

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

ORDER R5-2014-XXXX
MONITORING AND REPORTING PROGRAM
APPENDIX MRP-3
REPRESENTATIVE MONITORING SITES AND SUBWATERSHED DRAINAGES

This appendix is provided as part of Monitoring and Reporting Program Order R5-2014-XXX that includes requirements for a third-party representative entity assisting individual irrigated lands operators or owners that are members of the third-party. This appendix uses information from the Sacramento Valley Water Quality Coalition's (SVWQC) Monitoring and Reporting Program Order R5-2009-0875 (2009 MRP), Attachment C. Information for the Goose Lake subwatershed is from the Goose Lake Coalition June 2007, December 2007 Semi-Annual Monitoring Reports and the 2010 Annual Monitoring Report. The purpose of this appendix is to provide documentation of document the representative monitoring sites in each subwatershed for the third-party monitoring program and to provide background information that can be applied to selecting drainages that may qualify for the reduced monitoring/management practice verification option (see Attachment B, MRP Section III.C.1.a-).).

Under the 2009 MRP, monitoring sites were selected by the Sacramento Valley Water Quality Coalition in each subwatershed area of the Sacramento River Watershed. Under MRP Order R5-2014-XXXX, the monitoring sites are categorized as Representative, Integration and/or Special Project sites according to the approach described in the MRP section III.A. Representative sites are shown in the tables in this appendix with the drainages that they represent and all of the relevant drainages are shown in the subwatershed maps included here and provided by the SVWQC.

The Sacramento Valley Water Quality Coalition is organized into ~~ten~~ (10) twelve (12) subwatershed areas (Figure 1). Each subwatershed area is organized and managed by a group of local representatives who are actively engaged in agriculture and/or resource management in their region.

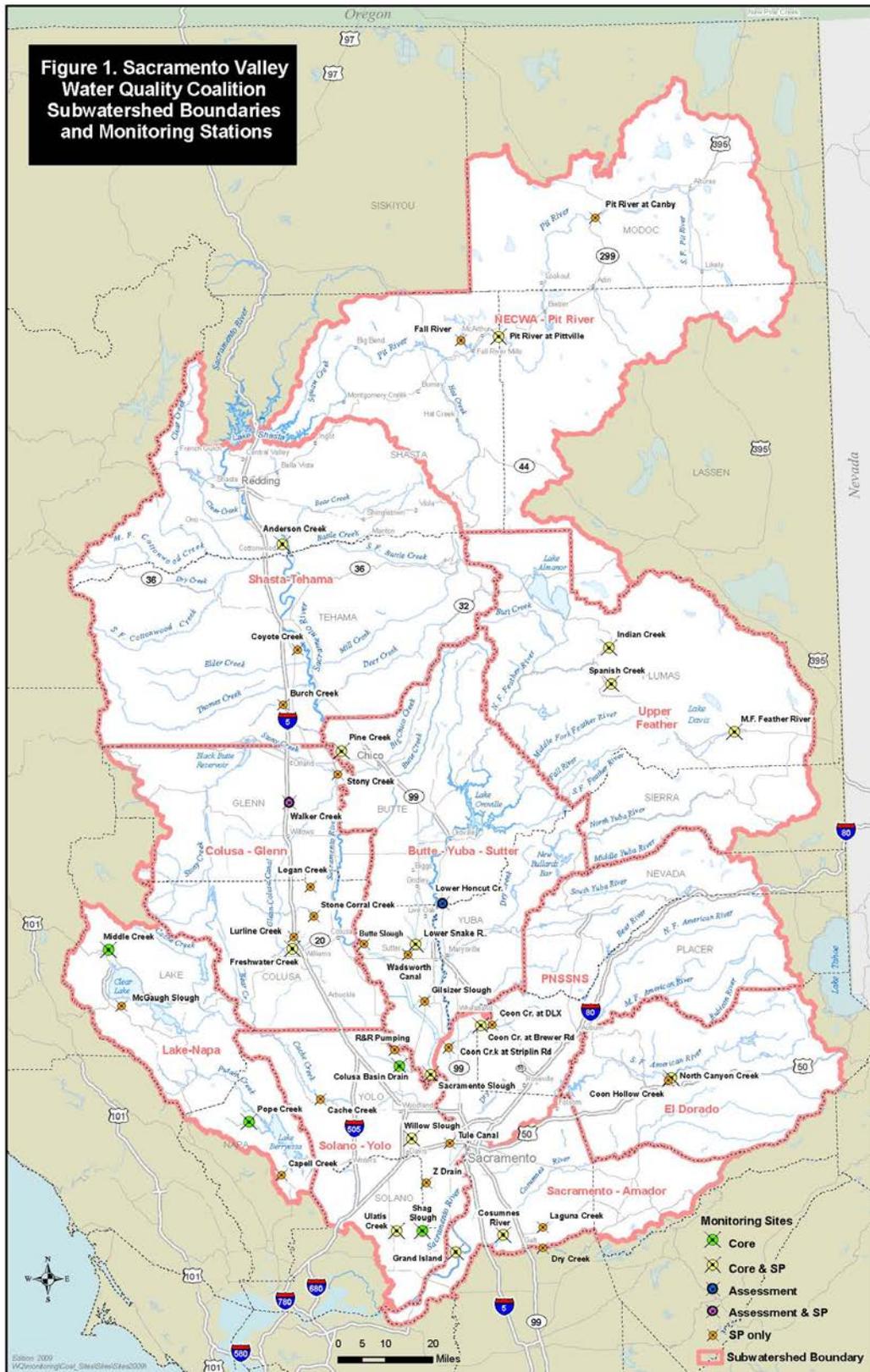
Each of the SVWQC's Subwatershed Groups is listed below, along with the name of the managing entity(s) (in parentheses):

- Butte-Yuba-Sutter Subwatershed (Sutter County RCD and Farm Bureau)
- Colusa-Glenn Subwatershed (Colusa Glenn Subwatershed Program)
- El Dorado Subwatershed (El Dorado County Agricultural Water Quality Management Corporation)
- ~~Lake-Napa~~ Subwatershed (Lake County Agricultural Watershed Program ~~and~~)
- Napa Subwatershed (Napa County Putah Creek Watershed Group)
- Pit River Subwatershed (Northeastern California Water Association)
- Placer-Nevada-South Sutter-North Sacramento Subwatershed (PNSSNS Subwatershed Group)
- Sacramento-Amador Subwatershed (Sacramento Amador Water Quality Alliance)
- Shasta-Tehama Subwatershed (Shasta Tehama Water Education Coalition)

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- Solano-~~Yolo~~ Subwatershed (Solano Resource Conservation District Water Quality Coalition-~~and~~)
- Yolo Subwatershed (Yolo County Farm Bureau Education Corporation)
- Upper Feather River Subwatershed (Upper Feather River Watershed Group)

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- Goose Lake Subwatershed (Goose Lake Resource Conservation District)

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Figure 1. Subwatershed areas in the Sacramento River Watershed



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Butte-Yuba-Sutter Subwatershed

The Butte-Yuba-Sutter Subwatershed encompasses approximately 1,874,510 acres in the central portion of the Sacramento Valley, and includes all of Butte and Yuba Counties and roughly three-quarters of Sutter County. Approximately 251,000 acres are in the upper portions of the watershed and have no irrigated acreage. The subwatershed area is bounded on the east by the Sierra Nevada Range, on the west by the Sacramento River, on the north by the Tehama County line, and on the south by the Feather and Bear Rivers (~~Figure 1~~). Topography varies from a relatively flat valley floor, to rolling foothills and volcanic buttes, to steep forested mountains and deep river canyons. Elevation ranges from approximately 20 to 7,000 feet above sea level. Irrigated agriculture occurs in a large portion of the Butte-Yuba-Sutter Subwatershed, with approximately 570,000 acres currently being farmed, a significant portion (about 260,000 acres) of which is planted in rice. Some dryland grains are also grown, typically in rotation with other field crops. Other land use types include non-irrigated grazing rangeland, urban and rural residential development, and coniferous forests, oak woodlands, grasslands, and wetlands.

The Butte-Yuba-Sutter Subwatershed encompasses 32 different drainages where irrigated agriculture is present. Table 1 lists the drainages by name and the crops grown within each drainage area. Figure 2 shows the extent of the drainages.

Table 1. Butte-Yuba-Sutter Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|------------------------------------|---|
| Representative monitoring site to be determined | RD 1500 (Robbins Basin) | Rice, beans, alfalfa, hay, corn, wheat, tomatoes, pumpkins, melons, onions, walnuts, milo, safflower, sunflower, sudan |
| | Grasshopper Slough | Walnuts, rice, pasture, almonds, prunes, safflower, peaches, nectarines, melons and squash |
| | Ageden Slough | Rice, prunes, pasture, walnuts, peaches, alfalfa, sunflowers, safflower, apples |
| | RD 70 | Rice, safflower, walnuts, tomatoes, grain, beans, melons/squash, sunflowers, alfalfa |
| | RD 1660 | Rice, safflower, tomatoes, grain, melons/squash, beans, walnuts, sunflowers |
| | Chandler | Rice, prunes, walnuts, peaches, alfalfa, wheat, melons |
| | RD 823 | Rice, wheat, walnuts, alfalfa, prunes, safflower, peaches and nectarines |
| | Sutter Bypass | Rice, beans, safflower |
| Monitoring site in Pine Creek | Pine Creek | Almonds, walnuts, prunes, pasture, grain, beans, safflower |

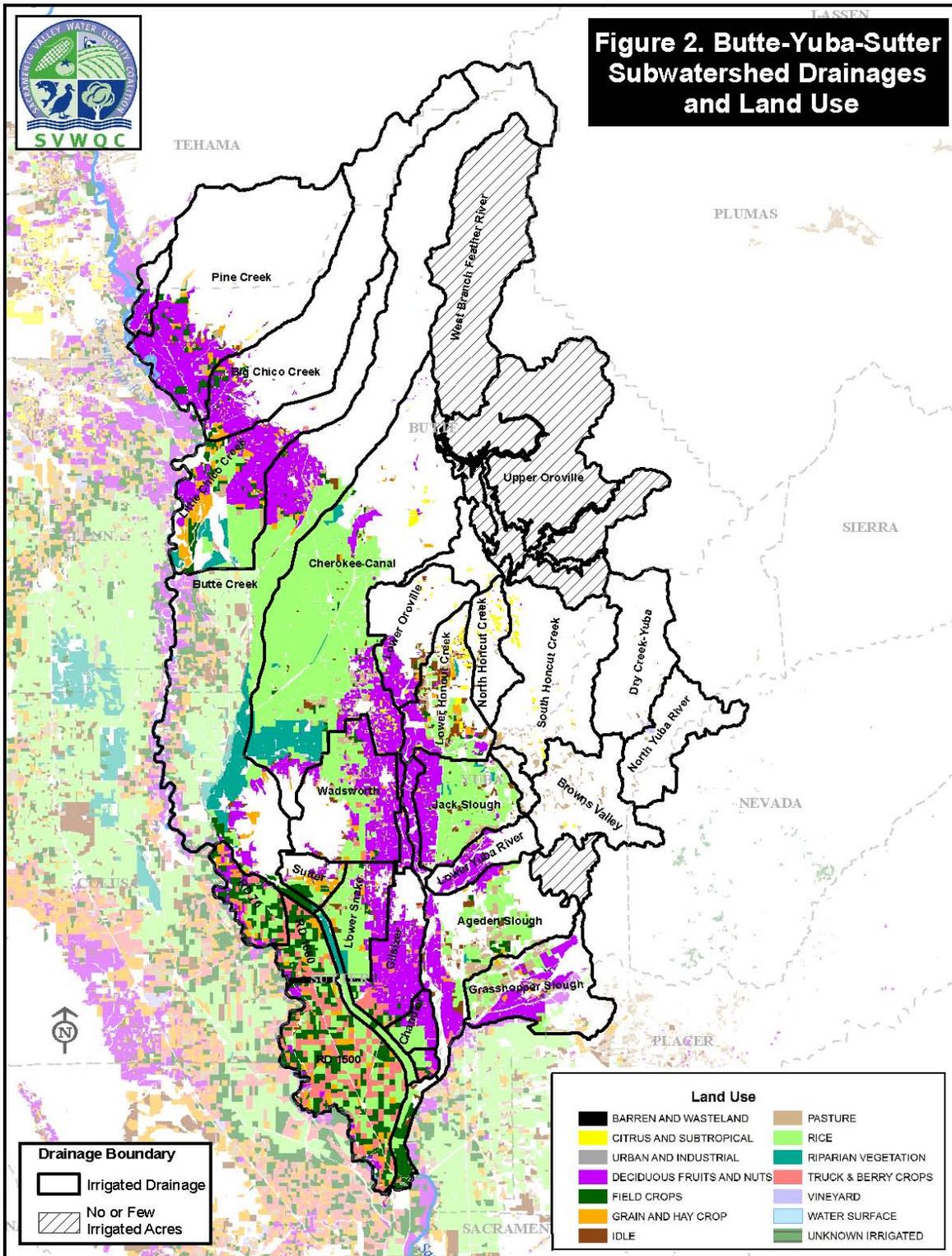
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| Type of Monitoring | Drainages | Crops |
|---|-------------------------------|---|
| Represented by Pine Creek monitoring site | Little Chico Creek | Almonds, rice, grain, wheat, corn, walnuts, prunes, beans |
| | Big Chico Creek | Almonds, walnuts, wheat, pasture, prunes, beans |
| | Dicus Slough | Walnuts, almonds, prunes, olives |
| Monitoring site in Lower Snake River | Lower Snake River | Rice, prunes, peaches, nursery, walnuts, pasture, almonds, nectarines |
| Represented by Lower Snake River monitoring site | Cherokee Canal | Rice, prunes, almonds, walnuts, peaches |
| | Butte Creek | Rice, almonds, walnuts, pecans, beans, sunflower, safflower |
| | Wadsworth | Rice, prunes, peaches, walnuts, pasture, beans, melons |
| | Lower Oroville | Walnuts, prunes, rice, peaches, |
| | Gilsizer | Prunes, peaches, walnuts, rice, tomatoes, melons/squash, sunflower, safflower |
| | Sutter | Grain, rice, almonds, safflower, walnuts, beans |
| Monitoring Site on Lower Honcut Creek | Lower Honcut Creek | Rice, walnuts, prunes, pasture, citrus, olives, grapes, pasture |
| Represented by Lower Honcut Creek monitoring site | Jack Slough | Rice, prunes, peaches, pasture |
| | Lower Yuba River | Peaches, walnuts, olives, prunes, pasture, cherries |
| | Feather River Direct – Sutter | Walnuts, prunes, peaches |
| | Feather River Direct – Yuba | Peaches, prunes, walnuts, cherries, pears |
| | South Honcut Creek | Pasture |
| | North Honcut Creek | Pasture |
| | Browns Valley | Pasture |
| | Dry Creek – Yuba | Pasture |
| | North Yuba River | Pasture |
| | Upper Jack Slough | Pasture, rice |
| | Oroville Dam | Pasture, grain |
| | <u>Grasshopper Slough</u> | <u>Walnuts, rice, pasture, almonds, prunes, safflower, peaches, nectarines, melons and squash</u> |
| | <u>Ageden Slough</u> | <u>Rice, prunes, pasture, walnuts, peaches, alfalfa, sunflowers, safflower, apples</u> |
| | <u>Chandler</u> | <u>Rice, prunes, walnuts, peaches, alfalfa, wheat, melons</u> |

