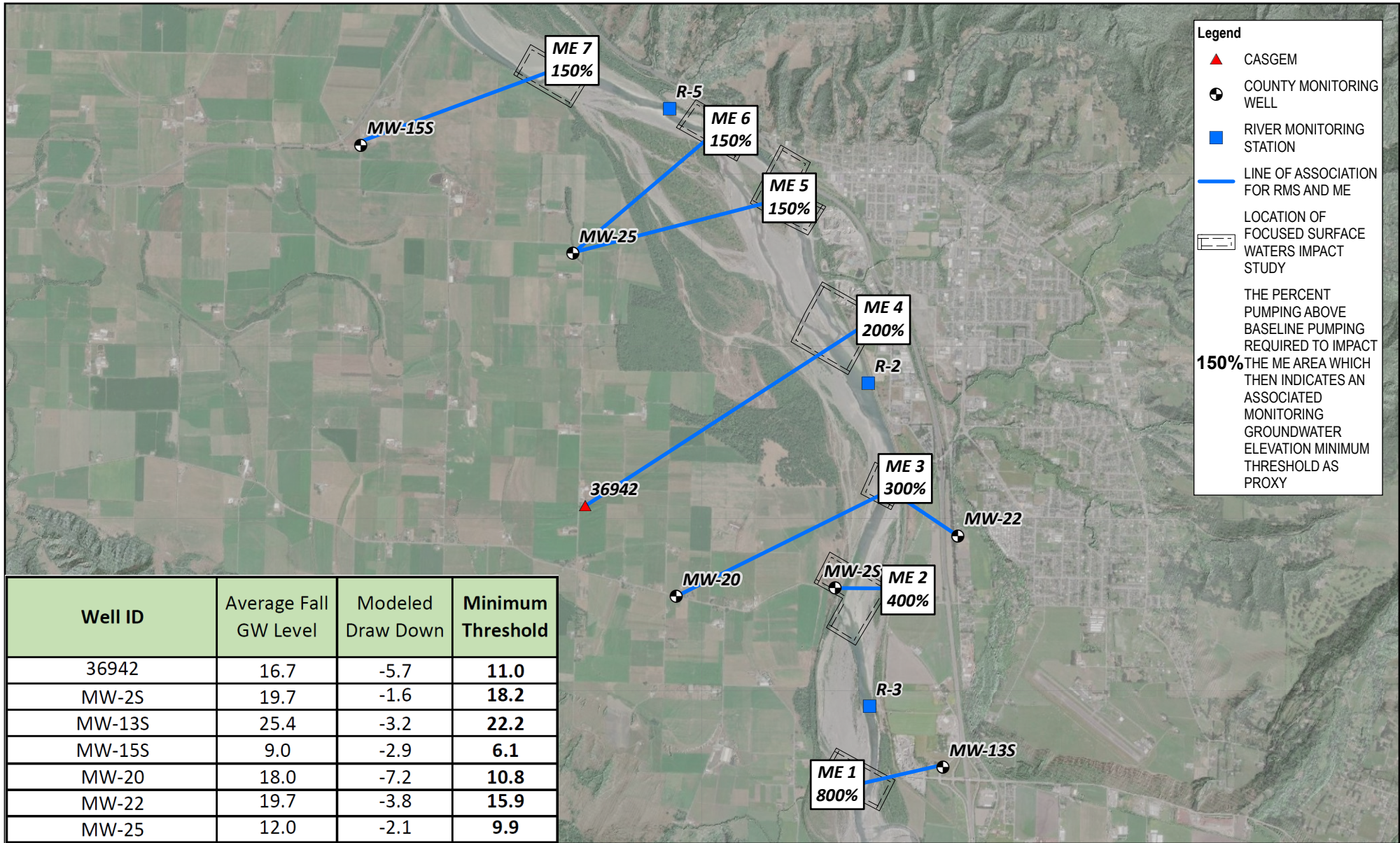


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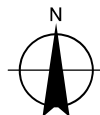
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**Representative Monitoring  
 Sites for Well Impacts**

**FIGURE 38**



Paper Size ANSIA  
 0 1,000 2,000 3,000 4,000  
 Feet  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

