Basin Plan Amendment for Development of OC TMDLs in Central Valley Waterbodies CEQA Scoping Meeting Handout

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San Joaquin River (SJR) Watershed

Sacramento River Basin

Sacramento-San Joaquin Delta

Discussion Topics

- **What are the range of alternatives this project should consider?**
- **What are the potentially significant environmental impacts of the project?**
- **Do you know of any measures to mitigate any significant environmental impacts of the proposed amendment?**

Table 1. 2006 303(d) Listings for OC Pesticides in the Central Valley

Name	Watershed	Pollutant[1]	Size
San Joaquin River (Mendota pool to Bear Creek)	San Joaquin River Basin	DDT Group A Pesticides[2]	88 miles
San Joaquin River (Bear Creek to Mud Slough)		DDT Group A Pesticides	14 miles
San Joaquin River (Mud Slough to Merced River)		DDT Group A Pesticides	3 miles
San Joaquin River (Merced River to Tuolumne River)		DDT Group A Pesticides	29 miles
San Joaquin River (Tuolumne River to Stanislaus River)		DDT Group A Pesticides	8. 4 miles
San Joaquin River (Stanislaus River to Delta Boundary)		DDT Group A Pesticides Toxaphene	3 miles
Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)		Group A Pesticides	60 miles
Stanislaus River, Lower		Group A Pesticides	59 miles
Orestimba Creek (Below Kilburn Road)		DDE	2. 7 miles
Orestimba Creek (Above Kilburn Road)		DDE	9. 1 miles
Merced River, Lower (McSwain Reservoir to San Joaquin River)		Group A Pesticides	50 miles
Feather River, Lower (Oroville Dam to confluence with Sacramento River)	Sacramento River Basin	Group A Pesticides	42 miles
Colusa Basin Drain		Group A Pesticides	42 miles
Delta Waterways (Stockton Ship Channel)	Sacramento-San Joaquin Delta	DDT Group A Pesticides	1,603 Acres
Delta Waterways (Eastern portion)		DDT Group A Pesticides	2,792 Acres
Delta Waterways (Western portion)		DDT Group A Pesticides	14,524 Acres
Delta Waterways (Southern portion)		DDT Group A Pesticides	3,125 Acres
Delta Waterways (Northern portion)		DDT Group A Pesticides	6,795 Acres
Delta Waterways (Central portion)		DDT Group A Pesticides	11,425 Acres
Delta Waterways (Export area)		DDT Group A Pesticides	583 Acres
Delta Waterways (Northwestern portion)		DDT Group A Pesticides	2,587 Acres

[1] Source of OC pesticides in the three Central Valley Watersheds is principally from agriculture.

[2] Group A Pesticides include one or more of the following compounds: Aldrin, Dieldrin, Endrin, Chlordane, Lindane, heptachlor, heptachlorepoxide, Endosulfan and Toxaphene.

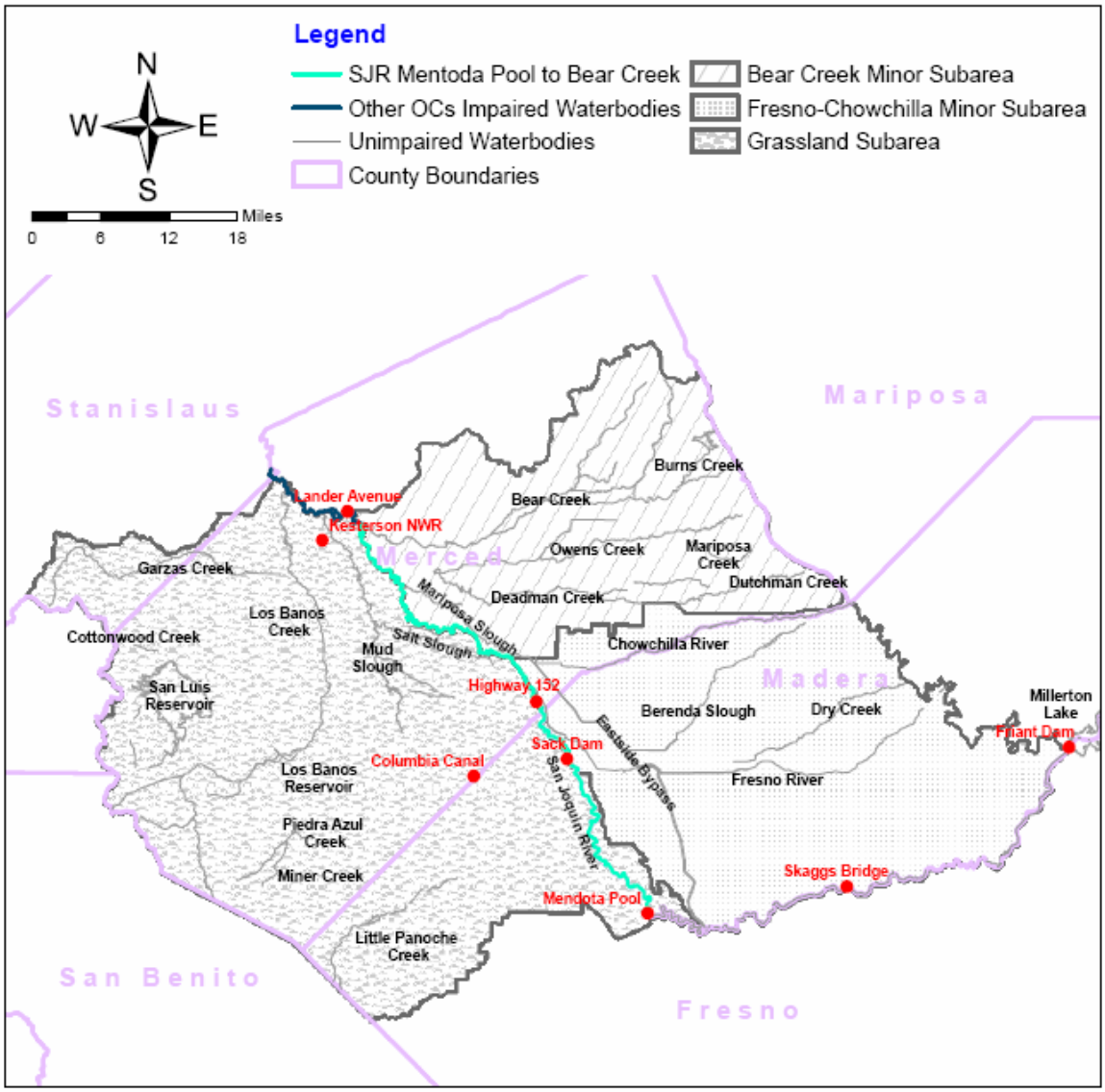

Fig. 1. Impaired Reach: San Joaquin River from the Mendota Pool to Bear Creek

Description of watershed draining to Impaired Reach

The SJR is OC-impaired for 88 miles from the Mendota Pool to the Bear Creek reach. This reach flows through portions of the Bear Creek, Chowchilla River and Fresno River watersheds that are contained within Merced and Madera Counties (Fig. 1). The western boundary of this reach is comprised of the Grassland subarea which drains approximately 1,370 square miles through portions of Merced, Stanislaus, and Fresno Counties in the Lower SJR. Portions of Mud Slough, Salt Slough, and Los Banos Creek watersheds drain to this reach as well. The principal land uses in the subareas surrounding this impaired reach are agriculture and grassland.

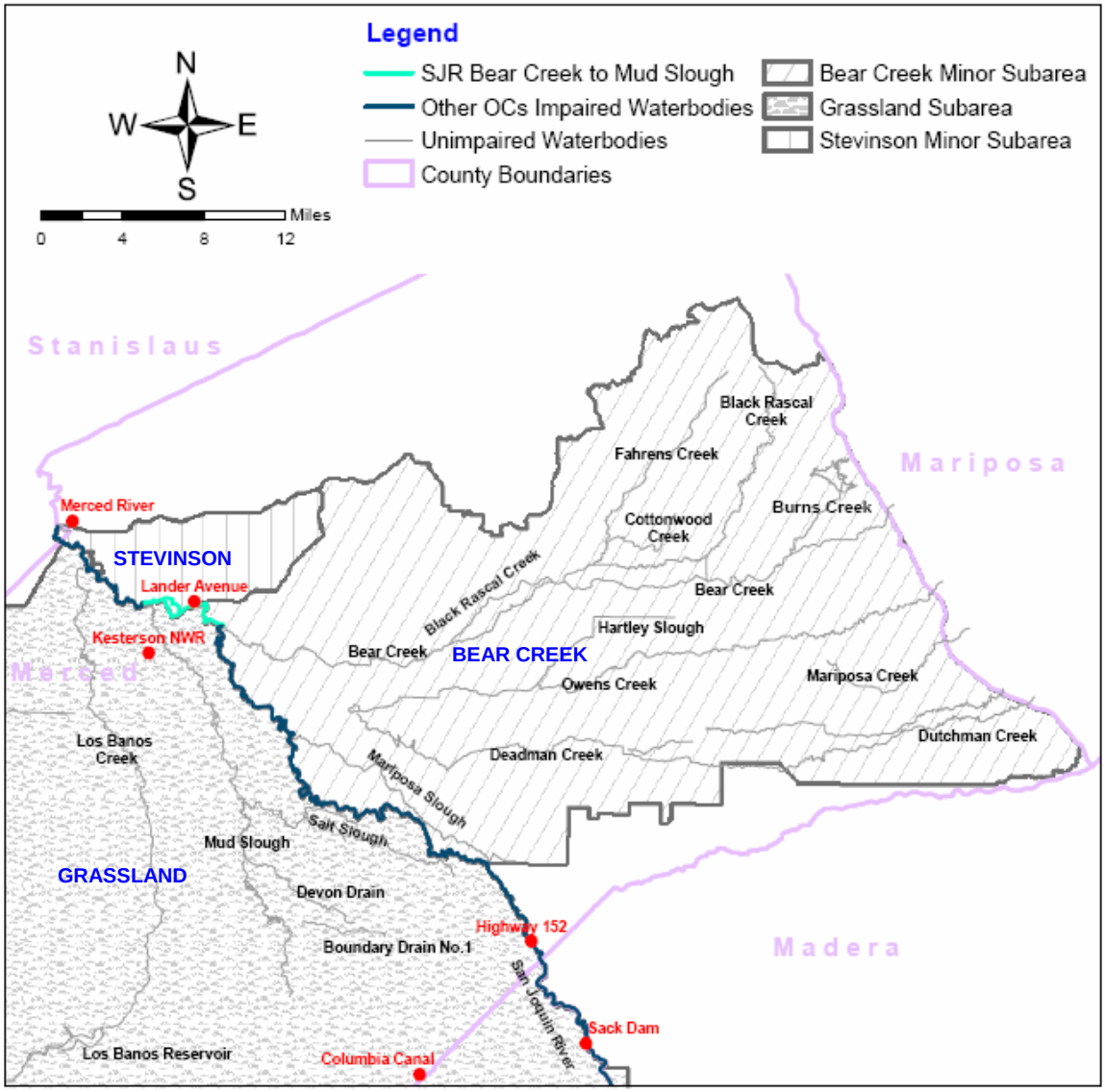

Fig. 2. San Joaquin River from Bear Creek to Mud Slough

Description of watershed draining to Impaired Reach

The SJR is OC-impaired for 14 miles from the Bear Creek confluence to the Mud slough confluence. The eastern part of this reach is the Bear Creek watershed in Merced County and adjacent to the Stevinson minor subarea. This minor subarea occupies approximately 44 square miles in north-central Merced County (Fig. 2). The impaired reach also shares its western border with the Grassland subarea. The Bear Creek to Mud Slough reach also receives drainage from upstream areas in the Mendota pool to Bear Creek reach that has been described previously. The major land uses in the subareas surrounding this reach are agriculture and grassland.