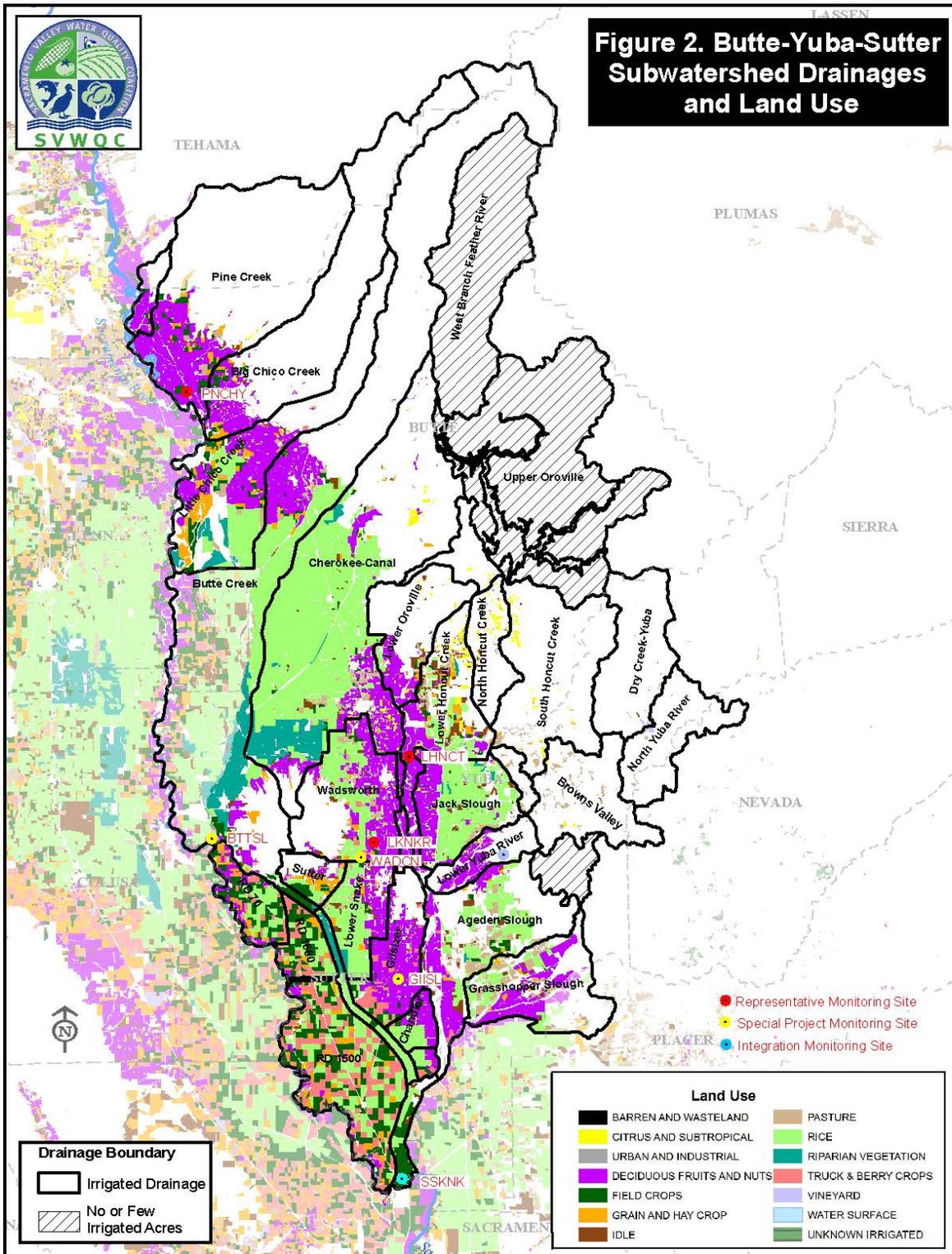
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| Type of Monitoring | Drainages | Crops |
|---|--------------------------------|---|
| | <u>RD 823</u> | <u>Rice, wheat, walnuts, alfalfa, prunes, safflower, peaches and nectarines</u> |
| <u>Monitoring Site on Wadsworth Canal</u> | <u>Lower Honcut Creek</u> | <u>Rice, walnuts, prunes, pasture, citrus, olives, grapes, pasture</u> |
| <u>Represented by Wadsworth Canal Monitoring Site</u> | <u>Wadsworth</u> | <u>Rice, prunes, peaches, walnuts, pasture, beans, melons</u> |
| | <u>RD 1500 (Robbins Basin)</u> | <u>Rice, beans, alfalfa, hay, corn, wheat, tomatoes, pumpkins, melons, onions, walnuts, milo, safflower, sunflower, sudan</u> |
| | <u>RD 70</u> | <u>Rice, safflower, walnuts, tomatoes, grain, beans, melons/squash, sunflowers, alfalfa</u> |
| | <u>RD 1660</u> | <u>Rice, safflower, tomatoes, grain, melons/squash, beans, walnuts, sunflowers</u> |
| | <u>Sutter</u> | <u>Grain, rice, almonds, safflower, walnuts, beans</u> |

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Colusa-Glenn Subwatershed

The Colusa-Glenn Subwatershed encompasses approximately 1.6 million acres in the west central portion of the Sacramento Valley, and includes all of Colusa and Glenn Counties and the northern portion of Yolo County. The subwatershed area is bounded on the east by the Sacramento River and Butte Creek, on the West by the Coast Ranges, on the north by the Tehama County line, and on the south by Cache Creek from the Dunnigan Hills, through the town of Yolo, to the Sacramento River at the Fremont Weir just south of Knight's Landing (Figure 1). Topography varies from a relatively flat or gently sloping valley floor, to rolling Coast Range foothills, to steep mountainous terrain. Elevation ranges from approximately 35 to 7,000 feet above sea level. Irrigated agriculture occurs in about 40% of the Colusa-Glenn Subwatershed, with approximately 600,000 acres currently being farmed, approximately 230,000 of which is rice. Over 520,000 acres in the subwatershed are in the Coast Range and have no significant irrigated acres. Some dryland grains are also grown, typically in rotation with other field crops. Other land use types include non-irrigated grazing rangeland, urban/rural residential development, and oak woodlands, grasslands, and wetlands.

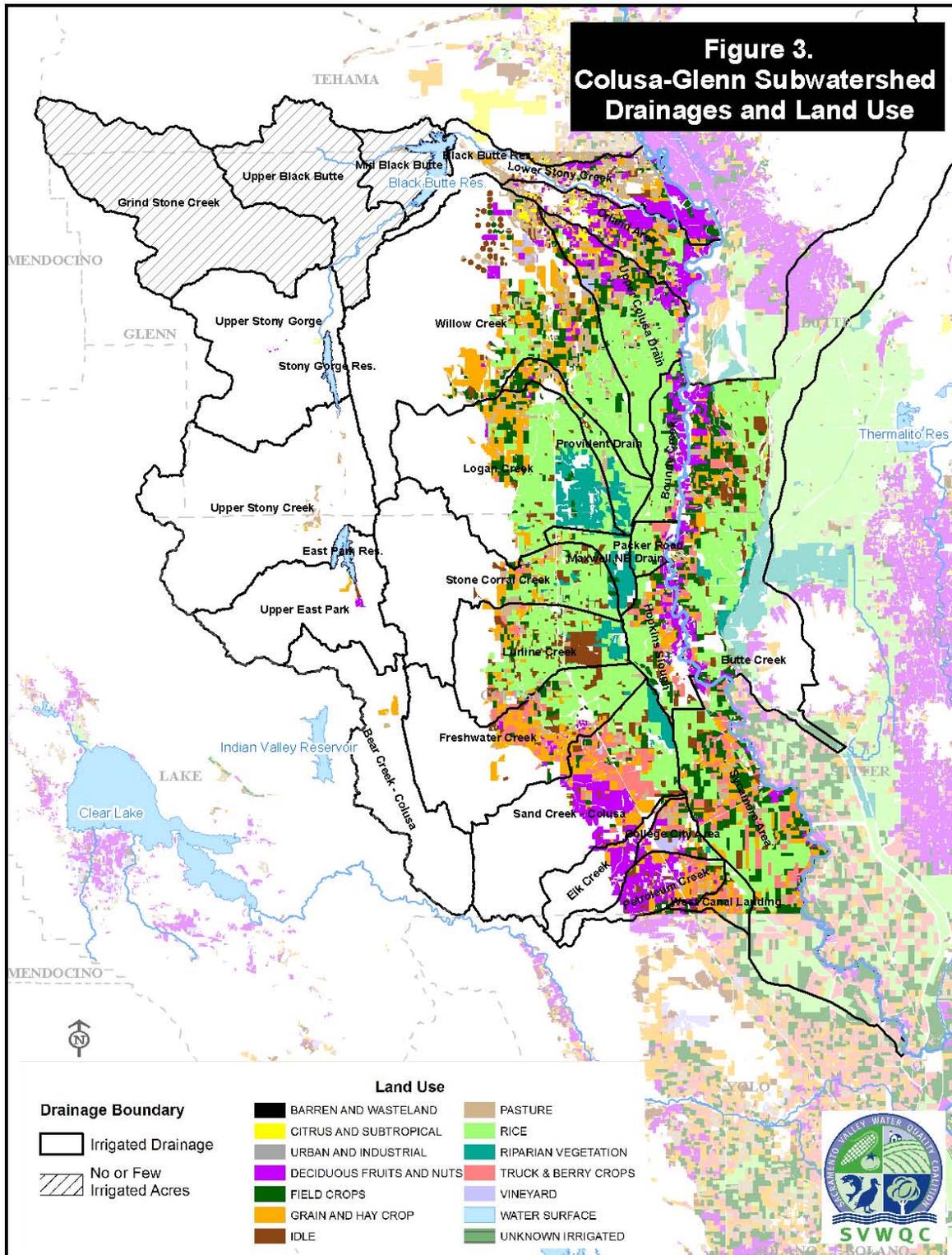
The Colusa-Glenn Subwatershed encompasses 31 different drainages where irrigated agriculture is present. Table 3 lists the drainages by name and the crops grown within each drainage area. Figure 3 shows the extent of the drainages.

Table 3. Colusa-Glenn Subwatershed Drainages and Crops

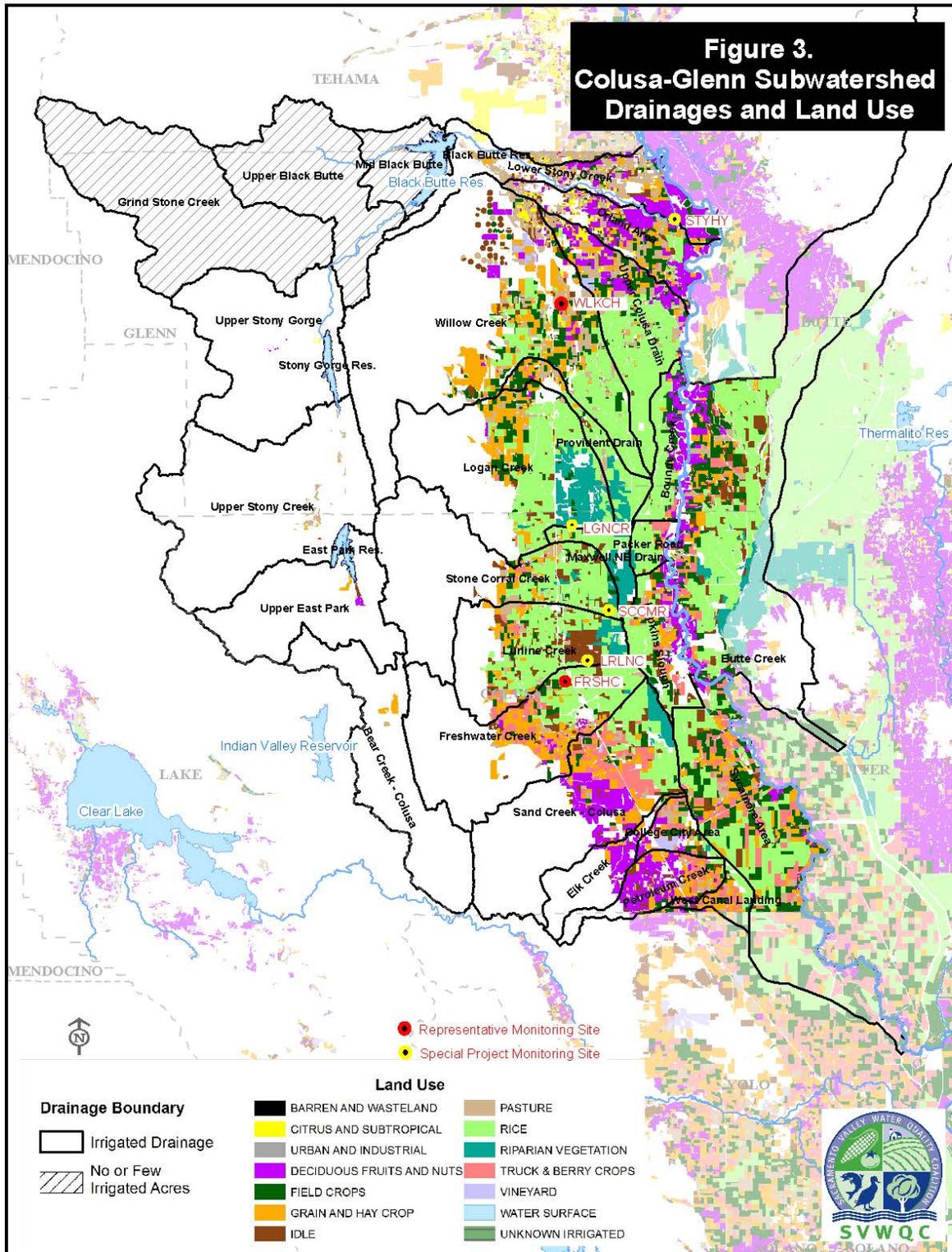
| Type of Monitoring | Drainages | Crops |
|---|--------------------|--|
| Representative monitoring site to be determined | Sycamore-area | Rice, tomatoes, wheat, safflower, melons/squash |
| | Buckeye-Creek | Almonds, tomatoes, pasture, grain |
| | Bird-Creek | Grain, rice, melons/squash, corn |
| | Smith-Creek | Tomatoes, grain, pasture, corn, rice, melons, squash |
| | Breton-Creek | Grain, pasture, rice, tomatoes, safflower |
| | Oat-Creek | Grain, rice, safflower, pasture, melons/squash |
| | College-City-Area | Almonds, tomatoes, wheat, pasture |
| | Meridian-Edge | Grain, melons/squash, cotton, tomatoes |
| | West-Canal-Landing | Rice, wheat, tomatoes, melons/squash, safflower |
| Monitoring site in Walker Creek | Walker Creek | Rice, grain, pasture, corn, almonds, olives, range |
| Represented monitoring site in Walker Creek | Lower Stony Creek | Pasture, prunes, almonds, grain, walnuts |
| | Orland Area | Almonds, pasture, grain, walnuts, corn, prunes |
| | Upper Colusa Drain | Rice, grain, almonds, corn, |

| Type of Monitoring | Drainages | Crops |
|--|---|---|
| | | pasture, walnuts |
| | Logan Creek | Rice, grain, corn, pasture, cotton, sunflower, walnuts |
| | Bounde Creek | Rice, walnuts, almonds |
| | Provident Drain | Rice, grain, pasture, corn |
| | Packer Road | Rice, tomatoes, wheat, prunes |
| | Upper Stony Gorge | Range, pasture |
| | Upper Stony Creek | Range, pasture |
| Monitoring site in Freshwater Creek | Freshwater Creek | Rice, tomatoes, squash, grain, pasture, safflower |
| Represented monitoring site Freshwater Creek | Lurline Creek West Canal Landing | Rice, pasture, grain wheat, tomatoes, melons/squash, safflower |
| | College City Area | Almonds, tomatoes, wheat, pasture |
| | Sycamore area | Rice, tomatoes, wheat, safflower, melons/squash |
| | Lurline Creek | Rice, pasture, grain, melons/squash |
| | Maxwell NE Drain | Rice, safflower |
| | Sand Creek | Rice, tomatoes, almonds, squash/melons |
| | Petroleum Creek | Almonds, wheat, tomatoes, melons/squash, pasture |
| | Elk Creek | Almonds, wheat, pasture |
| | East Park Reservoir | Grain |
| | Upper East Park | Grain, walnuts |
| | Stone Corral Creek | Rice, wheat, safflower, pasture |
| | Bear Creek | Grain, pasture |
| | Hopkins Slough | Rice, wheat, prunes, safflower |