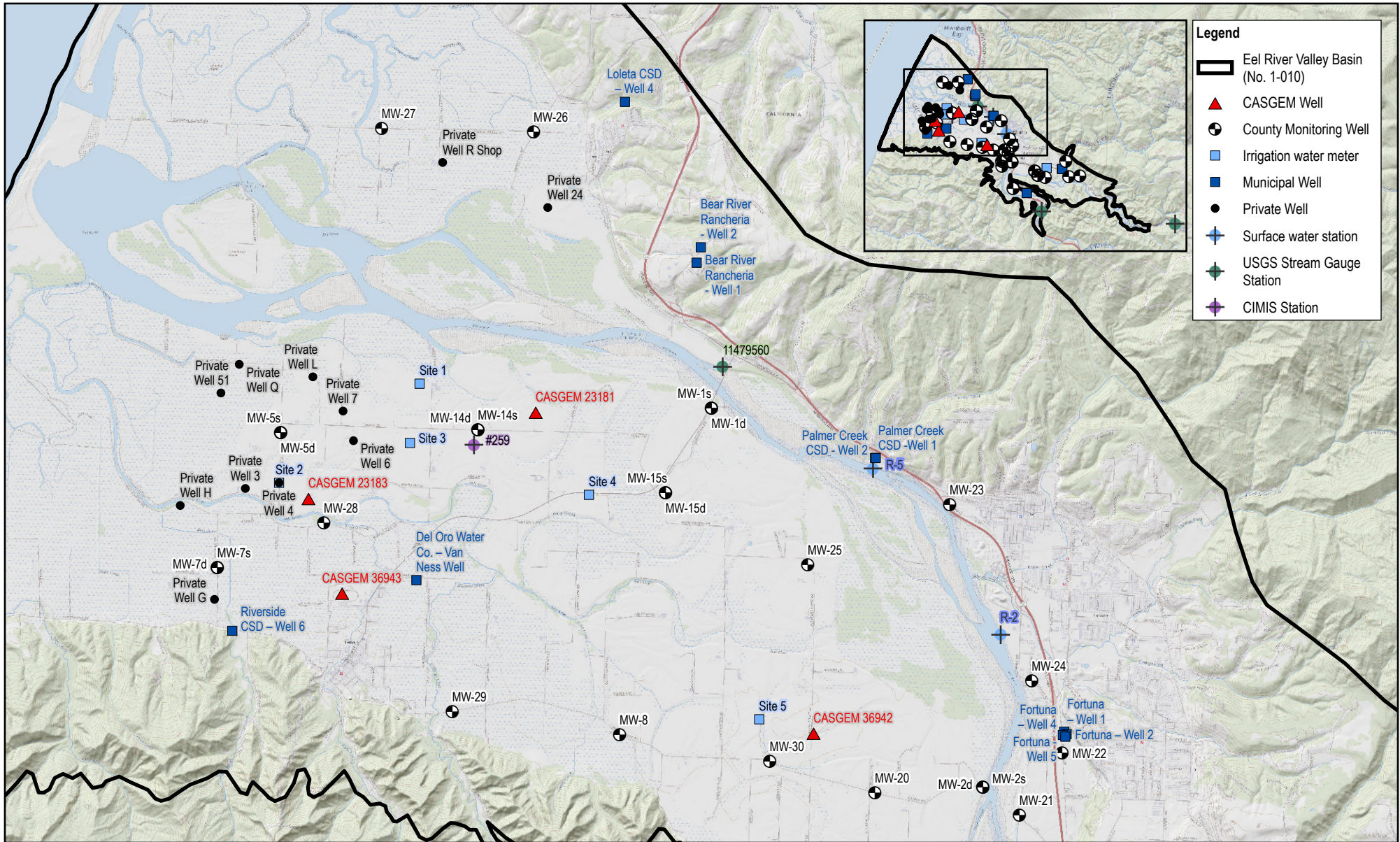


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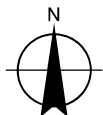
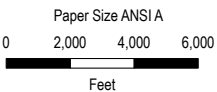
Proxy Groundwater Sites  
 for Surface Water Depletion

FIGURE 39



**Legend**

- Eel River Valley Basin (No. 1-010)
- CASGEM Well
- County Monitoring Well
- Irrigation water meter
- Municipal Well
- Private Well
- Surface water station
- USGS Stream Gauge Station
- CIMIS Station



Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

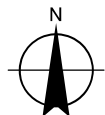
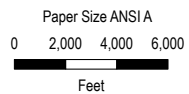
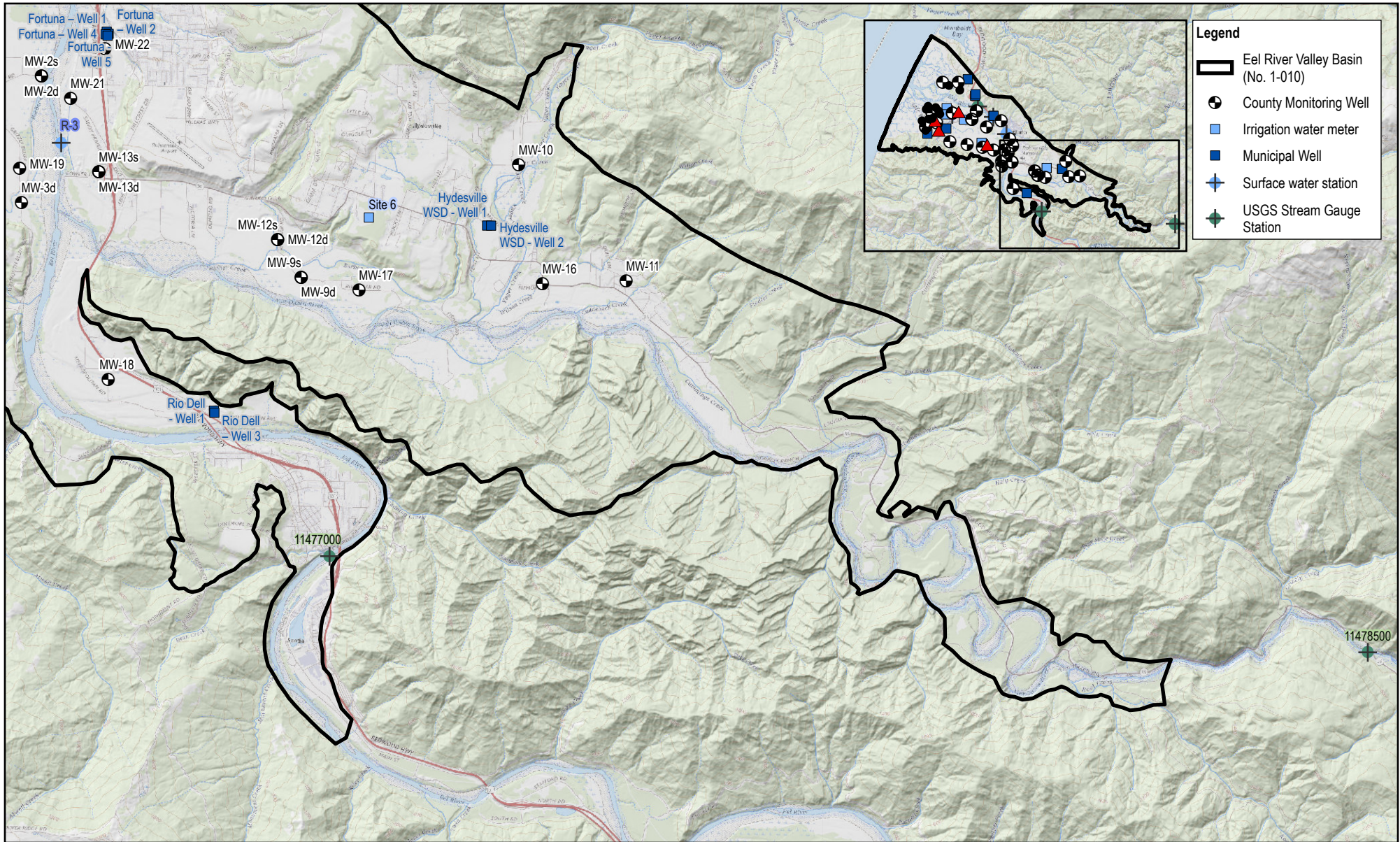


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**Monitoring Network  
West side of Eel River Valley Basin**

**FIGURE 40**



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



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**Monitoring Network**  
**East side of Eel River Valley Basin**

**FIGURE 41**