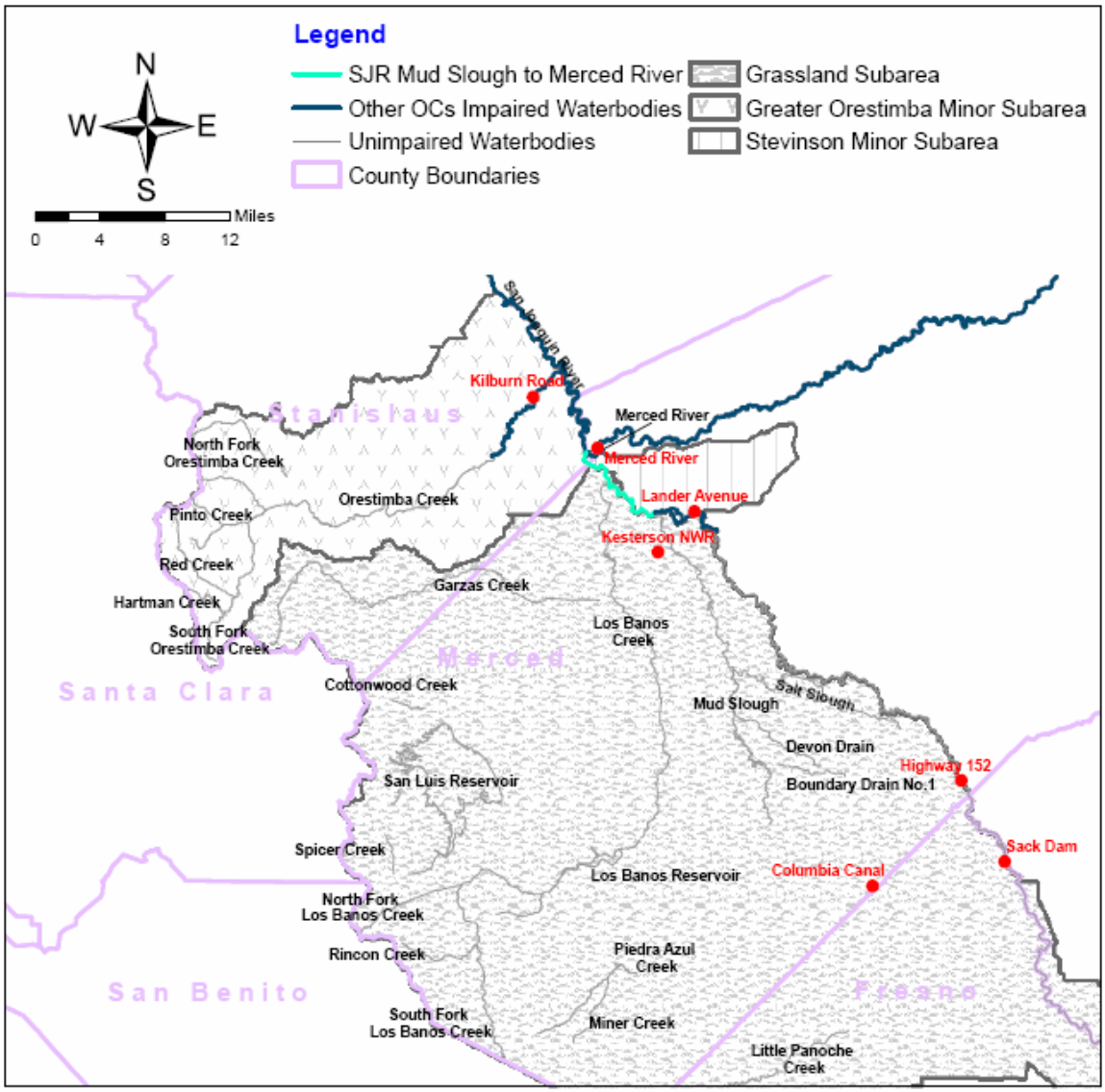

Fig. 3. San Joaquin River from Mud Slough to Merced River

Description of watershed draining to Impaired Reach

The SJR is OC-impaired for three miles from the Mud Slough confluence to Merced River confluence. The watershed draining this impaired reach includes the western border of the Stevinson minor subarea in north-central Merced county (Fig. 3). This minor subarea which lies in the East Valley Floor has 44 square miles and contains all of the land draining to the Lower SJR between the Merced River confluence and the Lander Avenue (Highway 165) Bridge (Fig. 3). The impaired reach also shares borders on the western side with the Grassland subarea. Drainage in the Mud Slough to Merced River reach includes all the previously described upstream inputs from the Mendota Pool to Bear Creek reach as well as that from Bear Creek to Mud Slough including the Bear Creek and Fresno-Chowchilla watersheds and Grassland subarea. The major landuse in this area is agriculture.

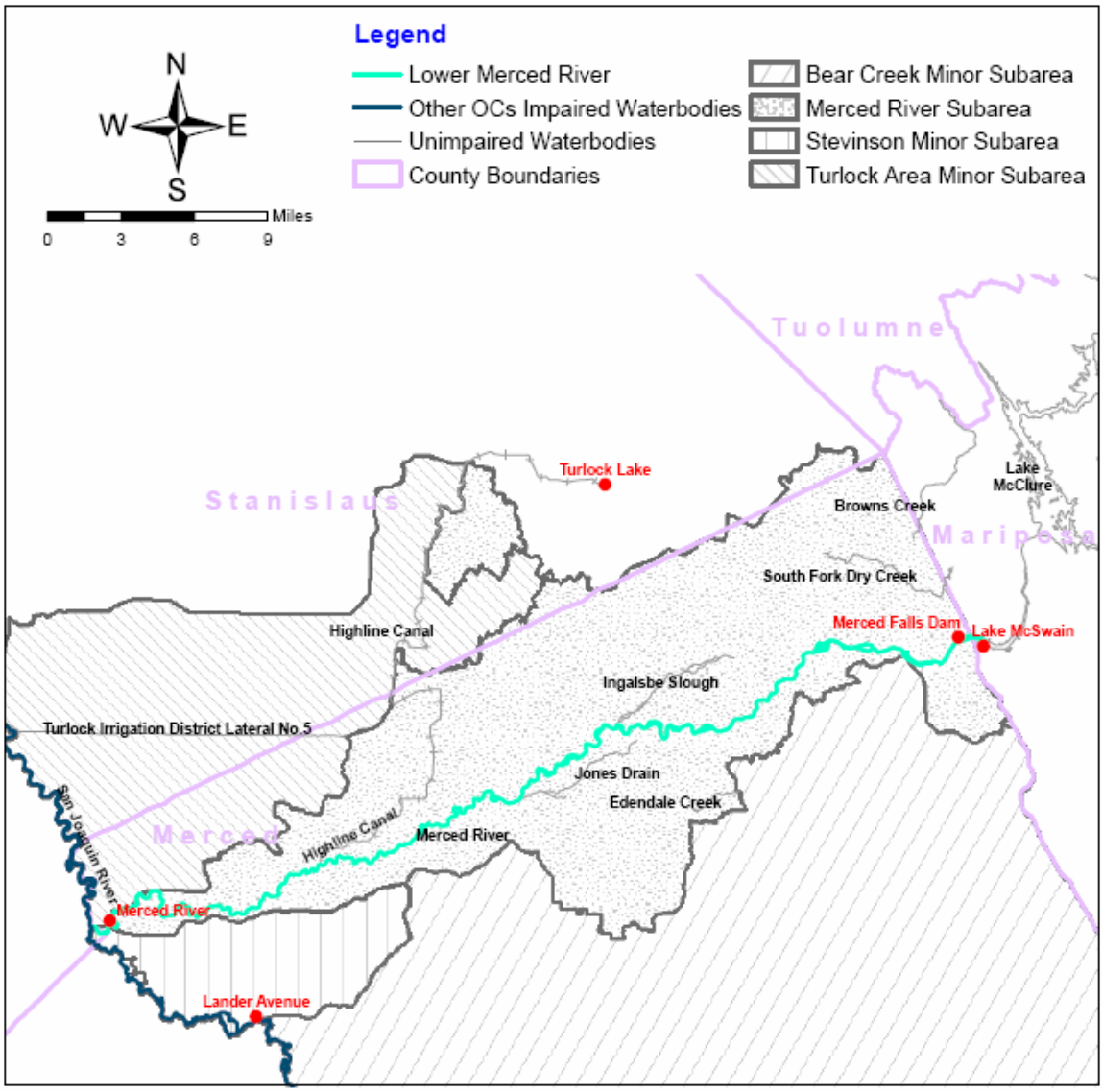

Fig. 4. Lower Merced River from McSwain Reservoir to San Joaquin River

Description of watershed draining to Impaired Reach

The Lower Merced River is OC-impaired for 50 miles from the McSwain Reservoir to the SJR. The Lower Merced River flows southwesterly in Merced County. This reach extends beyond the boundary of the Lower SJR valley floor hydrologic unit into the Merced River hydrologic unit at the confluence with the McSwain reservoir (Fig. 4). The reach traverses almost symmetrically through the Merced River watershed which is about 294 square miles. The Merced River subarea represents the watershed of this reach. To the south of this reach in the Merced subarea lies the Bear creek and Stevison subareas (Fig. 4). The major landuse is agriculture