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El Dorado Subwatershed

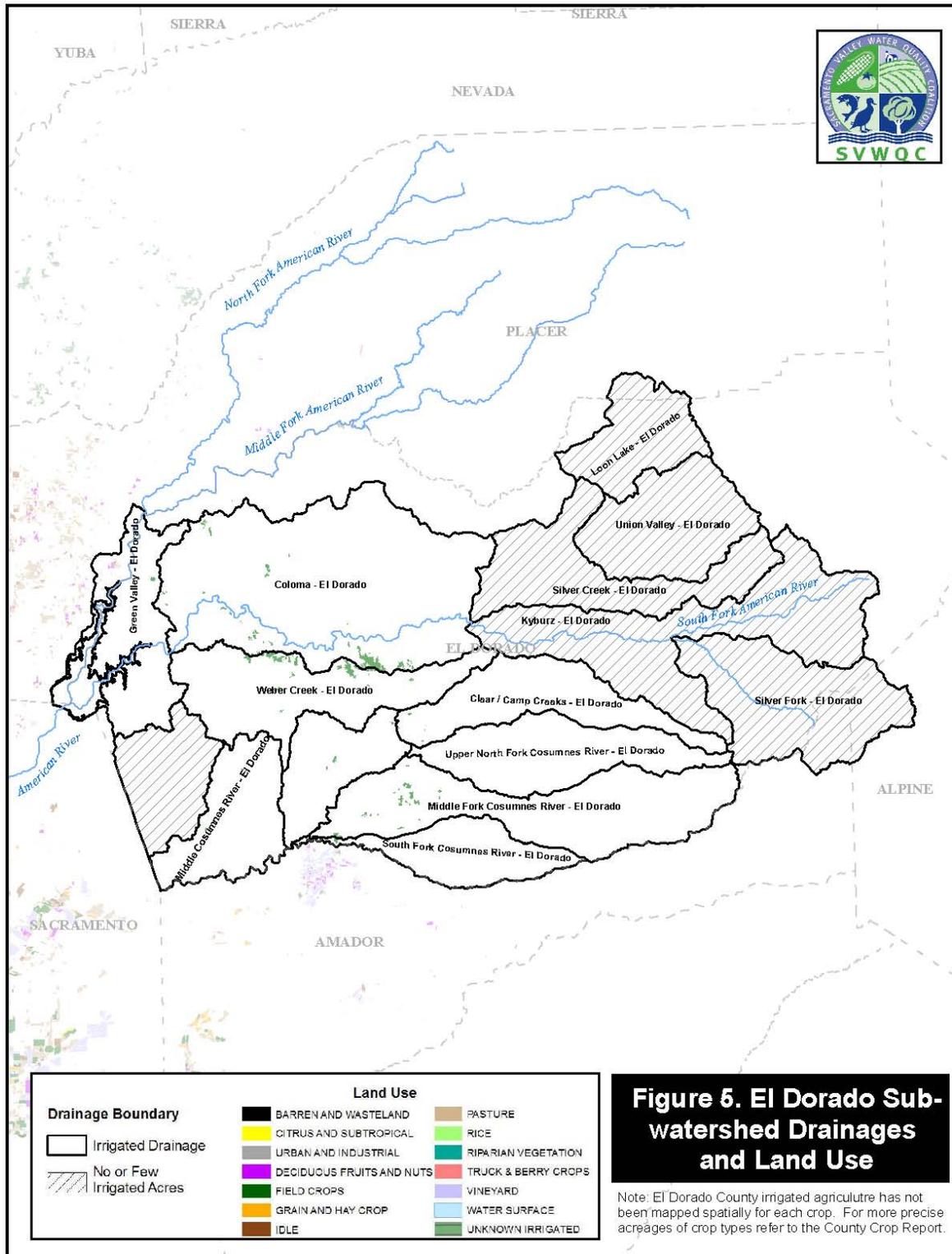
The El Dorado Subwatershed encompasses approximately 1.1 million acres in the two primary river watersheds—South Fork American River and Cosumnes River—of El Dorado County, extending from the crest of the Sierra Nevada mountains west to Folsom Lake and from the Cosumnes River north to the Rubicon River ~~(Figure 1)~~. The topography is characterized by mountainous terrain with elevations ranging from approximately 400 to 10,000 feet above sea level. More than 55% (636,000 acres, *El Dorado County DRAFT General Plan EIR, Section 5.12 Biological Resources, EDAW, May 2003*) of the subwatershed consists of native vegetation dominated by conifer forest and oak/grass woodlands. Agricultural use occurs on about 5,000 acres, or 0.5% of the watershed area, and is typically situated at elevations ranging from 1,200 to 3,000 feet above sea level.

El Dorado Subwatershed encompasses nine main drainages where irrigated agriculture is present. Table 54 lists the drainages by name and the crops grown within each drainage area. Figure 5¹ shows the area of the nine drainages.

Table 54. El Dorado Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|---------------------------------|--|
| Monitoring site in North Canyon Creek | Coloma | Winegrapes, apples, pears, peaches, plums, berries, olives, irrigated pasture, Christmas trees |
| Represented by North Canyon Creek monitoring site | Clear & Camp Creeks | Winegrapes |
| | Green Valley | Winegrapes, irrigated pasture |
| | Lower North Fork Cosumnes River | Winegrapes, walnuts, Christmas trees |
| | Middle Cosumnes River | Winegrapes, walnuts, Christmas trees |
| | Middle Fork Cosumnes River | Winegrapes, walnuts, Christmas trees |
| | South Fork Cosumnes River | Winegrapes, walnuts |
| | Upper North Fork Cosumnes River | Winegrapes |
| | Weber Creek | Winegrapes, olives, irrigated pasture, Christmas trees |

¹ NOTE – The figure numbers in each map starting with “Figure 5” will be corrected in the adopted version of the Order and this footnote removed. There is not a Figure 4.

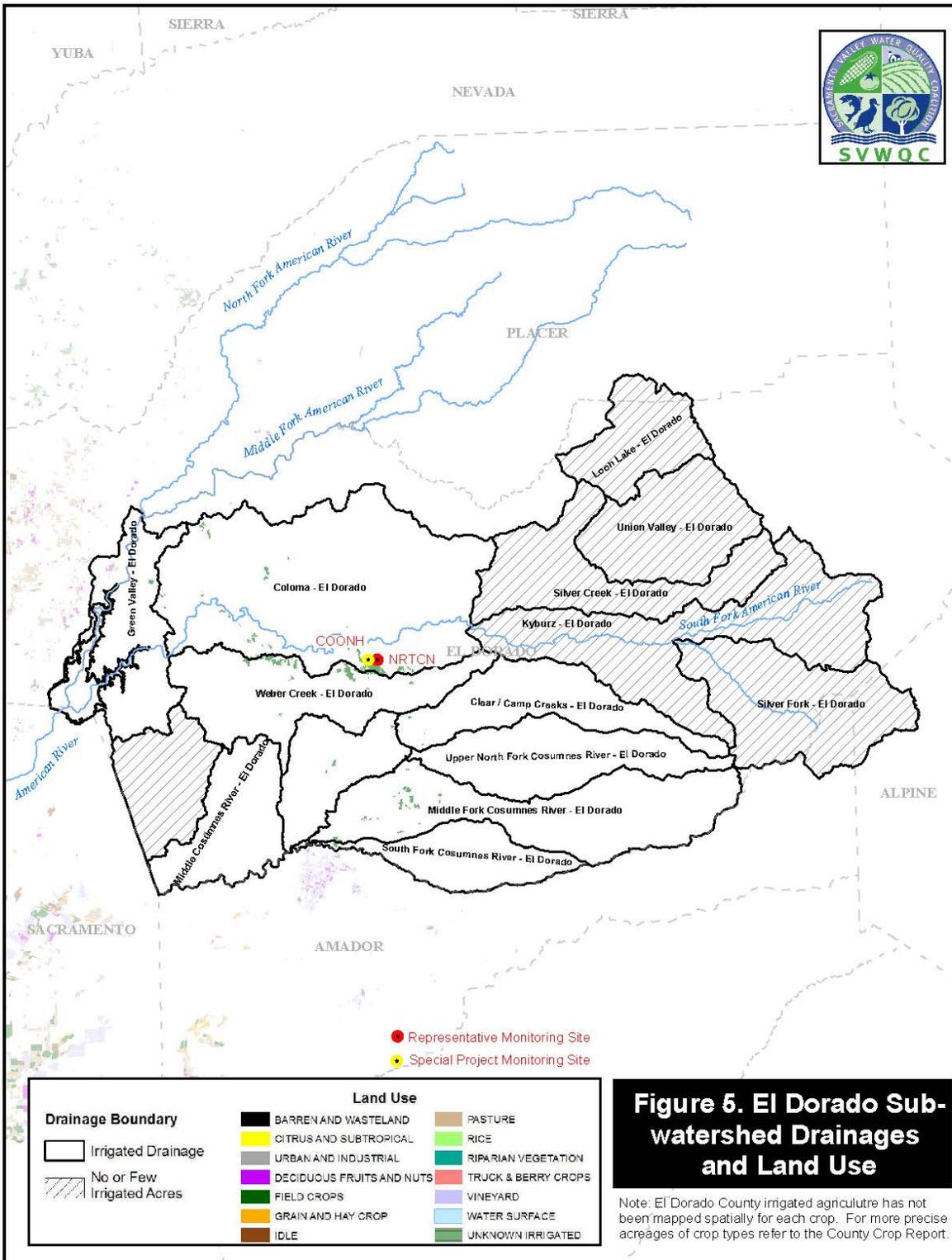


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APPENDIX MRP-3
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 SACRAMENTO RIVER WATERSHED

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Lake- and Napa ~~Subwatershed~~Subwatersheds

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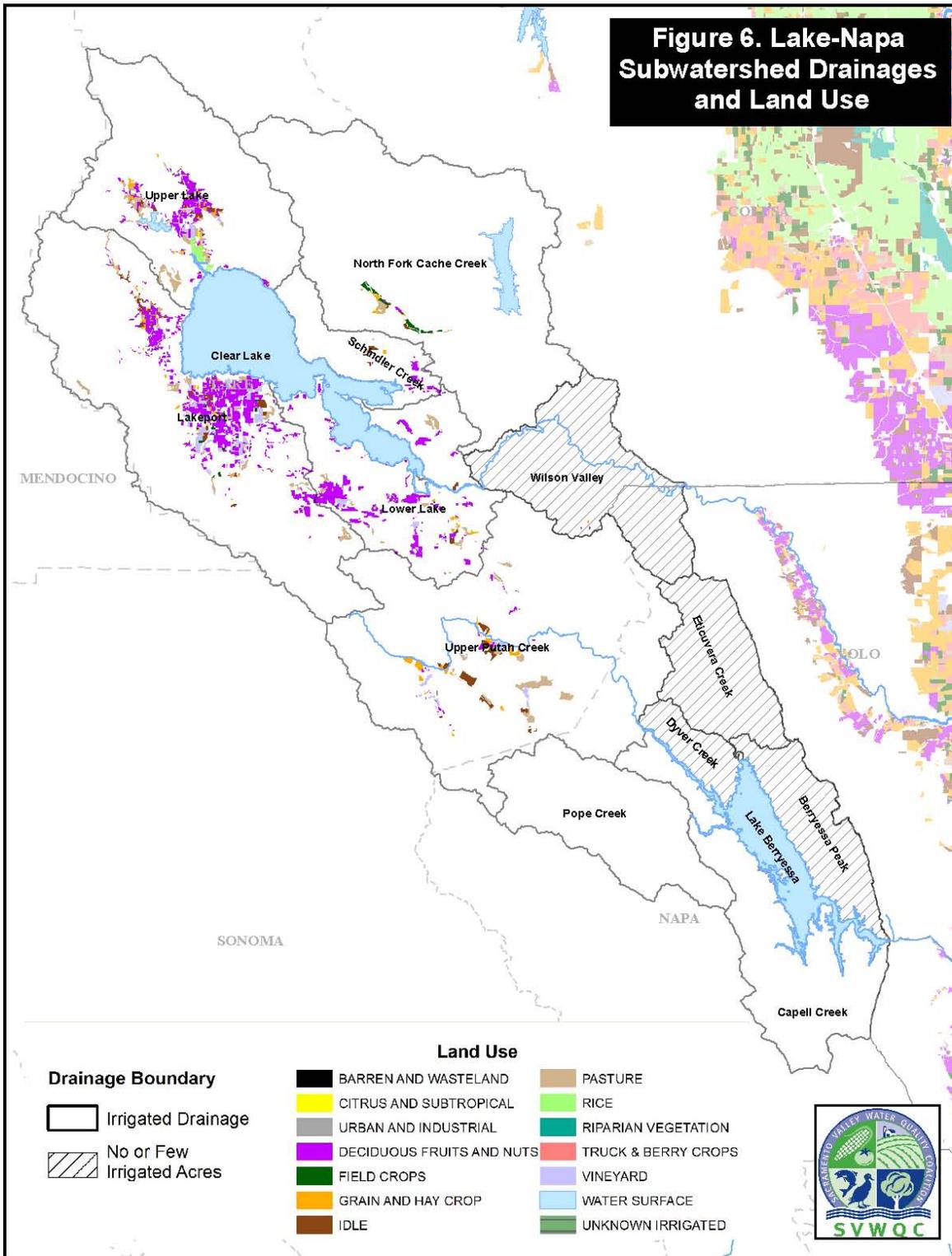
The Lake- ~~and~~ Napa ~~Subwatershed encompasses~~ ~~Subwatersheds encompass~~ approximately 850,000 acres on the southwest side of the Sacramento Valley, and ~~includes~~ ~~include~~ roughly two-thirds of Lake County and one-third of Napa County (Figure 4). ~~This~~ ~~6~~. ~~These~~ subwatershed ~~area is~~ ~~areas are~~ located in the central Coast Range, extending from the Clear Lake watershed in the north to the Lake Berryessa watershed in the south and bordered by northwest-southeast trending ridgelines, ~~and separated by the Lake-Napa county line~~. Topography is characterized by rolling hills and low mountains interspersed with valley areas adjacent to lakes and streams. Elevation ranges from approximately 440 to 4,700 feet above sea level. Irrigated agriculture occurs in a small portion of the Lake- ~~and~~ Napa ~~Subwatershed~~ ~~Subwatersheds~~, with approximately 20,000 acres (<2.5%) currently being farmed. Some dryland farming also occurs in a small proportion of walnut orchards and wine grape vineyards. Other land uses include non-irrigated rangeland, urban and rural residential development, and native woodlands, chaparral, grasslands, and wetlands.