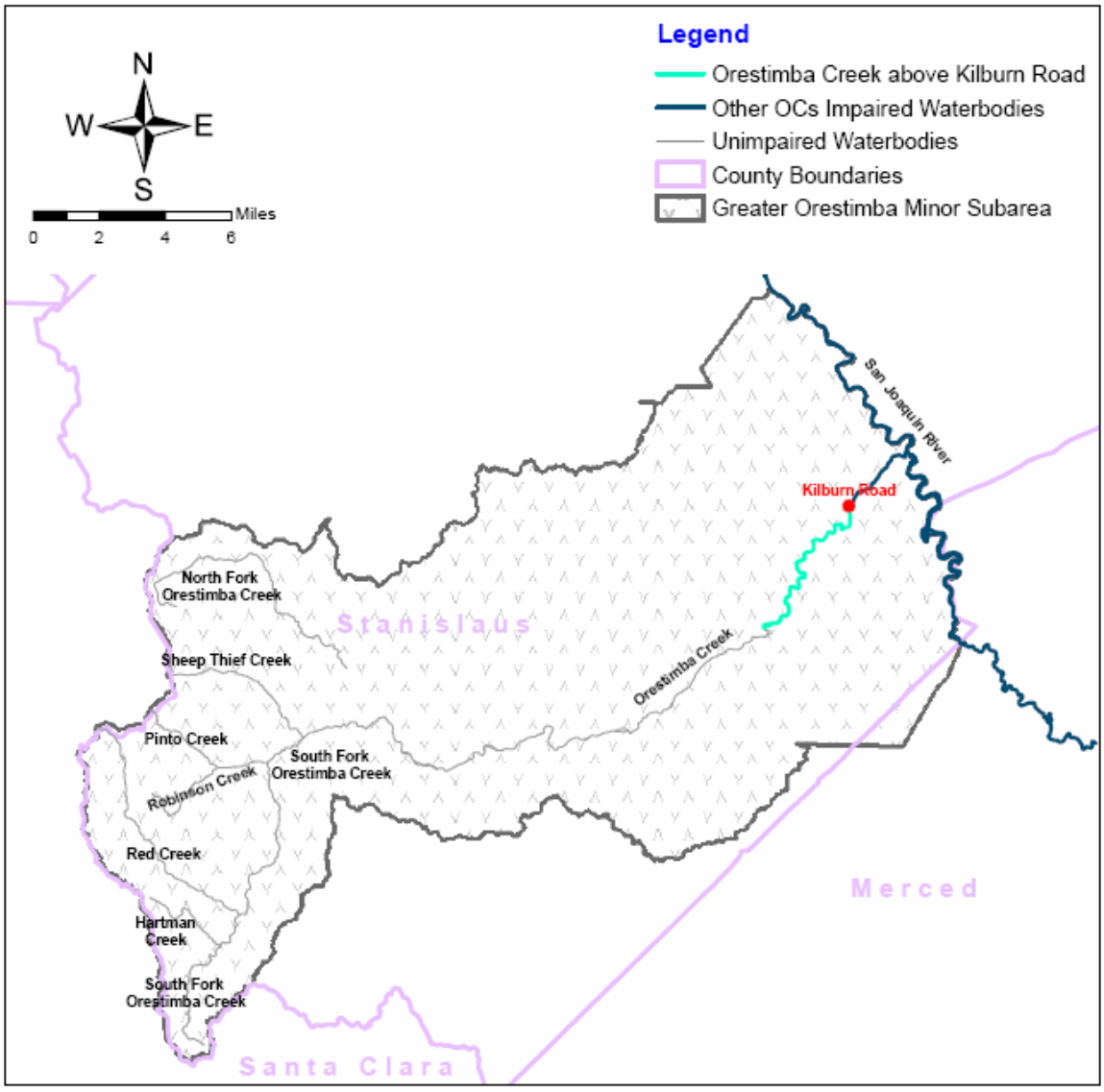

Fig. 5. Orestimba Creek Above Kilburn Road

Description of watershed draining to Impaired Reach

Orestimba Creek is OC-impaired for 9.1 miles above Kilburn Road (Fig. 5) in Stanislaus County and forms part of the Greater Orestimba subarea. The Greater Orestimba subarea is a 285 square mile subset of the Northwest Side subarea located in southwest Stanislaus County and a small portion of western Merced County. The impaired reach drains to the OC-impaired portion of Orestimba Creek below Kilburn Road.

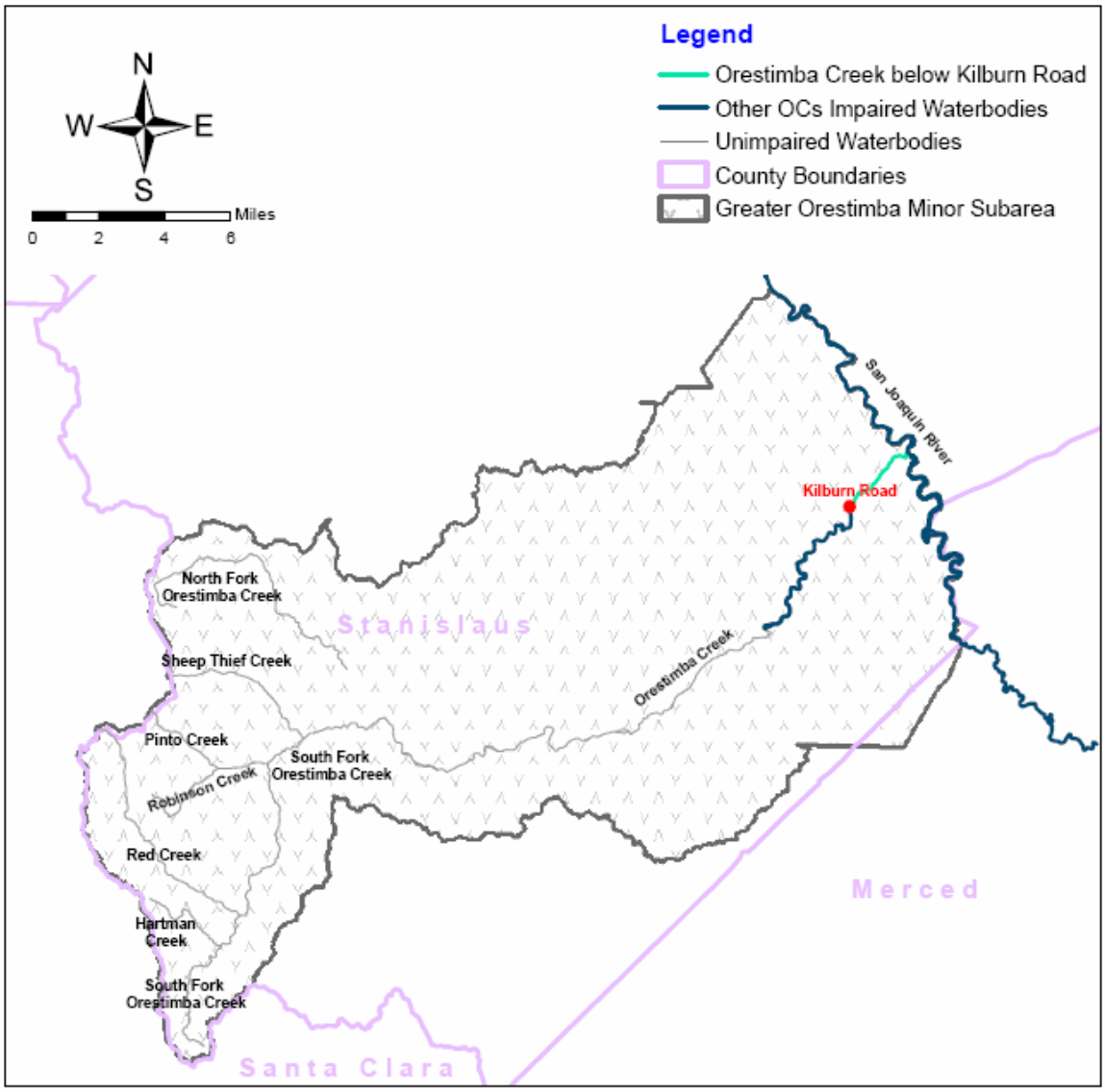

Fig. 6. Orestimba Creek Below Kilburn Road

Description of watershed draining to Impaired Reach

Orestimba Creek is OC-impaired for 2.7 miles below Kilburn Road (Fig. 6) in Stanislaus County and forms part of the Greater Orestimba subarea. The Greater Orestimba subarea is a 285 square mile subset of the Northwest Side subarea located in southwest Stanislaus County and a small portion of western Merced County. The impaired reach drains into the SJR in the Merced River to Tuolumne reach and also includes the drainage of Orestimba Creek Above Kilburn Road. The major landuse in this subarea is agriculture.