The Lake- ~~and~~ Napa ~~Subwatershed encompasses~~ ~~Subwatersheds encompass~~ eight drainages where irrigated agriculture is present. Table 75 lists the drainages by name and the crops grown within each drainage area. Figure 6 shows the extent of the drainages.

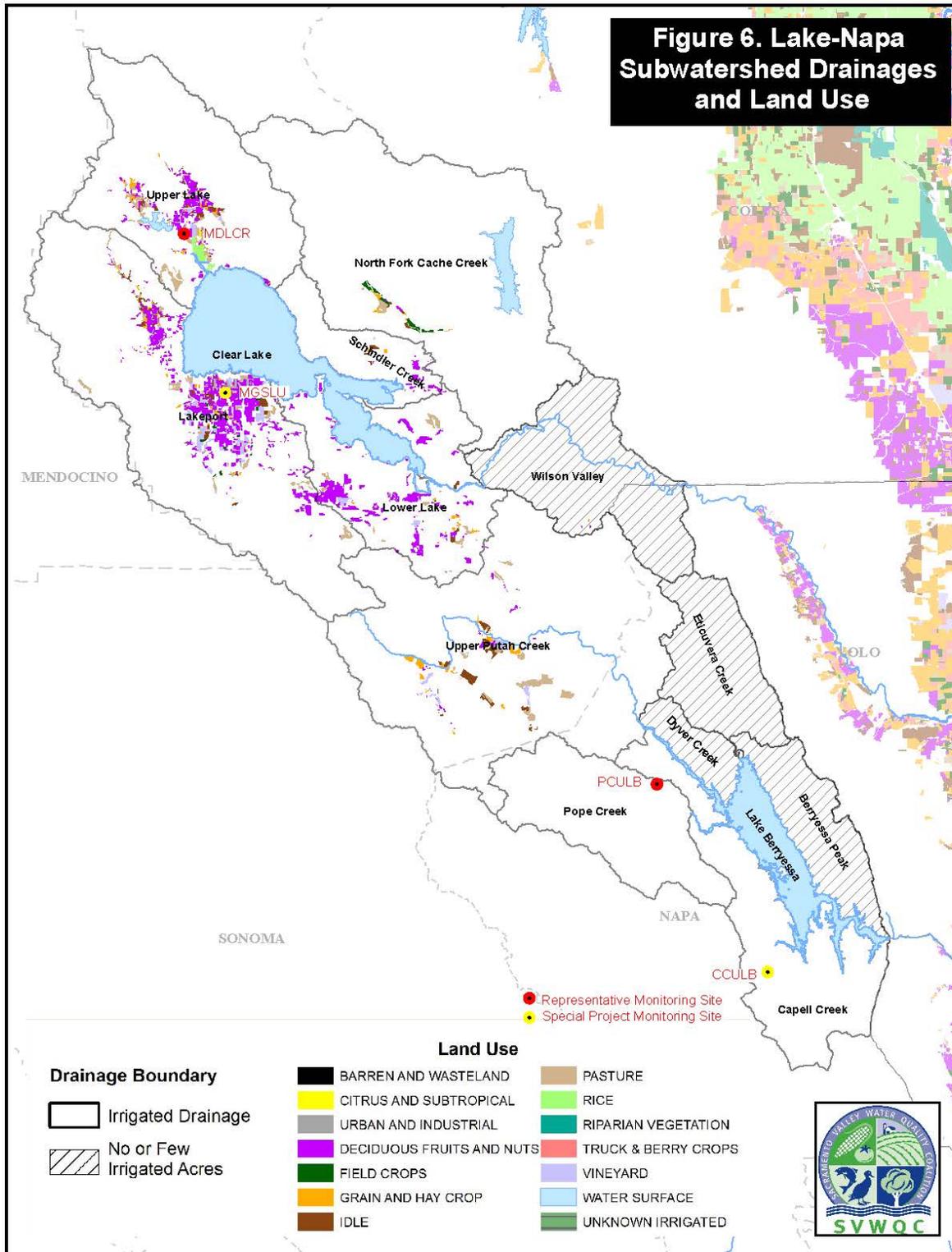
Table 75. Lake-Napa Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|---|--------------------------------------|
| Monitoring site in Middle Creek | Upper Lake (Middle Creek) (Lake County) | Walnuts, pears, wine grapes, pasture |
| Represented by Middle Creek monitoring site | Lakeport | Walnuts, pears, wine grapes, pasture |
| | Lower Lake | Walnuts, pears, wine grapes, pasture |
| | Upper Putah Creek | Walnut, wine grapes, pasture |
| | Schindler Creek | Walnuts |
| | North Fork Cache Creek | Walnuts, wine grapes |
| Monitoring site in Pope Creek | Pope Creek (Napa County) | Wine grapes |
| Represented by Pope Creek monitoring site | Capell Creek | Wine grapes |

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Upper Pit River Subwatershed

The Upper Pit River Subwatershed encompasses approximately 2,767,000 acres, extending from the Warner Mountains along the South Fork Pit River, to Shasta Lake in Shasta County (Figure 1). The subwatershed includes portions of Modoc, Lassen and Shasta counties. The topography is characterized by mountainous terrain with elevations ranging from approximately 3,200 to 9,833 feet above sea level. The low gradient of valley floors throughout the watershed is attributed to the deposition of large amounts of volcanic material. Approximately 44% of the acreage is privately owned, with predominant uses in production agriculture (ranching, hay/alfalfa, and wild rice), timber, and livestock grazing, while 56% of the subwatershed is held by federal and state agencies. It is estimated that 152,196 irrigated acres of privately owned land are currently in production.

The Upper Pit River Subwatershed encompasses 23 main drainages where irrigated agriculture is present. Table 96 lists the drainages by name and the crops grown within each area. Figure 7 shows the location and relative extent of the drainages.

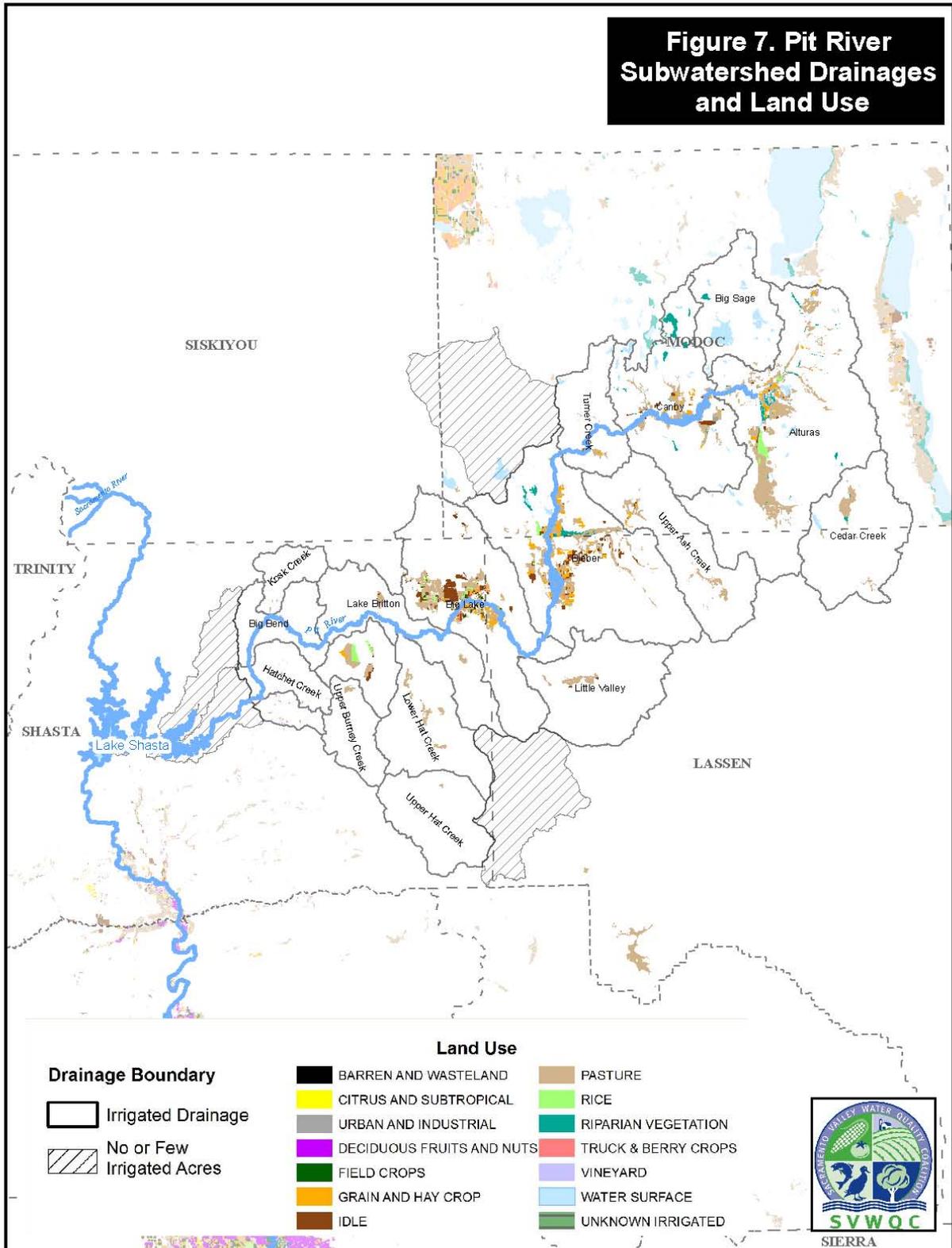
Table 96. Upper Pit River Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|--------------------|---|
| Monitoring site in Pit River at Pittville | Big Lake | Pasture, rice, oats, wheat grain and hay, idle |
| Represented by Pit River at Pittville monitoring site | Bieber | Pasture, grain and hay, barley |
| | Alturas | Pasture, rice, oats, wheat, grain and hay, marsh |
| | Canby | Pasture, grain and hay, barley |
| | Lower Burney Creek | Pasture, rice, grain and hay, nursery, idle |
| | Upper Ash Creek | Pasture, grain and hay, barley, general field crops |
| | Lower Hat Creek | Pasture, nursery |
| | Little Valley | Pasture, idle |
| | Lake Britton | Pasture |
| | Cedar Creek | Pasture, grain and hay, barley |
| | Upper Burney Creek | Pasture |
| | Turner Creek | Pasture, grain and hay, barley, general field crops |
| | Montgomery Creek | Pasture |
| | Big Sage | Pasture, grain and hay, barley |
| | Hatchet Creek | Pasture |
| | Pondosa | Pasture |
| | Upper Hat Creek | Pasture |
| | Kosk Creek | Pasture |
| | Squaw Valley | Pasture |
| | Big Bend | Pasture |
| Dunsmuir | Pasture | |

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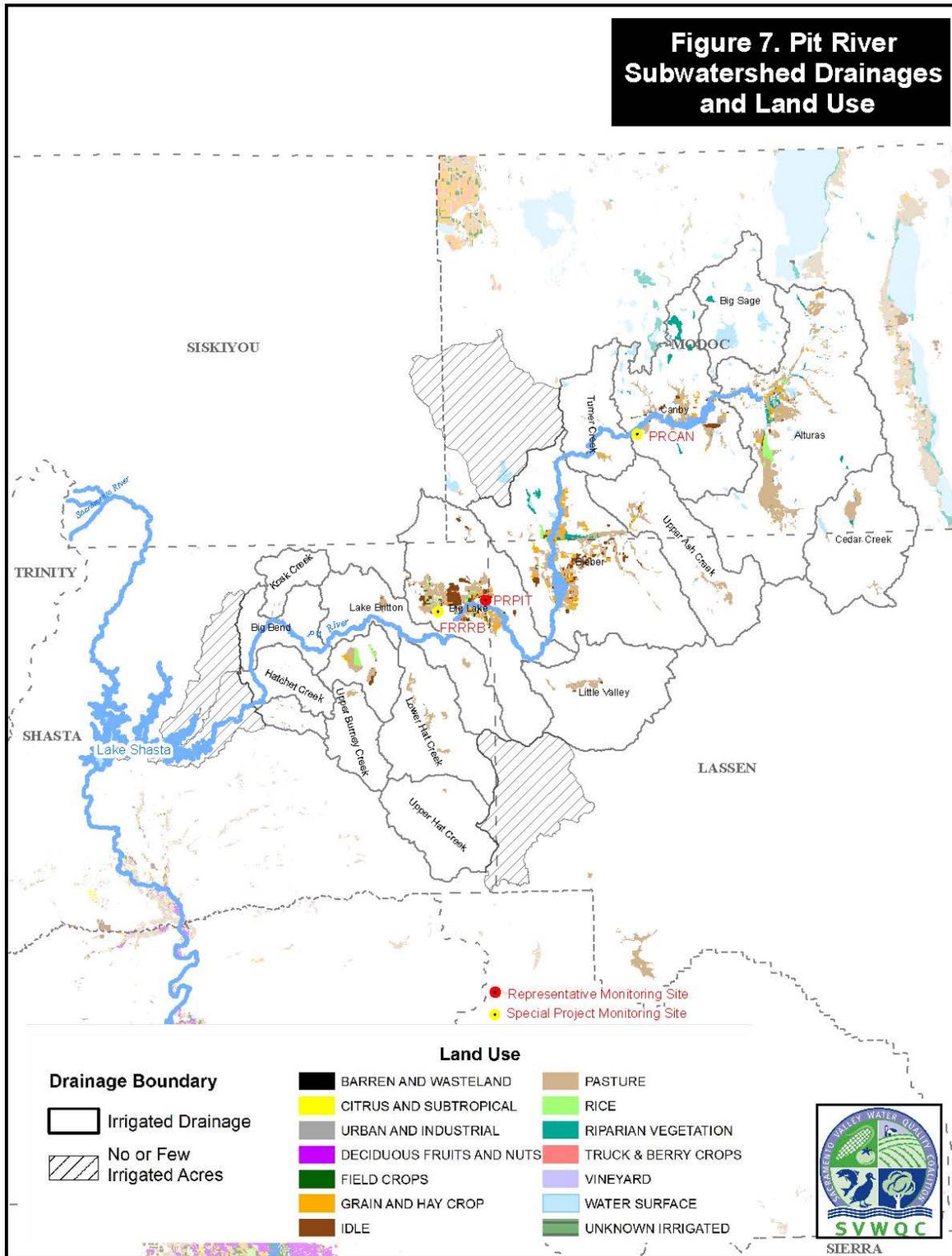
| Type of Monitoring | Drainages | Crops |
|--------------------|---------------------|---------|
| | Sweetbriar Creek | Pasture |
| | Lower McCloud River | Pasture |

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Placer-Nevada-South Sutter-North Sacramento Subwatershed