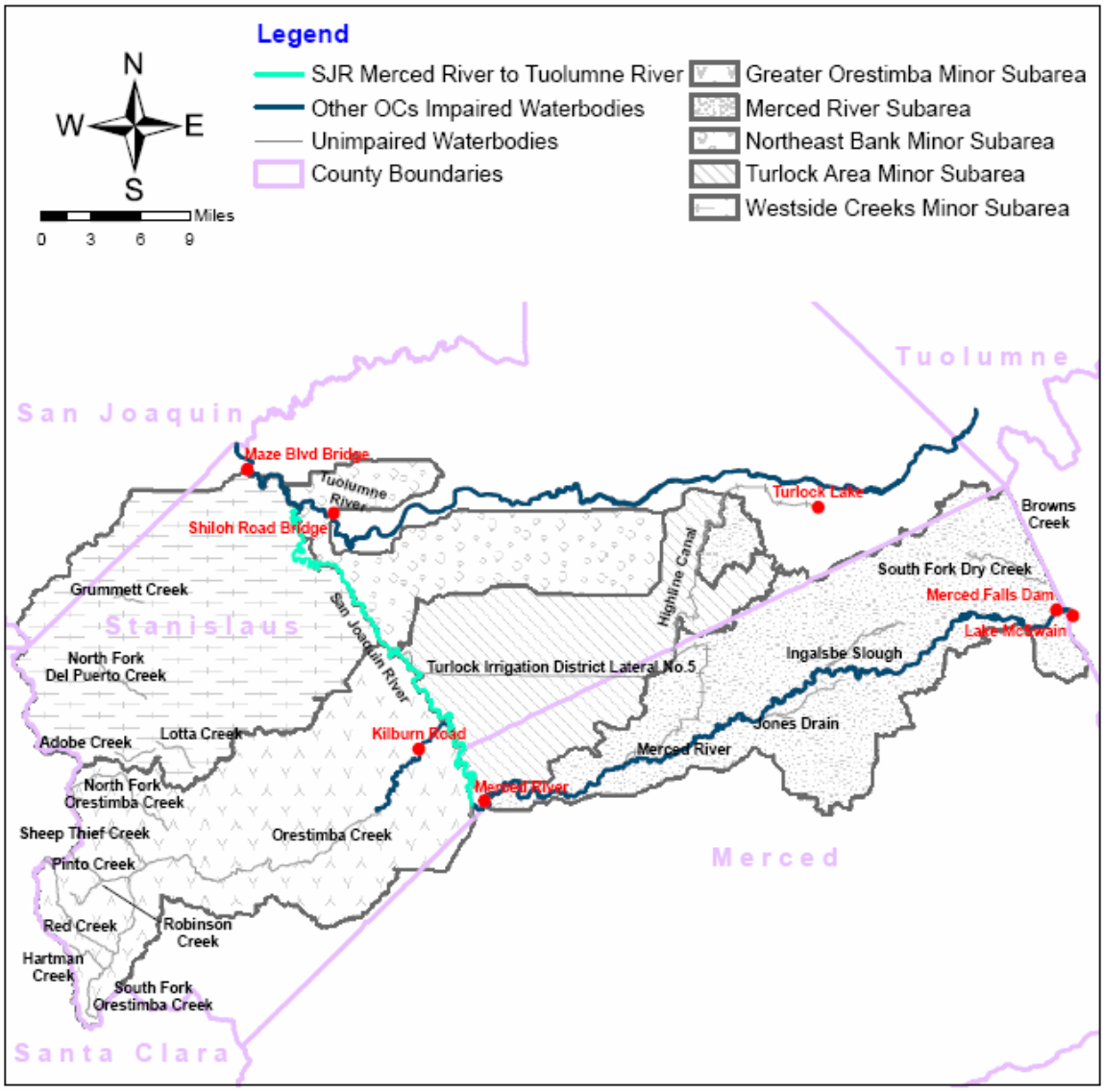

Fig. 7. San Joaquin River from Merced River to Tuolumne River

Description of watershed draining to Impaired Reach

The San Joaquin River is OC-impaired from the confluence with the Merced River to the Tuolumne River for 29 miles (Fig. 7). This reach forms the western border of the East Valley Floor subarea and is adjacent to the Turlock Area and North east bank minor subareas in Stanislaus County. This reach also serves as part of the eastern boundary for the Greater Orestimba and Westside Creeks minor subareas. The Orestimba Creek and its impaired portions drain into this reach at the confluence with the SJR. Additionally, the reach receives upstream inputs from all reaches described previously. The major land use in the watersheds surrounding this impaired reach is agriculture.

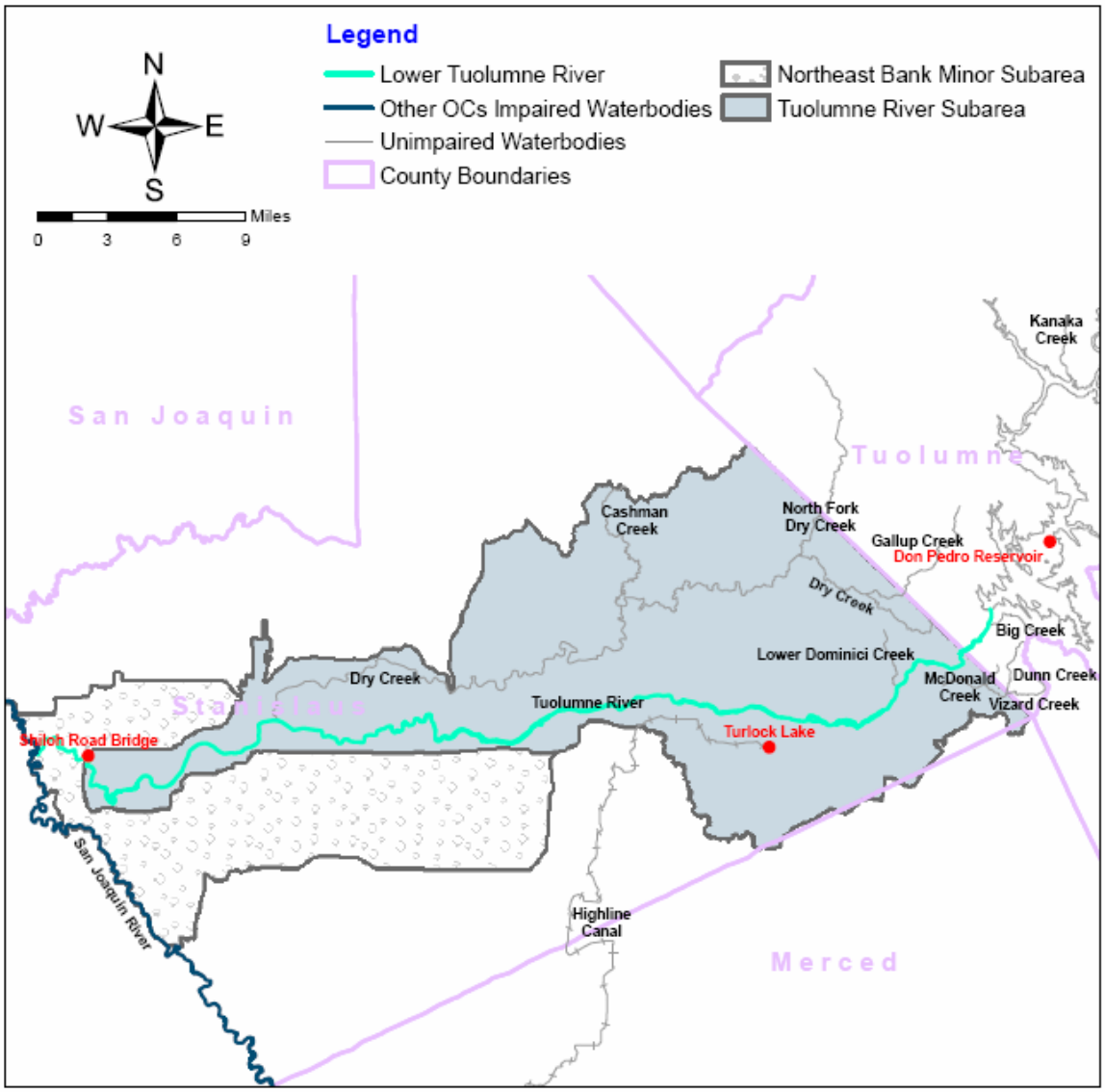

Fig. 8. Lower Tuolumne River from Don Pedro Reservoir to San Joaquin River

Description of watershed draining to Impaired Reach

The Lower Tuolumne River is OC-impaired from the confluence with the Don Pedro Reservoir to the SJR for 60 miles. The confluence with Don Pedro Reservoir extends outside the boundaries of the Lower SJR valley floor hydrologic unit into the Tuolumne River hydrologic unit (Fig. 8). This reach flows southwesterly through the Tuolumne River subarea towards the SJR. The Tuolumne River subarea is 294 square miles and is comprised of the Tuolumne River watershed downstream of the Stanislaus-Tuolumne county line, including the drainage of Turlock Lake, and upstream of the Shiloh Road Bridge (Fig. 8). The reach receives drainage inputs from all the upstream reaches described previously. The major landuse in this subarea is agriculture

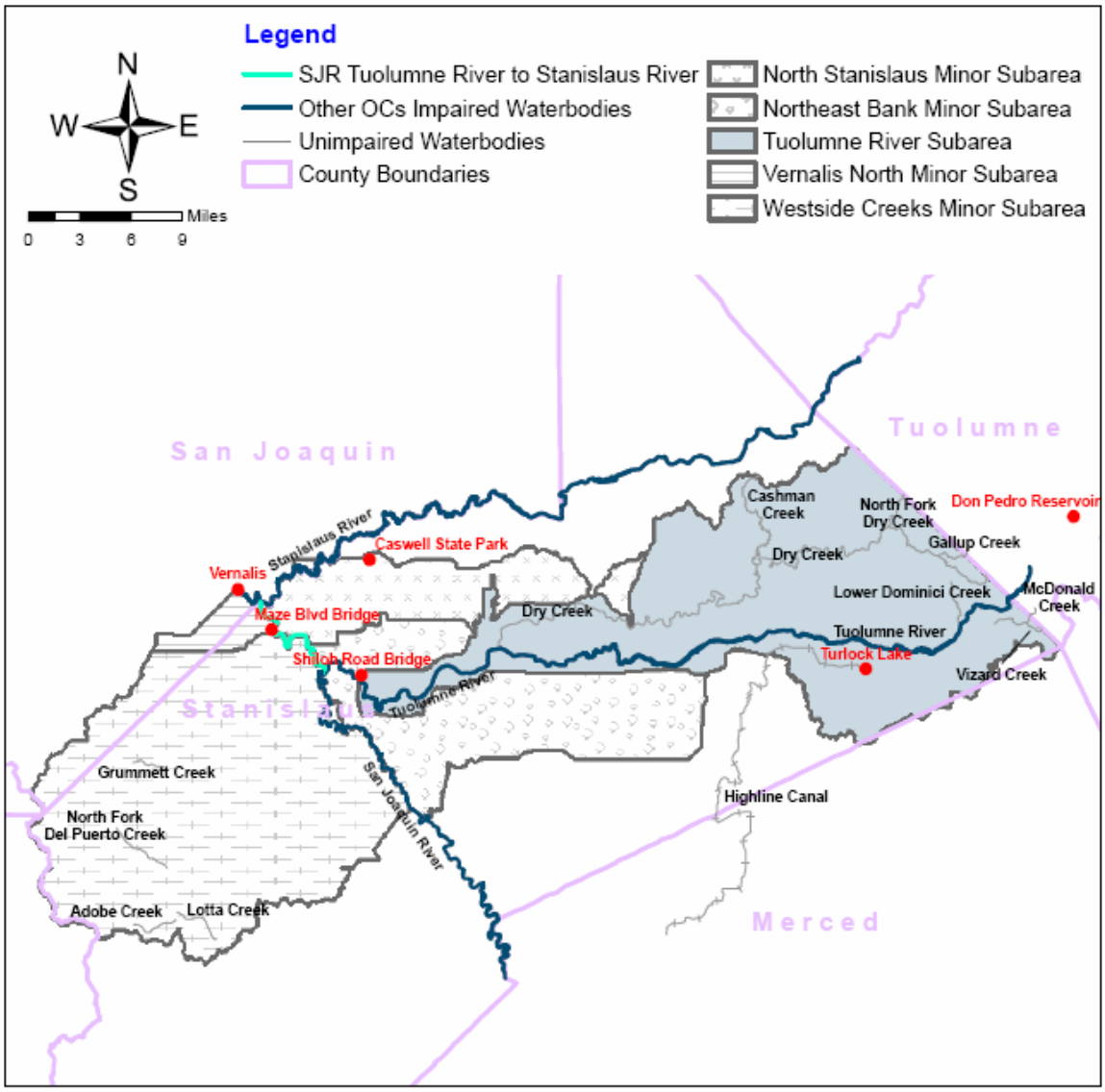

Fig. 9. San Joaquin River from Tuolumne River to Stanislaus River

Description of watershed draining to Impaired Reach

The San Joaquin River is OC-impaired from the confluence with the Tuolumne River to the Stanislaus River for 8.4 miles. This reach forms the western border of the East Valley Floor subareas adjacent to a part of the North east bank and North Stanislaus minor subareas in Stanislaus County (Fig. 9). The reach also serves as part of the eastern boundary for the Westside Creeks subarea and Vernalis North minor subarea. This reach receives upstream inputs from all previously described reaches. Agriculture is the dominant land use in this reach.