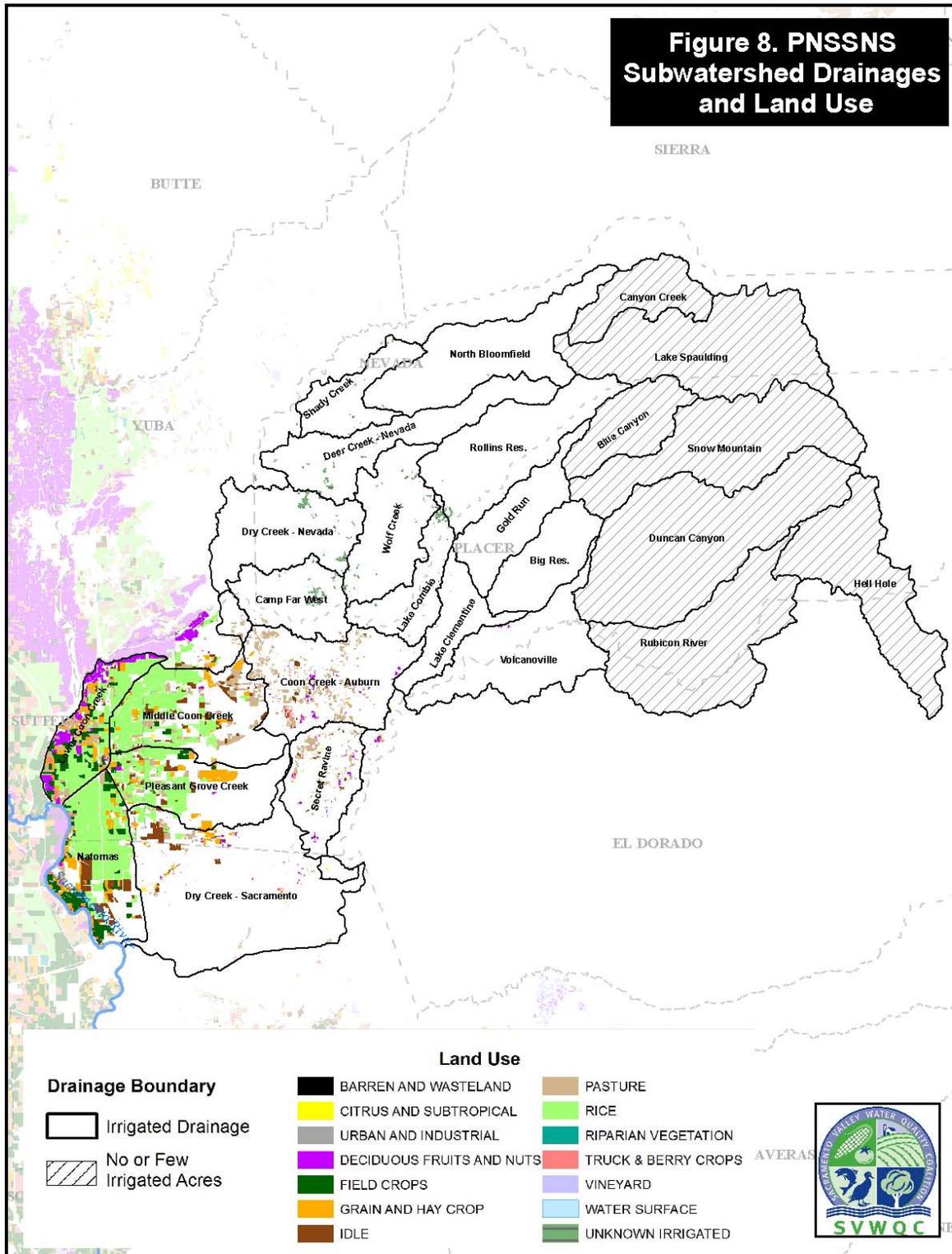
The Placer-Nevada-South Sutter-North Sacramento (PNSSNS) Subwatershed encompasses approximately 1.17 million acres in the southeast portion of the Sacramento Valley, and includes most of Placer and Nevada Counties, and roughly one-fifth and one-quarter of Sutter and Sacramento counties, respectively (Figure 1). About 38% (447,000 acres) of the watershed (Gold Run, Blue Canyon, Hell Hole, Snow Mountain, Rubicon River, and Duncan Canyon drainages) has no irrigated acreage. In general, the subwatershed area is bounded on the east by the Sierra Nevada Range, on the west by the Yolo Causeway and the Sacramento River, on the north by the Yuba and Bear rivers, and on the south by the Rubicon River and the American River. Topography varies from a relatively flat valley floor, to rolling foothills and volcanic buttes, to steep forested mountains and deep river canyons. Elevation ranges from approximately 30 to 7,000 feet above sea level, although irrigated cropland does not generally occur above 3,000 feet. The majority of irrigated agriculture occurs in the southwest area of the PNSSNS Subwatershed, with approximately 162,000 acres currently being farmed, of which about 72,000 acres is in rice. Some dryland grains are also grown, typically in rotation with other field crops. Other land use types include non-irrigated grazing rangeland, urban and rural residential development, and coniferous forests, oak woodlands, grasslands, and wetlands.

The PNSSNS Subwatershed encompasses 16 different drainages where irrigated agriculture is present. Table 447 lists the drainages by name and the crops grown within each drainage area. Figure 8 shows the extent of the drainages.

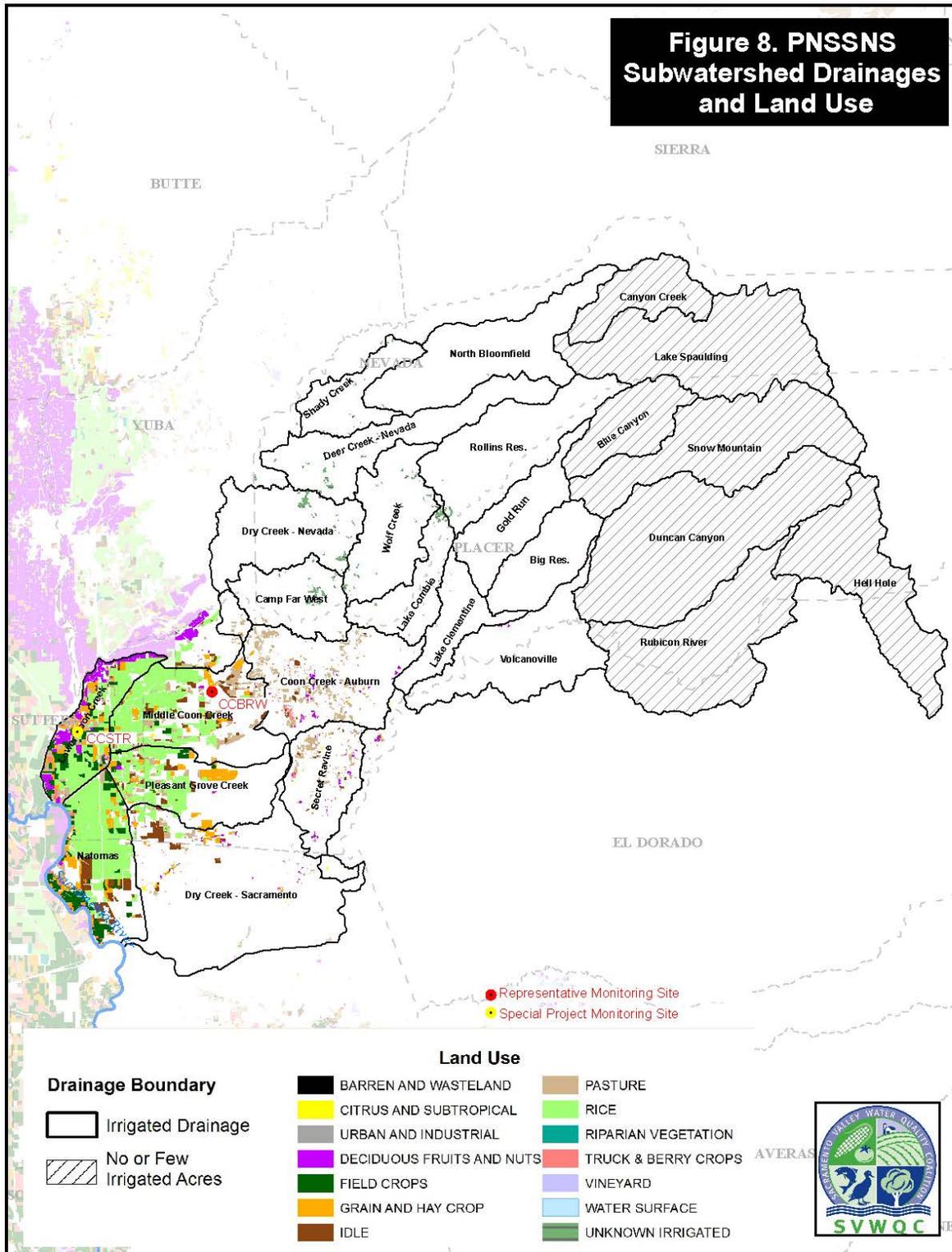
Table 447. PNSSNS Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|------------------------|--|
| Monitoring site in Coon Creek | Middle Coon Creek | Rice, pasture, grain, sudan, walnuts, corn |
| Represented by Coon Creek monitoring site | Lower Coon Creek | Rice, grain pasture, walnuts, corn |
| | Natomas | Rice, grain, corn |
| | Pleasant Grove Creek | Rice, grain, pasture, corn |
| | Coon Creek – Auburn | Pasture |
| | Dry Creek – Sacramento | Rice, pasture, grain |
| | Secret Ravine | Pasture |
| | Volcanoville | Walnuts |
| | Lake Clementine | Pasture, corn |
| | Camp Far West | Pasture, wine grapes |
| | Wolf Creek | Pasture |
| | Dry Creek – Nevada | Pasture, wine grapes |
| | Lower Bear River | Pasture, grain, rice |
| | Rollins Reservoir | Apples |
| | Shady Creek | Pasture, wine grapes |
| New Bullards Bar | Pasture | |

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Sacramento-Amador Subwatershed

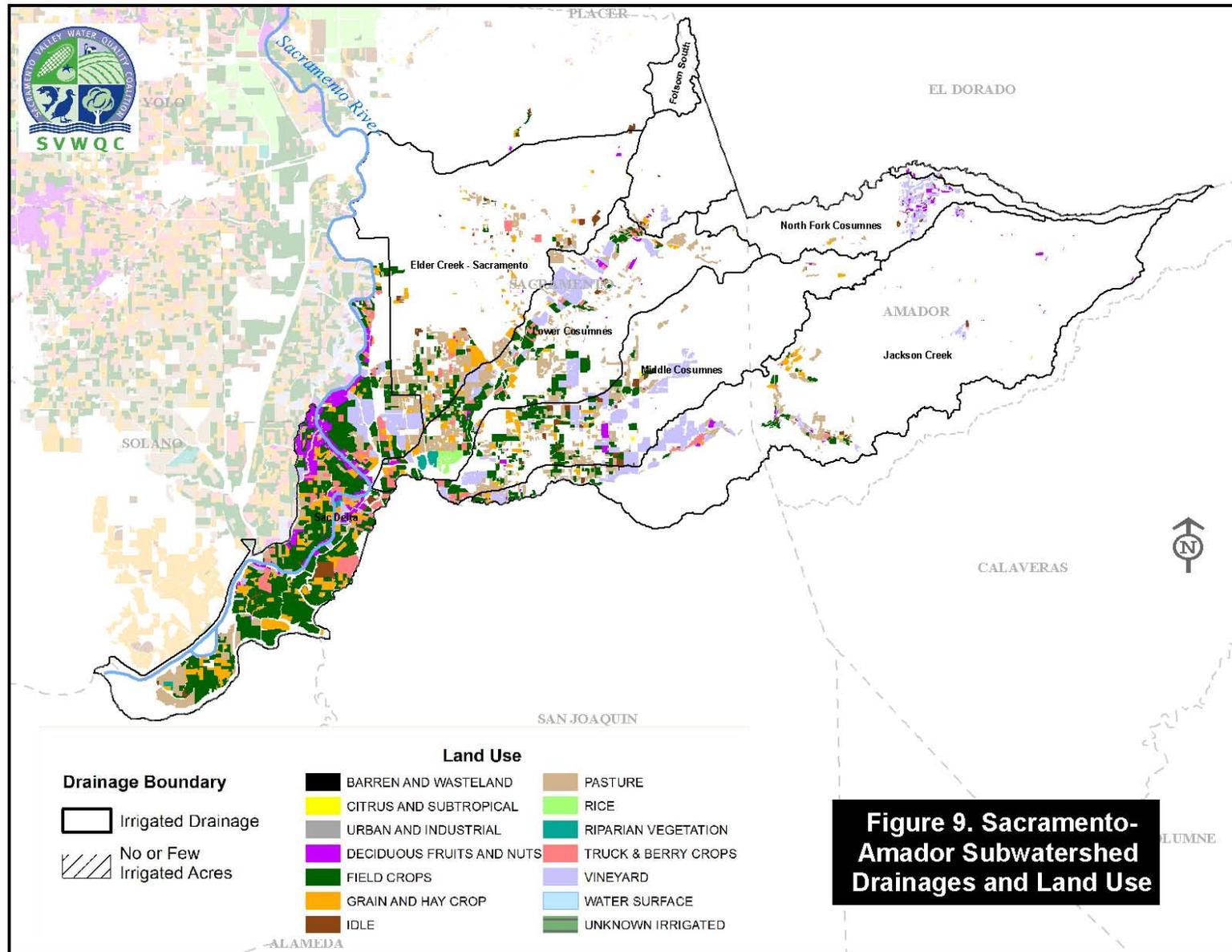
The Sacramento-Amador Subwatershed encompasses approximately 490,000 acres at the south end of the Sacramento Valley and contains roughly three-quarters of Sacramento County and half of Amador County (Figure 1). The subwatershed is generally bounded on the east by the Sierra Nevada foothills, on the west by the Sacramento River, on the north by the lower American River (in part) and the Cosumnes River (in part), and on the south by the Mokelumne River. Moving from west to east, the subwatershed's topography starts out relatively flat in the area of the Sacramento-San Joaquin Delta and alluvial floodplains; it then transitions to low rolling hills and dissected alluvial terraces, tabletop buttes, and escarpments; and ends up in rolling to steep foothills, mesa-like plateaus, and undulating flats and valleys. Elevations range from sea level to approximately 4,500 feet above sea level. Irrigated agriculture occurs in just over 15% of the Sacramento-Amador Subwatershed, with approximately 76,000 acres currently being farmed (Figure 9). Other land use types include non-irrigated rangeland, urban/rural residential development, and oak woodlands, grasslands, chaparral, and wetlands.