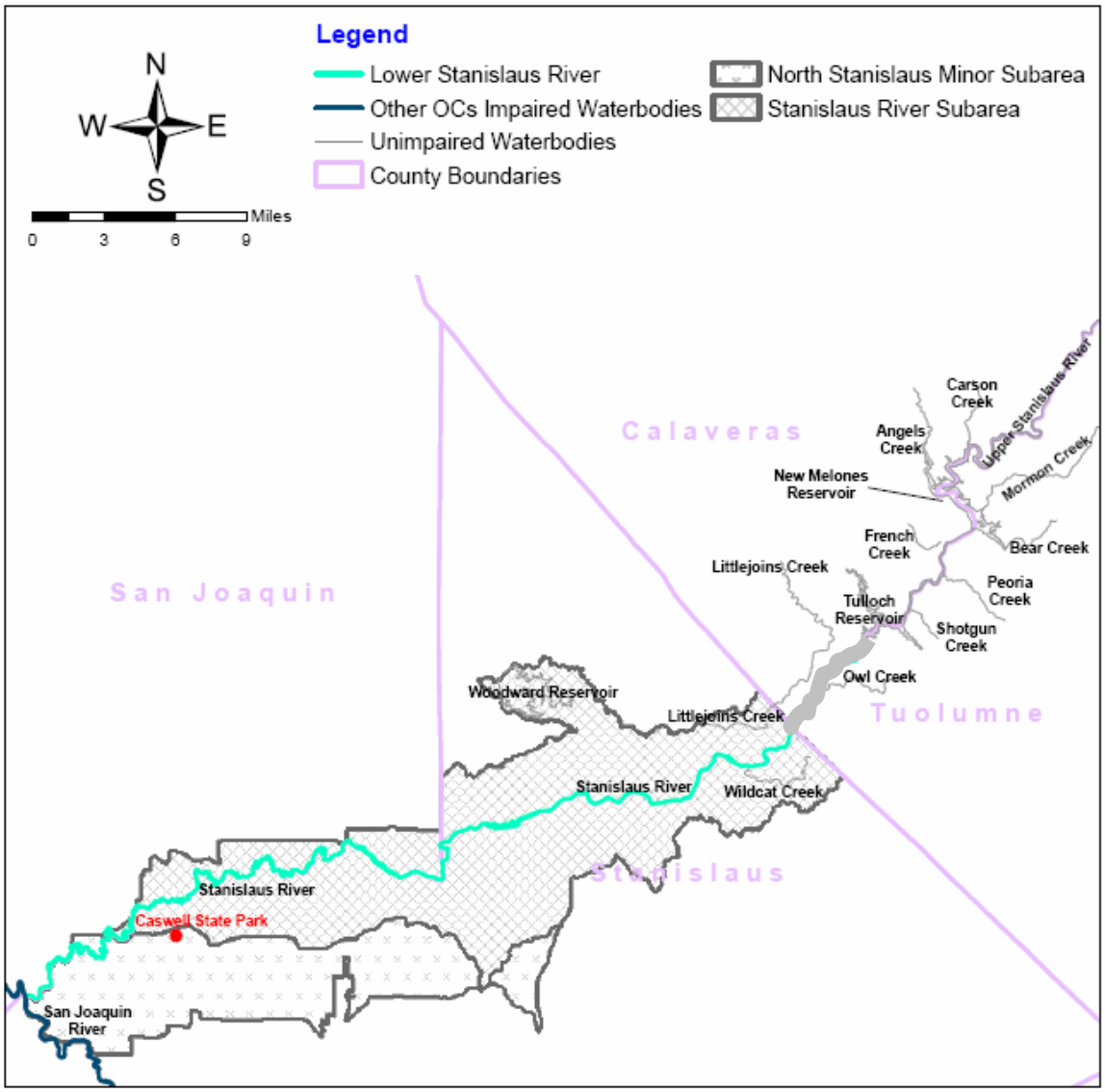

Fig. 10. Lower Stanislaus River

Description of watershed draining to Impaired Reach

The Lower Stanislaus River is OC-impaired from the Lower SJR watershed boundary to the confluence with the SJR for 59 miles. This reach traverses through Stanislaus County and drains through the Stanislaus River subarea. The reach is north of the North Stanislaus minor subarea (Fig. 10). Agriculture is the dominant land use in this reach.

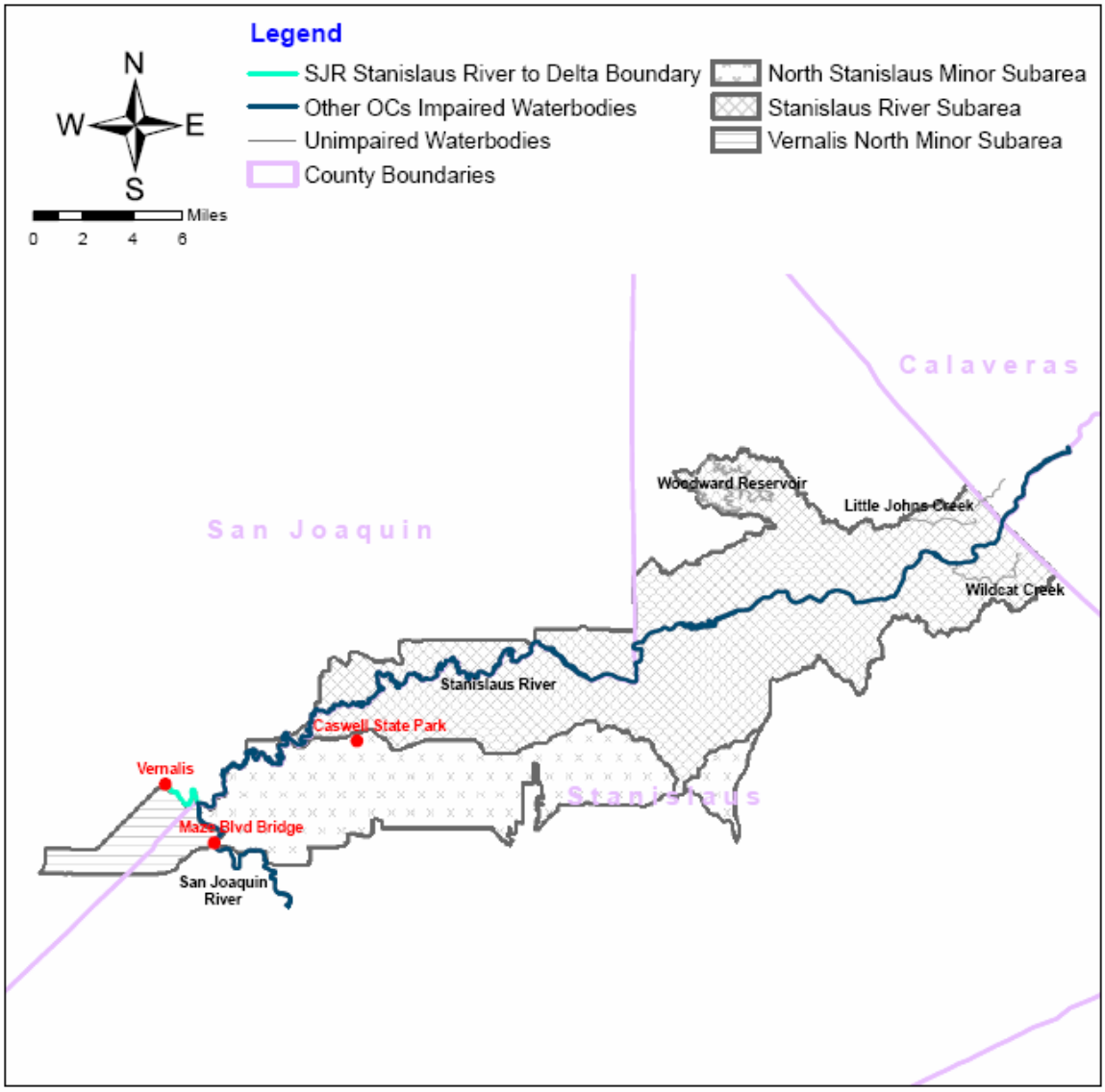

Fig. 11. San Joaquin River from Stanislaus River to Delta Boundary

Description of watershed draining to Impaired Reach

The San Joaquin River is OC-impaired from the confluence with the Stanislaus River to the Delta Boundary for 3 miles. This reach is upstream of the Airport Way Bridge near Vernalis and receives all drainage inputs from downstream of the Mendota Dam to upstream of the Airport Way Bridge as described previously. Agriculture is the dominant land use in this reach.

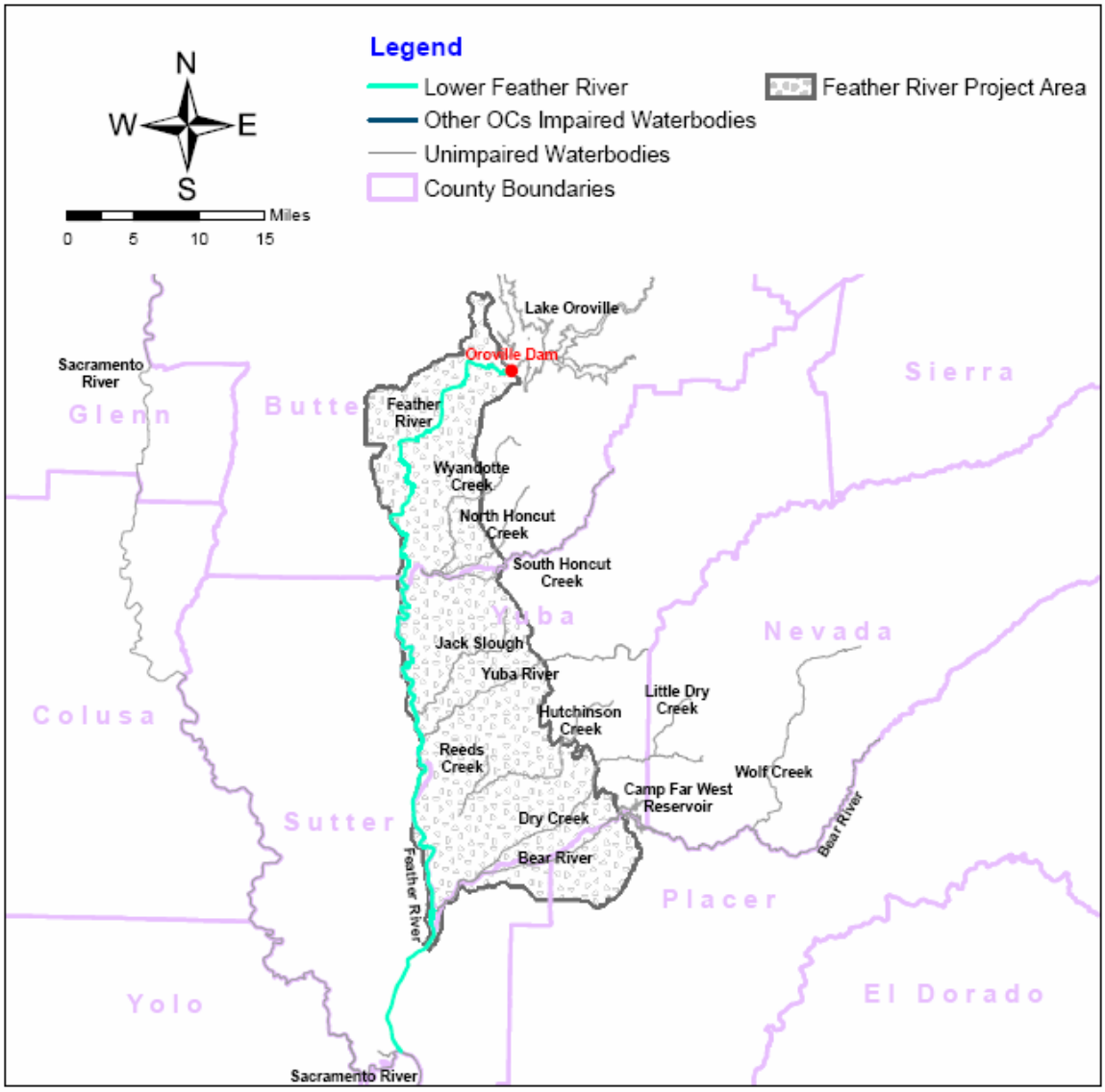

Fig. 12. Lower Feather River from Oroville Dam to Sacramento River

The Lower Feather River is impaired for a 42 mile stretch from Oroville Dam to the confluence with the Sacramento River at Verona (Fig. 12). The project area of interest includes parts of Butte and Yuba counties. The counties, Butte to the north and Yuba to the south represent a hydrologic unit that is framed by Oroville Dam to the north, the Feather River to the west, and the Best Slough to the east and south, including areas around the Yuba River and Bear River (Fig. 12). The predominant land use in Butte County is agriculture followed by grazing.

Inflow to the Feather Rivers include natural hydrologic processes of rainfall runoff, snowmelt, and base flow from groundwater discharge. Flows are greatly affected by reservoir releases, water diversions, irrigation return flows, runoff from urban lands and diversions through bypasses.

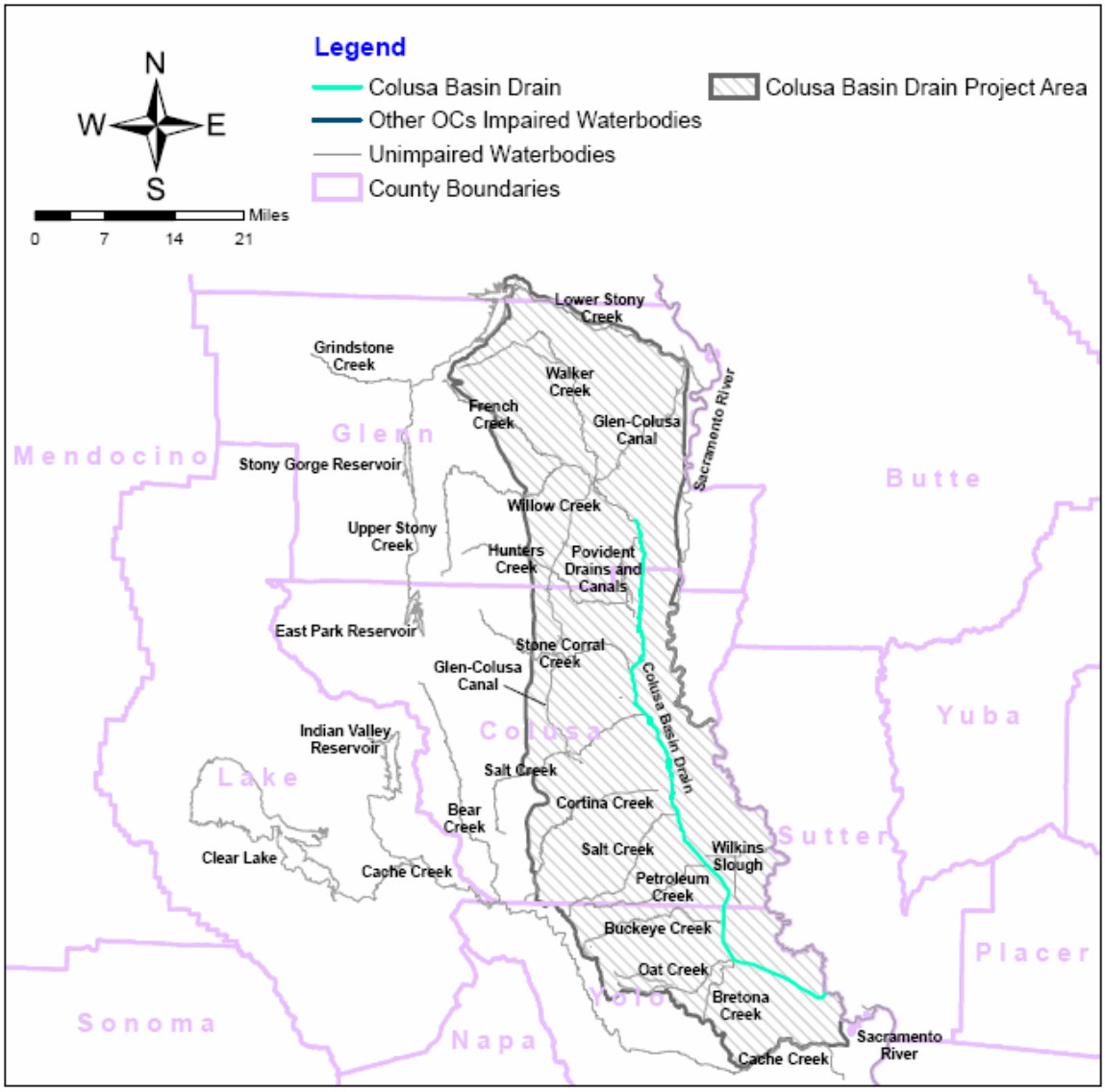

Fig. 13. Colusa Basin Drain (CBD)

The CBD is listed as impaired for 42 miles (Fig. 13). The CBD lies in the Colusa Basin Watershed. The Colusa Basin watershed is located in Glenn and Colusa counties and northern Yolo County to Cache Creek and comprises nearly 1,036,000 acres (1,620 square miles). These counties are contiguous from north to south and represent a hydrologic unit framed by the coastal mountain range to the west and the Sacramento River to the east. The boundaries include Tehama County to the north, Butte and Sutter counties to the east. The CBD is a man-made channel designed to convey irrigation drainage (agricultural return) flows from about 1 million acres of watershed and discharges to the Sacramento River at Knights Landing Outfall Gates. The CBD forms an important component of Sacramento River flow in the summer and is the single largest source of agricultural return flows to the Sacramento River. In the wintertime, the CBD conveys storm runoff. Most of the land within the Basin is devoted primarily to agriculture.

Table 2. Delta waterways and associated map codes

Waterbody	Map Code	Waterbody	Map Code
Central Portion			
Columbia Cut	1	Old River	22
Connection Slough	2	Piper Slough	23
Dead Dog Slough	3	Potato Slough	24
Dead Horse Cut	4	Rhode Island	25
Delta Cross Channel	5	Rock Slough	26
Discovery Bay	6	San Joaquin River	27
Empire Cut	7	Sand Mound Slough	28
False River	8	Santa Fe Cut	29
Franks Tract	9	Seven mile Slough	30
Georgiana Slough	10	Sheep Slough	31
Holland Cut	11	Short Slough	32
Indian Slough	12	South Fork Mokelumne River	33
Jackson Slough	13	Three River Reach	34
Latham Slough	14	Tomato Slough	35
Little Connection Slough	15	Trapper Slough	36
Little Mandeville Cut	16	Turner Cut	37
Little Potato Slough	17	Washington Cut	38
Main Canal	18	Werner Dredger Cut	39
Mildred Island	19	Whiskey Slough	40
Mokelumne River	20	Woodward North Victoria Canals	41
North Fork Mokelumne River	21	Snodgrass Slough	42
Eastern Portion			
Bear Creek	43	Red Bridge Slough	63
Bear Slough	44	Smith Canal	64
Beaver Slough	45	Snodgrass Slough	65
Bishop Cut	46	Stone Lakes	66
Calaveras River	47	Sycamore Slough	67
Cosumnes River	48	Telephone Cut	68
Disappointment Slough	49	The Meadows Slough	69
Dredger Cut	50	Upland Canal	70
Five mile Slough	51	Walker Slough	71
Fourteen mile Slough	52	Walthall Slough	72
French Camp Slough	53	White Slough	73
Grizzly Slough	54	Yosemite Lake	74
Highline Canal	55	Dry Creek	75
Hog Slough	56	Five mile Creek	76
Honker Cut	57	Grizzly Slough	77
Lost Slough	58	Red Bridge Slough	78

Waterbody	Map Code	Waterbody	Map Code
Mokelumne River	59	Walthall Slough	79
Mormon Slough	60	Morrison Creek	80
Mosher Slough	61	Mormon Slough	81
Pixley Slough	62		
Export Area			
Brushy Creek	81	Old River	84
Clifton Court Forebay	82	West Canal	85
Italian Slough	83		
Northern Portion			
Elkhorn Slough	86	Main Canal	94
Main Canal	87	Miner Slough	95
Taylor Slough	88	Sacramento Deep Water Channel	96
Babel Slough	89	Sacramento River	97
Cache Slough	90	Steamboat Slough	98
Duck Slough	91	Sutter Slough	99
Elk Slough	92	Taylor Slough	100
Elkhorn Slough	93	Winchester Lake	101
Northwestern Portion			
Sweany Creek	102	Liberty Cut	112
The Big Ditch	103	Lindsey Slough	113
Ulatis Creek	104	Lookout Slough	114
Yolo Bypass	105	Prospect Slough	115
Barker Slough	106	Shag Slough	116
Cache Slough	107	Sycamore Slough	117
Calhoun Cut	108	Toe Drain	118
Duck Slough	109	Wright Cut	119
Haas Slough	110	Ulatis Creek	120
Hastings Cut	111		
Southern Portion			
Deuel Drain	121	Mountain House Creek	122
Southern Portion			
Paradise Cut	123	Old River	132
Tom Paine Slough	124	Paradise Cut	133
Burns Cutoff	125	Salmon Slough	134
Crocker Cut	126	San Joaquin River	135
Doughty Cut	127	Sugar Cut	136
Grant Line Canal	128	Tom Paine Slough	137
Livermore Yacht Club	129	Victoria North Canals	138
Middle River	130	Walthall Slough	139
Mountain House Creek	131		