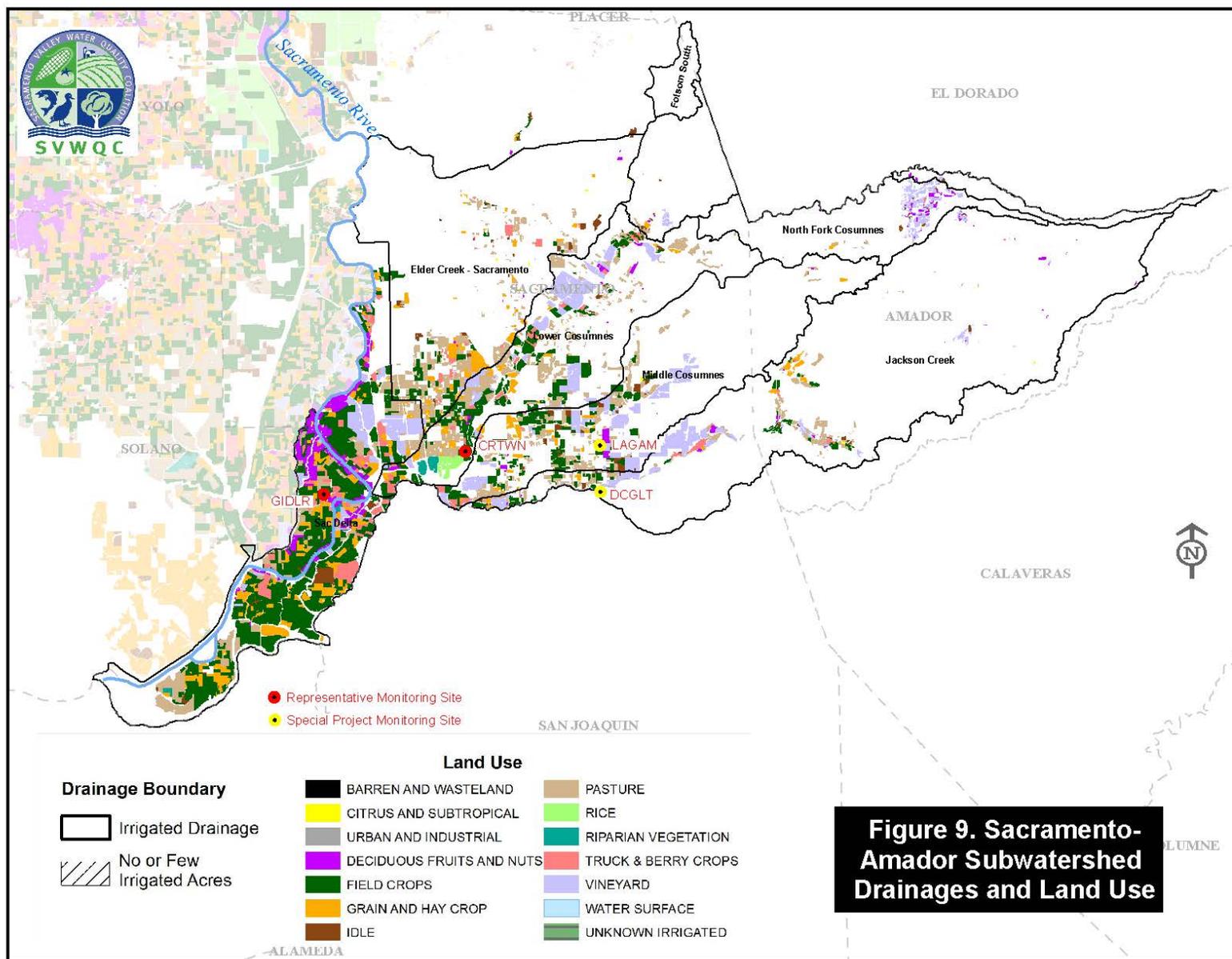
The Sacramento-Amador Subwatershed encompasses eight different drainages where irrigated agriculture is present. Table 138 lists the drainages by name and the crops grown within each drainage area. Figure 9 shows the extent of the drainages.

Table 138. Sacramento-Amador Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|-------------------------------|---|
| Monitoring site in Cosumnes River | Lower Cosumnes River | Pasture, wine grapes, corn, grain, sudan, orchards (pears, cherries, apples, almonds, walnuts, peaches, nectarines, citrus, olives), strawberries |
| Represented by Cosumnes River monitoring site | Middle Cosumnes River | Wine grapes, pasture, corn, grain, sudan |
| | Elder Creek – Sacramento | Pasture, grain, hay |
| | Jackson Creek | Wine grapes, pasture, corn, grain |
| | North Fork Cosumnes River | Wine grapes, walnuts, pasture, grain |
| | Upper Deer Creek – Sacramento | Wine grapes, pasture |
| | Omo Ranch | Wine grapes, walnuts |
| Monitoring site in Grand Island | Grand Island (Delta) | Corn, grain, hay, wine grapes, pears, pasture |

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Shasta-Tehama Subwatershed

The Shasta-Tehama Subwatershed is located in the north central part of California and encompasses approximately 2.7 million acres within Shasta and Tehama counties (Figure 1). These counties are contiguous from north to south and represent a hydrologic unit that is framed by Shasta Dam to the north and the political boundaries associated with Glenn and Butte counties to the south. The subwatershed area is bounded by the convergence of the Klamath and Coastal Mountain Ranges to the west and northwest and the Cascade Mountain Range to the east. The topography varies from the flat valley floor through rolling foothills up to rugged, steep mountains, with elevations ranging from approximately 300 to over 8,000 feet above sea level.

The irrigated acreage of the Shasta-Tehama Subwatershed is dominated by orchards, a diversity of field crops, and irrigated pasture for livestock. These crops comprise approximately 142,000 acres or a little more than 5% of the total acres in the subwatershed, located primarily in the floodplains of the Sacramento River and its tributaries.

The Shasta-Tehama Subwatershed encompasses 35 drainages where irrigated agriculture is present. Table 159 lists the drainages by name and the crops grown within each drainage area. Figure 10 shows the location and relative extent of the drainages.

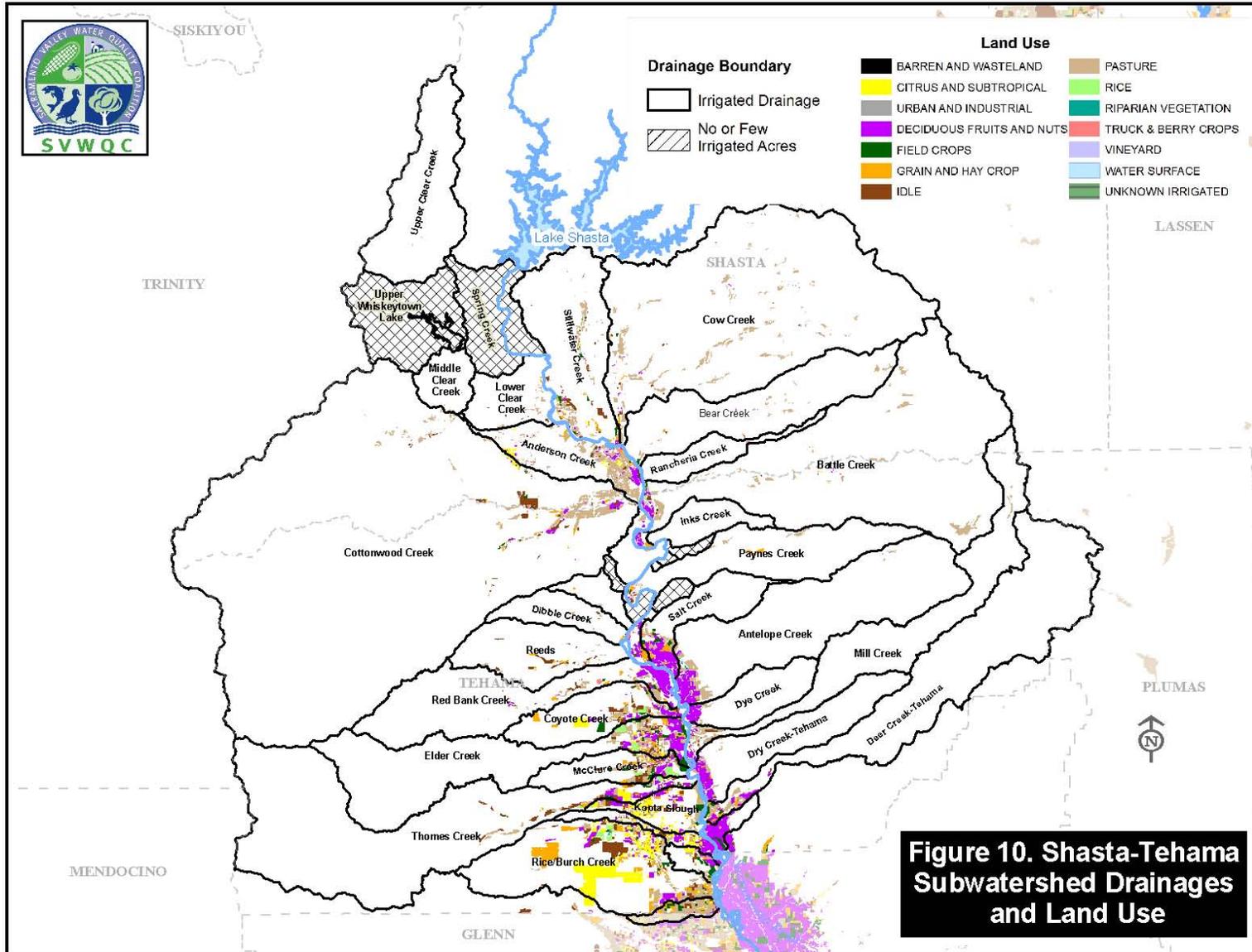
Table 159. Shasta-Tehama Subwatershed Drainages and Crops

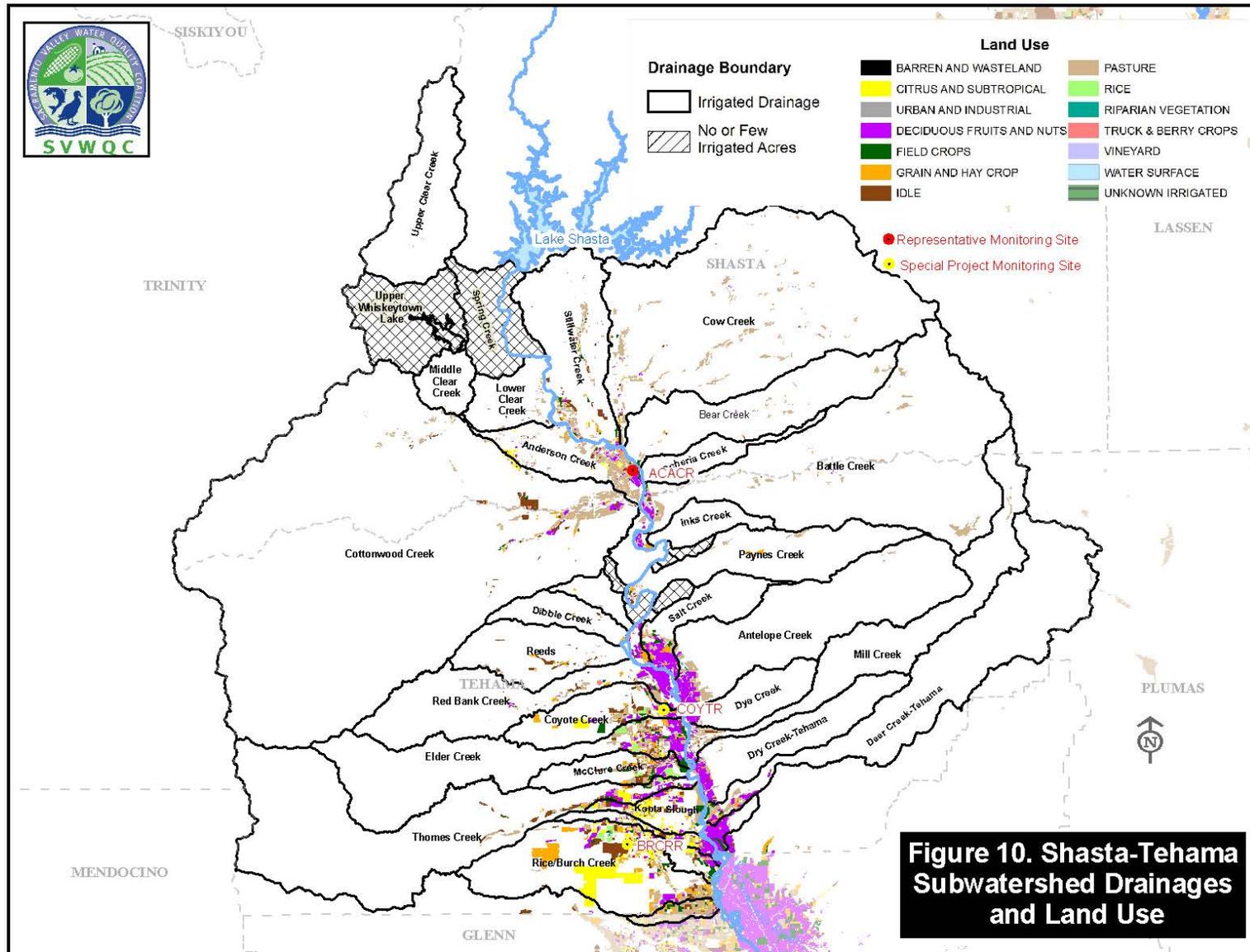
| Type of Monitoring | Drainages | Crops |
|---|--|---|
| Monitoring Site | Anderson Creek | Pasture, Walnuts, Prunes, Olives, Almonds, Eucalyptus |
| Represented by Anderson Creek monitoring site | Rice/Burch Creek | Pasture, Walnuts, Prunes, Almond, Olives, Rice |
| | Elder Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Kopta Slough | Pasture, Walnuts, Prunes, Almond, Olives |
| | Cottonwood Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Salt Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Thomes Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Coyote Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Red Bank Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Antelope Creek | Pasture, Walnuts, Prunes, Olives, Eucalyptus |
| | Jewett Creek | Pasture, Walnuts, Prunes, Almond, Olives |
| | Vina-Hoag N/Dicus Slough | Pasture, Walnuts, Prunes, Almond, Olives, Grains, Safflower |
| | Capay (SE Birch Creek) | Pasture, Prunes, Almond, Olives, Eucalyptus |
| | McClure Creek | Pasture, Walnuts, Prunes, Olives, Eucalyptus |
| | Dry Creek – Tehama | Pasture, Walnuts, Prunes, Olives, Grains |
| | Cow Creek | Pasture, Walnuts, Grains |
| | Battle Creek | Pasture, Walnuts, Prunes, Eucalyptus, Grains |
| Deer Creek – | Pasture, Walnuts, Prunes, Almond, Eucalyptus | |

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| Type of Monitoring | Drainages | Crops |
|--------------------|----------------------------------|---|
| | Tehama | |
| | Stillwater Creek | Pasture, Walnuts, Almonds, Olives, Eucalyptus |
| | Foster Island (NE Birch Ck) | Pasture, Walnuts, Prunes, Olives, Eucalyptus |
| | Dye Creek | Pasture, Walnuts, Prunes |
| | Mill Creek | Pasture, Walnuts, Prunes, Eucalyptus, General Field Crops |
| | Paynes Creek | Pasture, Walnuts, Prunes, Eucalyptus, Grain |
| | Paynes Slough | Pasture, Walnuts, Prunes, Almond, Grain, Wheat |
| | Reeds | Pasture, Olives, Grain, Kiwis, Plums |
| | Jelly School | Pasture, Walnuts, Prunes, Almonds, Eucalyptus |
| | Bear Creek | Pasture, Grain |
| | Lower Clear Creek | Pasture, Grain |
| | Dibble Creek | Pasture, Olives, Wheat |
| | Rancheria Creek | Pasture, Safflower, Strawberries |
| | Blue Tent Creek | Pasture, Grain |
| | Middle Clear Creek | Pasture |
| | Inks Creek | Pasture, Wheat |
| | Upper Clear Creek | Pasture |
| | North and adjacent Paynes Slough | Walnuts |

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Solano- and Yolo SubwatershedSubwatersheds

The Solano- and Yolo Subwatershed encompasses Subwatersheds encompass approximately 872,000 acres on the lower portion and west side of the Sacramento Valley, and includes include all of Yolo County south of Cache Creek and roughly half of Solano County. ThisThese subwatershed area is areas are bounded on the east by the Sacramento River, on the west by the California Coast Ranges, on the north by the Yolo County line, and on the south and southwest by sloughs and wetlands of the Grizzly Island area near the Delta (Figure 1). The two subwatersheds are separated by the Solano-Yolo county line. Topography varies from a nearly level or gently sloping landscape in the eastern region, to rolling hills in the southeast and steep mountainous terrain in the west. Elevation ranges from approximately 10 to 2,800 feet above sea level. The southern portion of Solano County contains a large area of tidal flats and marshland adjacent to Suisun Bay that has been cut into islands by a maze of natural drainage channels. Intensive irrigated agriculture occurs in a large portionportions of the Solano- and Yolo SubwatershedSubwatersheds, with approximately 518,000 acres currently being farmed, with about 14,000 acres in rice. Some dryland grains are also grown, typically in rotation with other field crops. Other land uses include non-irrigated rangeland, urban and rural residential development, and native woodlands, grasslands, and wetlands.