Waterbody	Map Code	Waterbody	Map Code
SDWSC			
SDWSC	140		
Western Portion			
Kellogg Creek	141	Horseshoe Bend	154
Main Canal	142	Little Franks Tract	155
Marsh Creek	143	Marsh Creek	156
Deer Creek	144	Mayberry Cut	157
Sand Creek	145	Mayberry Slough	158
Big Break	146	Sacramento River	159
Broad Slough	147	San Joaquin River	160
Cabin Slough	148	Sand Mound Slough	161
Donlon Island	149	Sherman Lake	162
Dutch Slough	150	Taylor Slough	163
Emerson Slough	151	Three mile Slough	164
False River	152	Piper Slough	165
Fisherman's Cut	153		

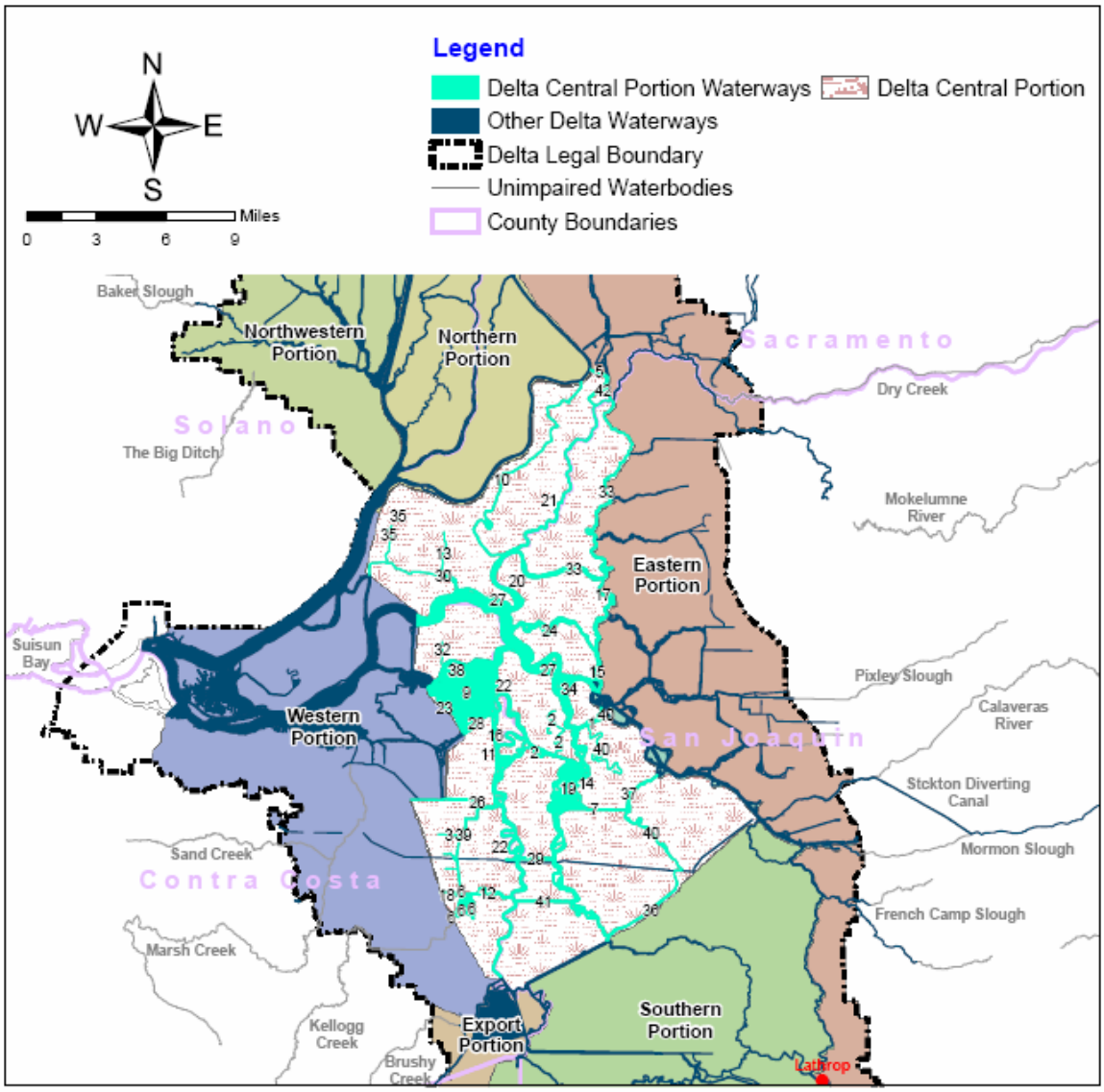

Fig. 14. Delta Waterways (Central portion)

Delta waterways in the Central Portion consist of 11,425 acres listed as impaired (Fig. 14). The Central Portion tend to receive flow inputs from the lower Sacramento Valley Basin as well flow inputs from the upper San Joaquin Basin above Vernalis which include inflows from the Stanislaus, Tuolumne, Merced as well as other upper San Joaquin Rivers downstream of New Melones, Don Pedro, McClure and Millerton Lakes. The Central Portion receives inputs from the Eastern, Southern, Stockton Deep Water Ship Channel and the Northern Portions.

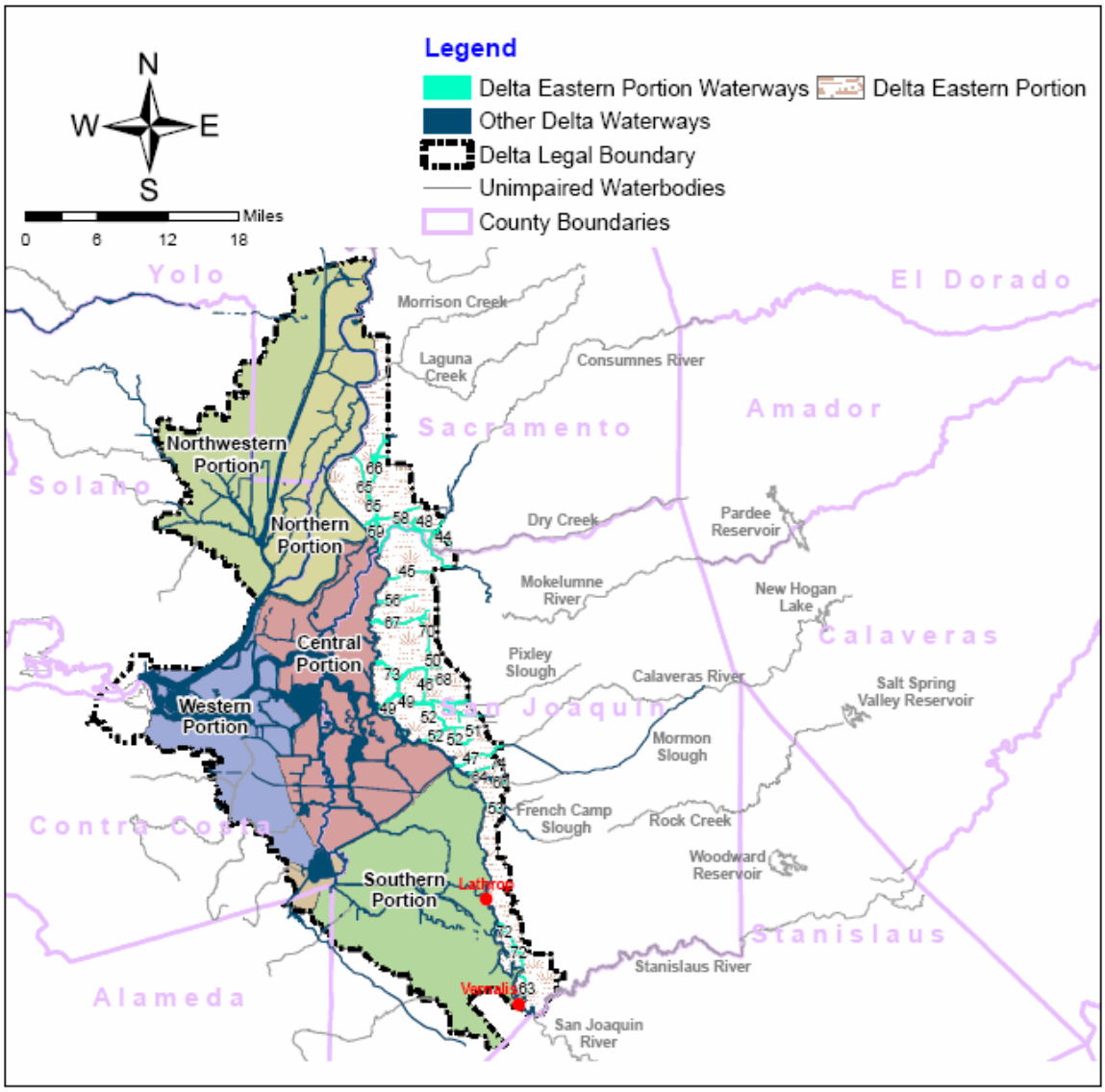

Fig. 15. Delta Waterways (Eastern portion)

Delta waterways in the Eastern portion consists of 2,792 acres listed as impaired (Fig. 15). The Eastern Portion receive flow inputs from the lower Sacramento Valley Basin as well as from the upper SJR Basin above Vernalis for the southern part of the Eastern portion (Fig. 15). This Portion also receives tributary inputs from the East side valley.