The Solano- and Yolo Subwatershed encompasses Subwatersheds encompass eight main drainages where irrigated agriculture is present. Table 4710 lists the drainages by name and the crops grown within each drainage area. Figure 11 shows the extent of the drainages.

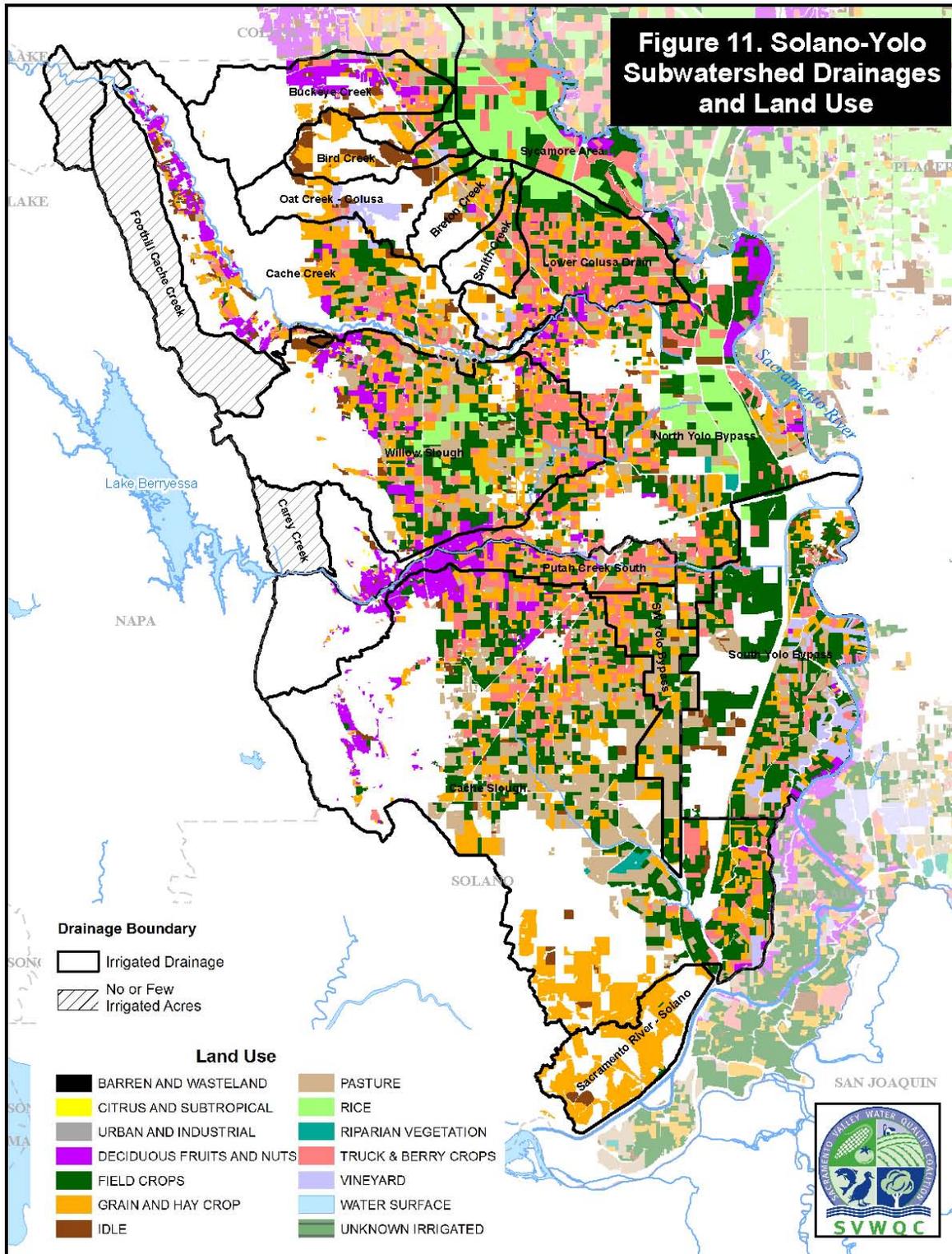
Table 4710. Solano- and Yolo SubwatershedSubwatersheds Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|---|---|--|
| Representative monitoring site to be determined | South Yolo Bypass | Corn, alfalfa, rice, safflower, sunflower, tomatoes, pasture, grain |
| | Southwest Yolo Bypass | Almonds, walnuts, corn, alfalfa, safflower, sunflower, wheat, tomatoes, pasture, grain |
| | Putah Creek South | Almonds, walnuts, tree fruits, wine grapes, corn, alfalfa, safflower, sunflower, wheat, melons, tomatoes, pasture, grain |
| Monitoring site in Ulatis Creek | Cache Slough | Almonds, walnuts, tree fruits, wine grapes, corn, alfalfa, safflower, sunflower, wheat, melons, tomatoes, pasture, grain |
| Represented by Ulatis Creek monitoring site | Sacramento River-Solano Southwest Yolo Bypass | GrainAlmonds, walnuts, corn, alfalfa, safflower, sunflower, wheat, tomatoes, pasture, grain |
| | Putah Creek South | Almonds, walnuts, tree fruits, wine grapes, corn, alfalfa, safflower, sunflower, wheat, melons, tomatoes, pasture, grain |
| | Sacramento River-Solano | Grain, safflower, pasture |
| Monitoring site in Willow Slough | Willow Slough | Grain, alfalfa, pasture, corn, tomatoes, rice, walnuts, almonds, |

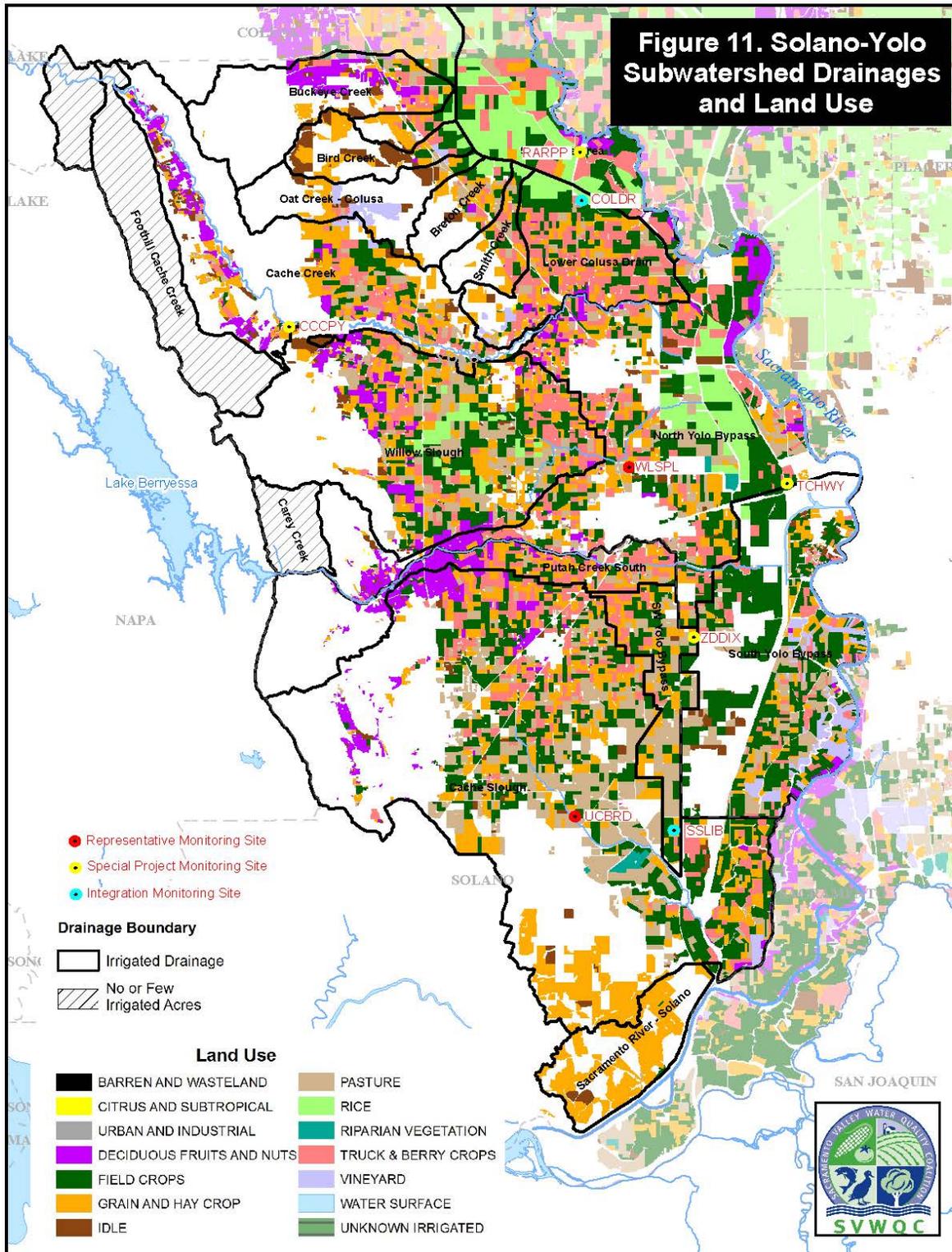
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| | | wheat, sunflower, prunes, |
| Represented by Willow Slough monitoring site | Cache Creek | Almonds, walnuts, prunes, corn, alfalfa, rice, safflower, sunflower, wheat, melons, tomatoes, pasture, grain |
| | North Yolo Bypass | Grain, tomatoes, corn, rice, pasture, safflower |
| | <u>Buckeye Creek</u> | <u>Almonds, tomatoes, pasture, grain</u> |
| | <u>Bird Creek</u> | <u>Grain, rice, melons/squash, corn</u> |
| | <u>Smith Creek</u> | <u>Tomatoes, grain, pasture, corn, rice, melons, squash</u> |
| | <u>Breton Creek</u> | <u>Grain, pasture, rice, tomatoes, safflower</u> |
| | <u>Oat Creek</u> | <u>Grain, rice, safflower, pasture, melons/squash</u> |
| | <u>Meridian Edge</u> | <u>Grain, melons/squash, cotton, tomatoes</u> |
| | <u>South Yolo Bypass</u> | <u>Corn, alfalfa, rice, safflower, sunflower, tomatoes, pasture, grain</u> |

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Upper Feather River Subwatershed

The Upper Feather River Subwatershed encompasses an area of approximately 3,222 square miles that drains west from the northern Sierra Nevada through Lake Oroville and the Feather River to the Sacramento River ~~(Figure 1)~~. The topography is characterized by mountainous terrain with elevations that range from 2,250 to over 10,000 feet above sea level, and annual precipitation that varies broadly from 70 inches on the western slopes to less than 12 inches on the arid east side. The Plumas National Forest manages approximately 50% of the watershed, while alluvial valleys are predominantly privately owned with the dominant land use being livestock grazing. Agriculture accounts for 3.5% of land use in Plumas County and 6.7% of land use in Sierra County within the Upper Feather River Subwatershed region.

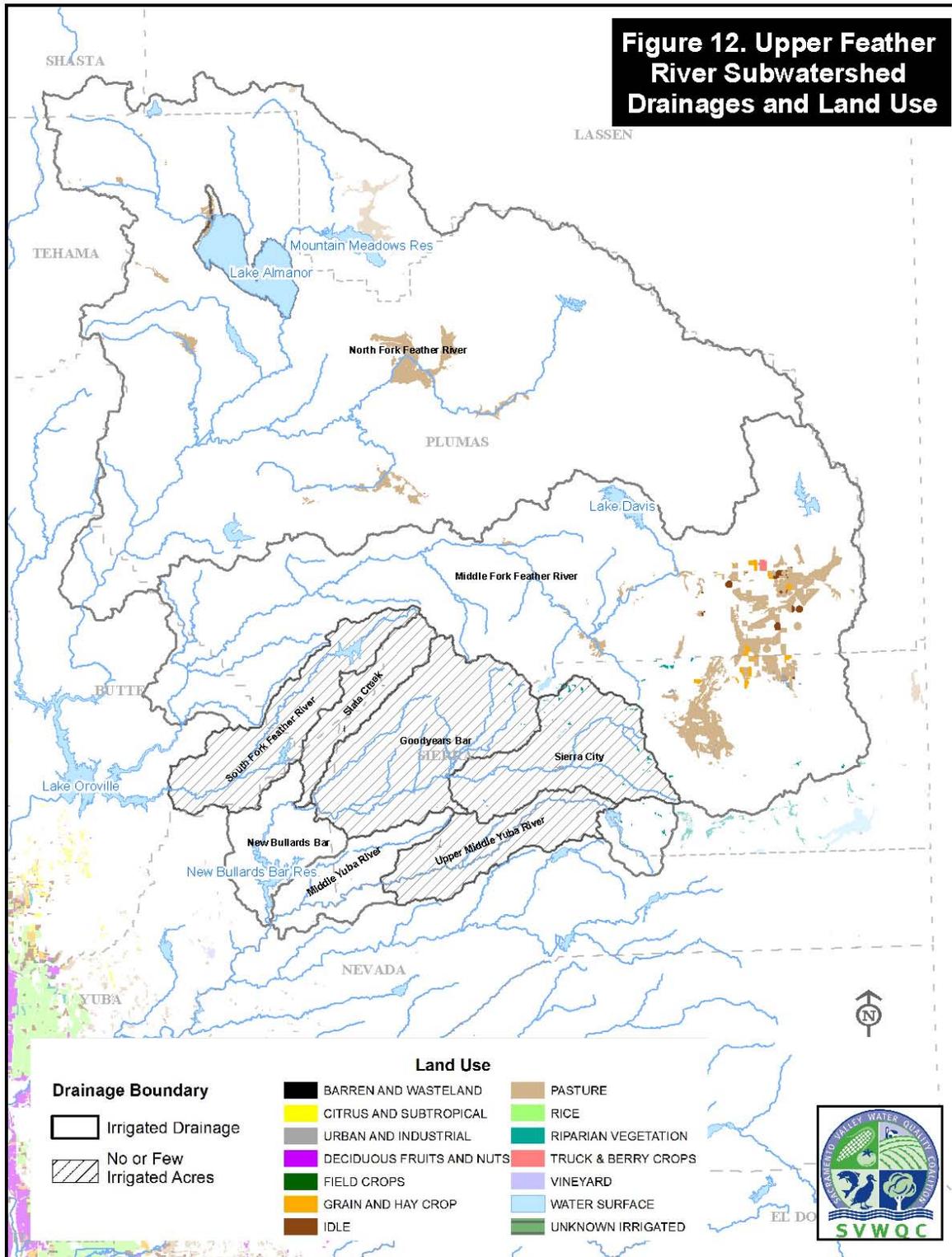
The Upper Feather River Subwatershed is uniquely divided into three distinct agricultural valleys located in Plumas and Sierra Counties: the Sierra Valley, the Indian Valley and the American Valley. Parallel lying valleys separated by low elevation ridges are common throughout the subwatershed. These valleys once contained ancient lakes that are now alluvial meadow systems.

The Upper Feather River Subwatershed encompasses four main drainage areas. Table ~~4911~~ lists the drainages by name and the crops grown within each area. Figure 12 shows the extent of the drainages.

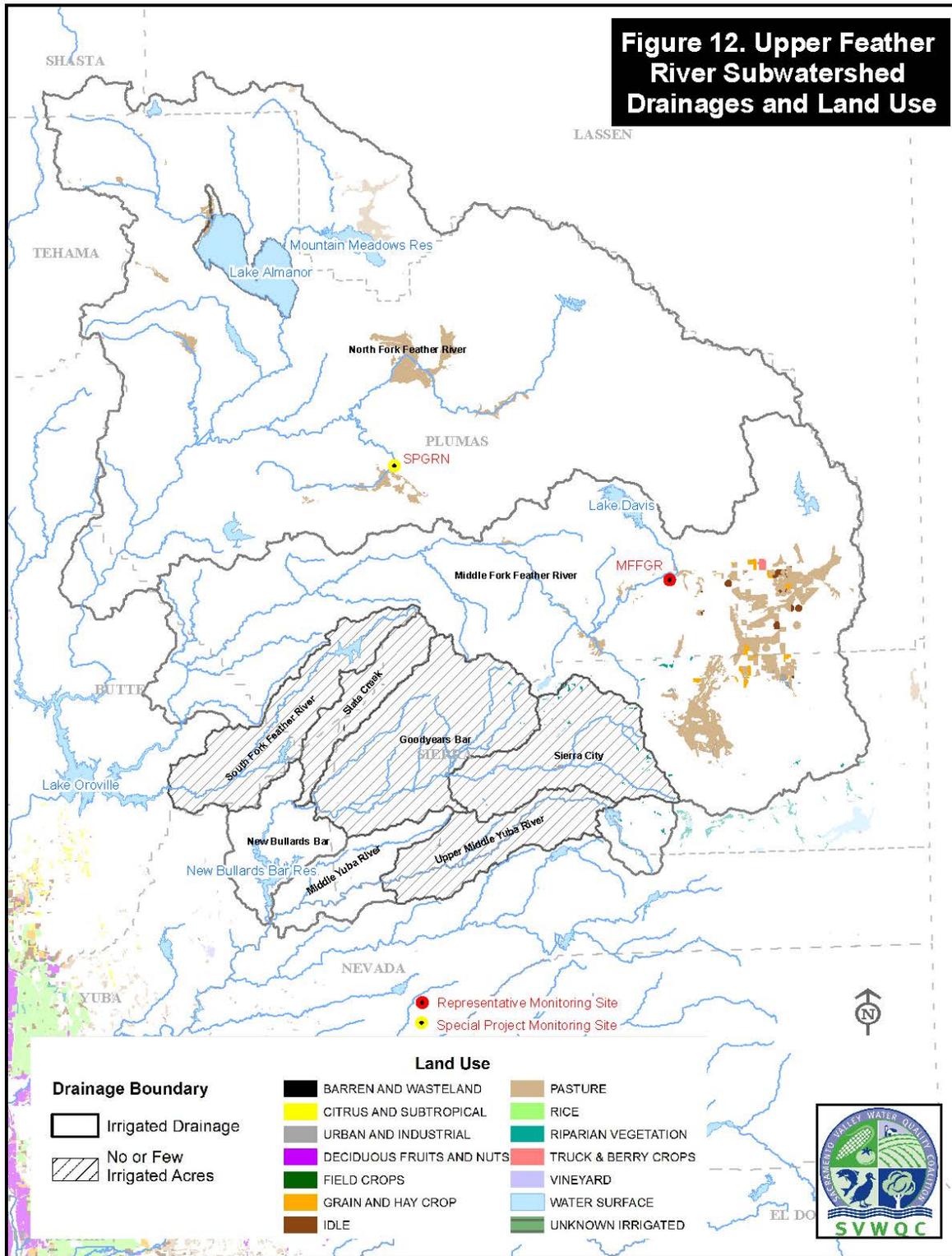
Table ~~4911~~. Upper Feather River Subwatershed Drainages and Crops

| Type of Monitoring | Drainages | Crops |
|--|---|---|
| Monitoring site in Middle Fork Feather River | Middle Fork Feather River Sierra Valley | Pasture, alfalfa, grass hay, grain hay, nursery, Xmas trees |
| Monitoring site in Spanish Creek | North Fork Feather River American Valley | Pasture, alfalfa, grass hay, oats, wheat |
| Monitoring site in Indian Creek | North Fork Feather River Indian Valley | Pasture, alfalfa, grass hay, oats, wheat |

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Goose Lake Subwatershed

The Goose Lake Basin watershed has been managed for the ILRP through an independent water quality coalition by the Goose Lake Resource Conservation District. Under the current Order (R5-2014-XXXX) this watershed is included in the Sacramento River Watershed.

The Goose Lake Basin watershed stretches across the border between northeastern California and south-Central Oregon. This high desert watershed encompasses 1,140 square miles of land that drains from both the west and the east into Goose Lake, a closed-basin lake system that no longer has a surface outlet to the nearby Pit River. A low, gravelly terrace separates the lake from a marshy meadow. Most of the significant perennial tributary creeks within the California portion of the basin flow westward out of the Warner Mountains toward Goose Lake which itself covers thirteen percent of the entire area of the basin. Elevations within the watershed range from 8,000 feet in the Warner Mountains down to 4,693 feet at average lake level.

Within the California portion of the basin, Lassen and Willow Creek are the major water bodies that flow into Goose Lake. Six additional creeks (Cottonwood, Barnes, Davis, Roberts, Linnville, and Franklin) never reach the lake but instead end in terminal wetlands. These creeks and their tributaries are important for aquatic habitat benefits and aesthetic quality, in addition to contributing to local supplies for agricultural uses. Beneficial uses that have been identified for Goose Lake itself include livestock watering, salmonid fish rearing (for trout), aquatic habitat, aesthetic quality, wildlife and hunting.

There are approximately 7,314 irrigated agricultural acres within the California portion of the Goose Lake Basin. Center-pivot, wheel-line sprinklers and controlled flooding are the current irrigation practices used within the watershed. While a majority of irrigation water is diverted from the basin's creeks flowing out of the Warner Mountains, there are also supplemental wells throughout the watershed that pump from underground aquifers to supplement the surface flow diversions. In low water or drought years, the amount of supplemental water provided by these wells is significant.

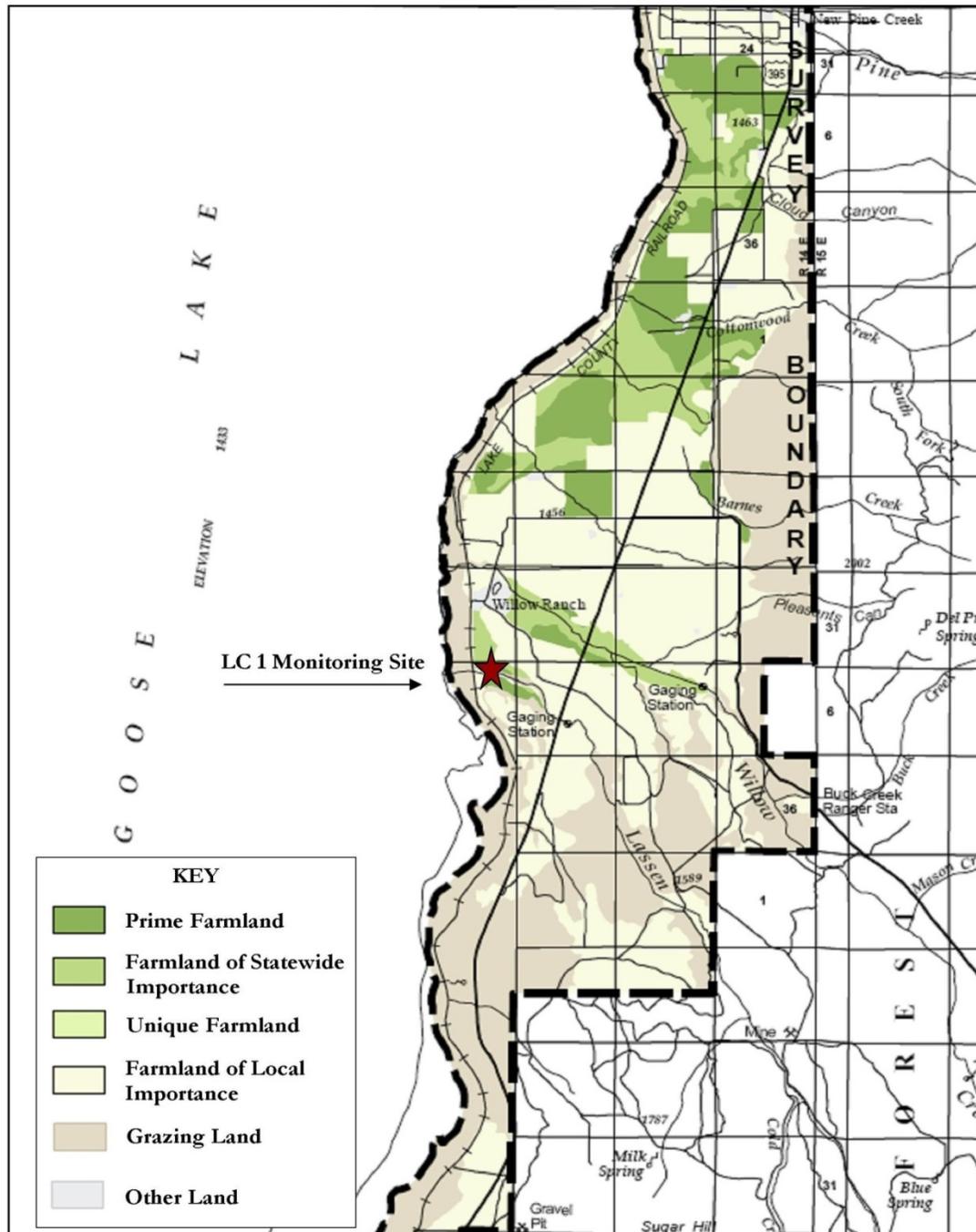
Within the California portion of the Goose Lake Basin, approximately 50 percent of the land is privately owned, with land use having changed little over the last 70 years. Private lands are used predominately for livestock grazing, but are also important for both irrigated and dryland hay production. Major crops types include alfalfa hay, orchardgrass hay, native meadow hay, and irrigated pasture. The remainder of the land is publicly owned and is predominately managed by the U.S. Forest Service and the Bureau of Land Management (BLM). These public lands are managed for multiple-use with livestock grazing and dispersed recreation being two of the most predominant uses. Overall, less than four percent of the land area of the basin is cultivated, while fertilizer and pesticide use is minimal.

Goose Lake Monitoring

The primary site for the Coalition's Core Monitoring program continues to be the Lower Lassen Creek (LC 1) sampling site which is located below all irrigated agriculture activities in the Lassen Creek watershed. Because the agriculture, irrigation, and management practices are homogeneous throughout the Goose Lake Basin, the Regional Water Board approved the LC 1 site in 2008 as being representative of the Coalition's area as a whole.

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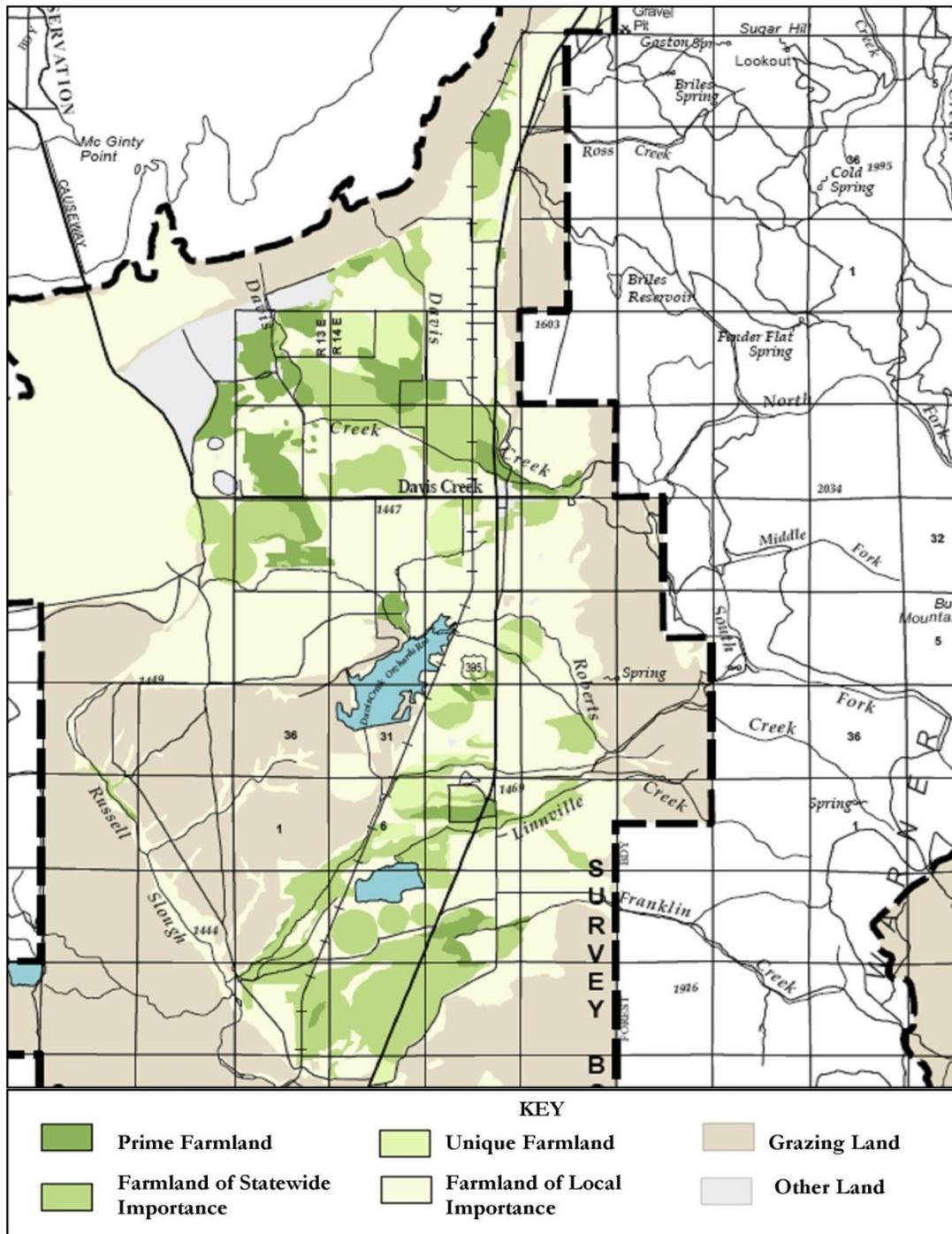
Figure 13. Irrigated land in the Goose Lake subwatershed, north area.



Base map source: California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2008. www.conservation.ca.gov

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Figure 14. Irrigated land in the Goose Lake subwatershed, south area.



Base map source: California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2008. www.conservation.ca.gov

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