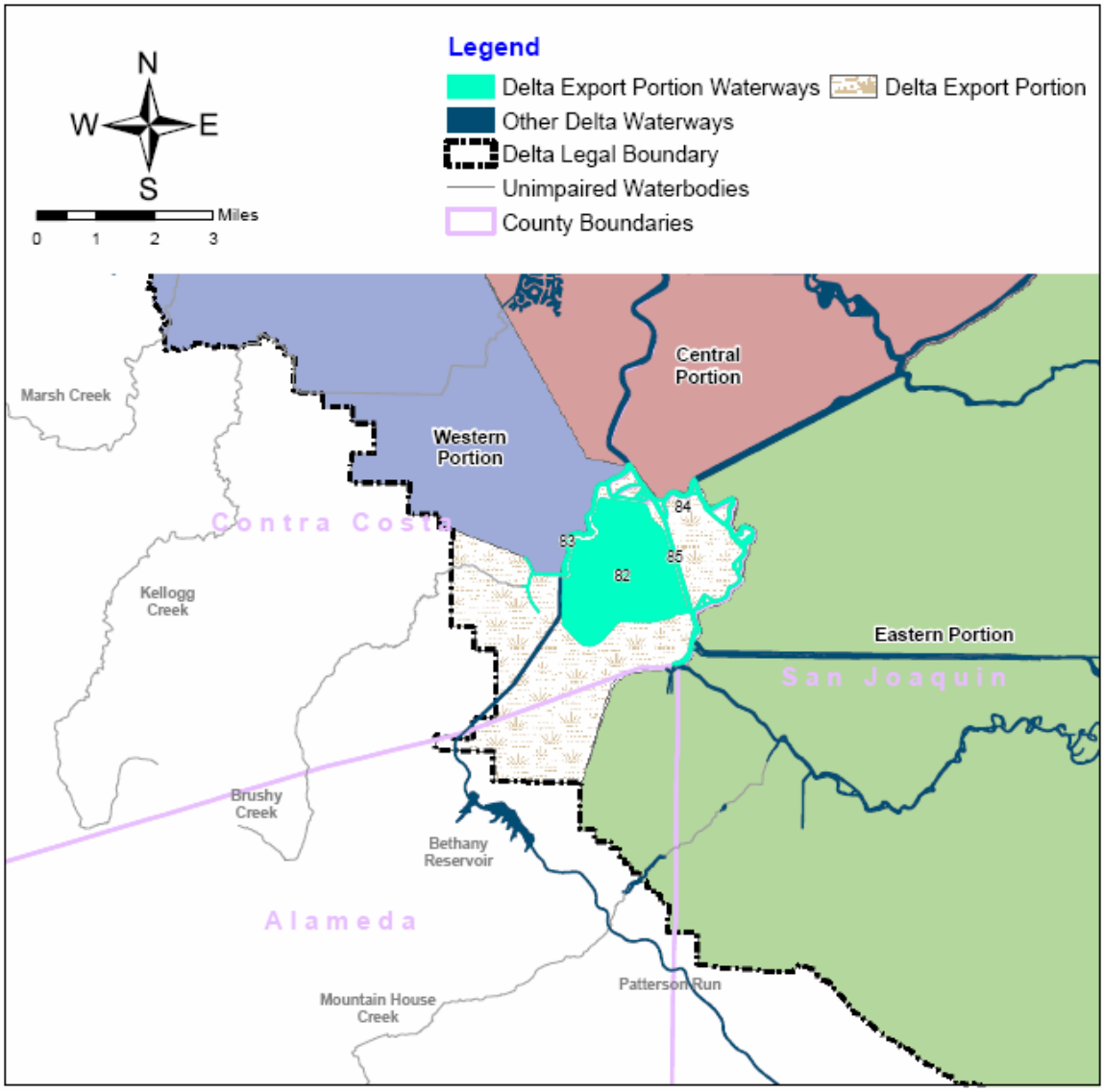

Fig. 16. Delta Waterways (Export area)

Delta waterways in the Export Area consists of 583 acres listed as impaired. The Export Area represent the water that is diverted southward via pumping for human consumption, agricultural and industrial use. Some of the pumping plants in this area include the Jones pumping plant, South Bay pumping plant and the Harvey O. Banks pumping plant.

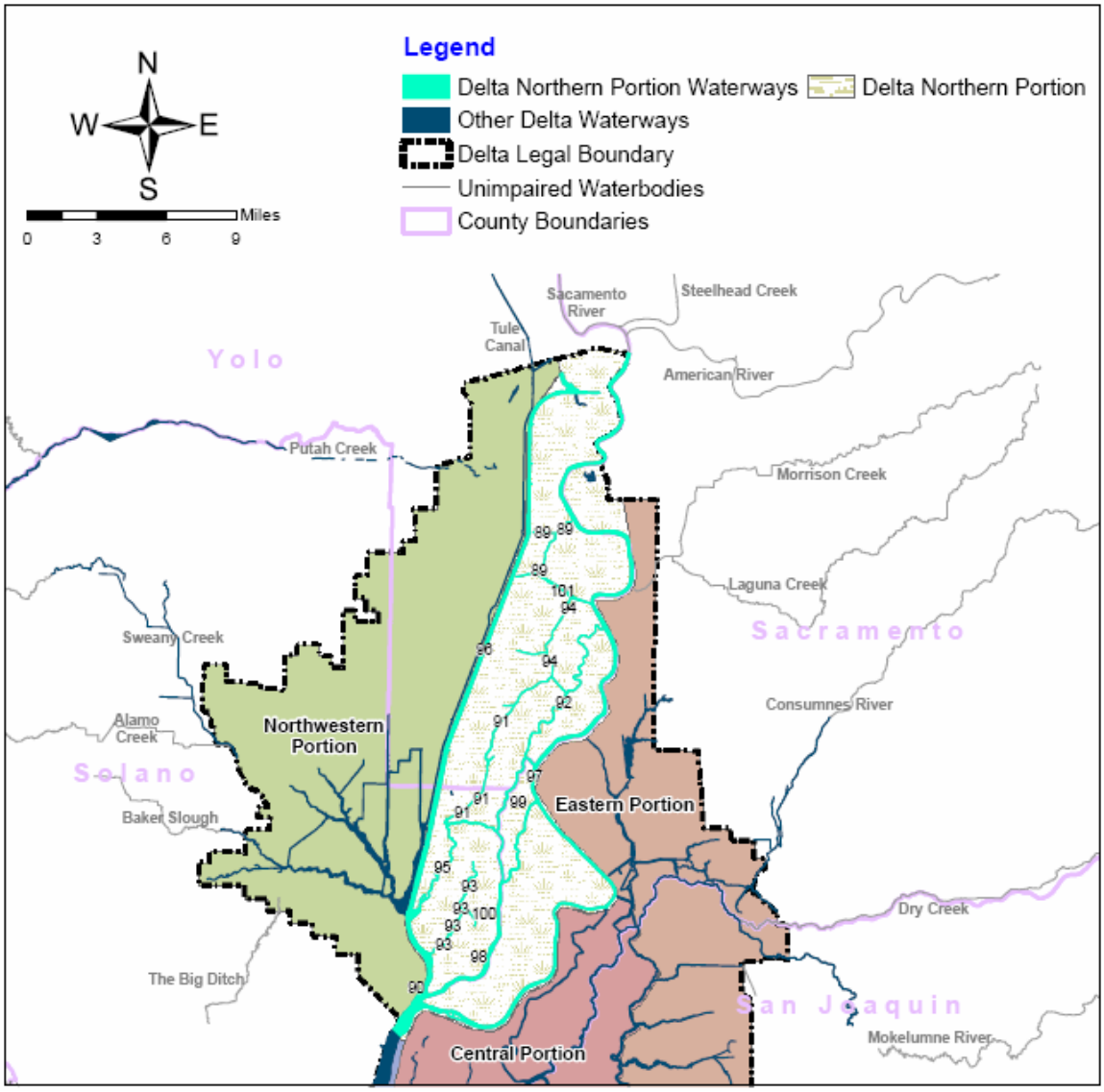

Fig. 17. Delta Waterways (Northern portion)

Delta waterways in the Northern portion has 6,795 acres listed as impaired. The Delta waterways in the Northern portion primarily consists of the Sacramento River inputs. The Northern Portions receives drainage inputs from streams that drain the mid- to lower portion of the Sacramento River Basin. The Sacramento Deep Water Ship Channel forms part of the Northern Portion Delta waterways.

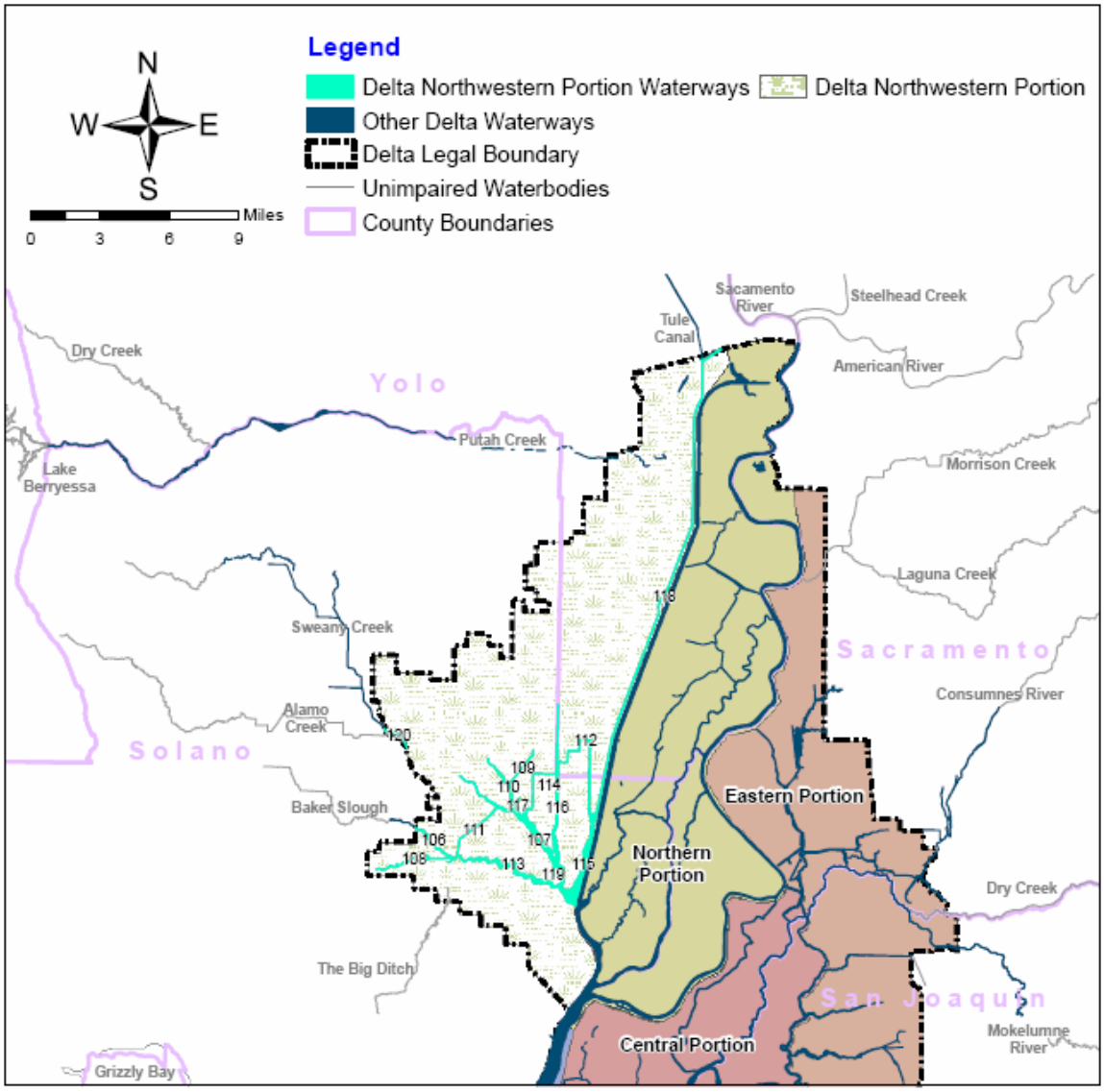

Fig. 18. Delta Waterways (Northwestern portion)

Delta waterways in the Northwestern portion mainly include the Northwestern tributaries to the lower most southern part (Fig. 18). This portion has 2,587 acres listed as impaired. The notable waterways include Yolo Bypass, Ulatis Creek and numerous other waterways concentrated in the southern portion as shown on the map (Fig. 18).

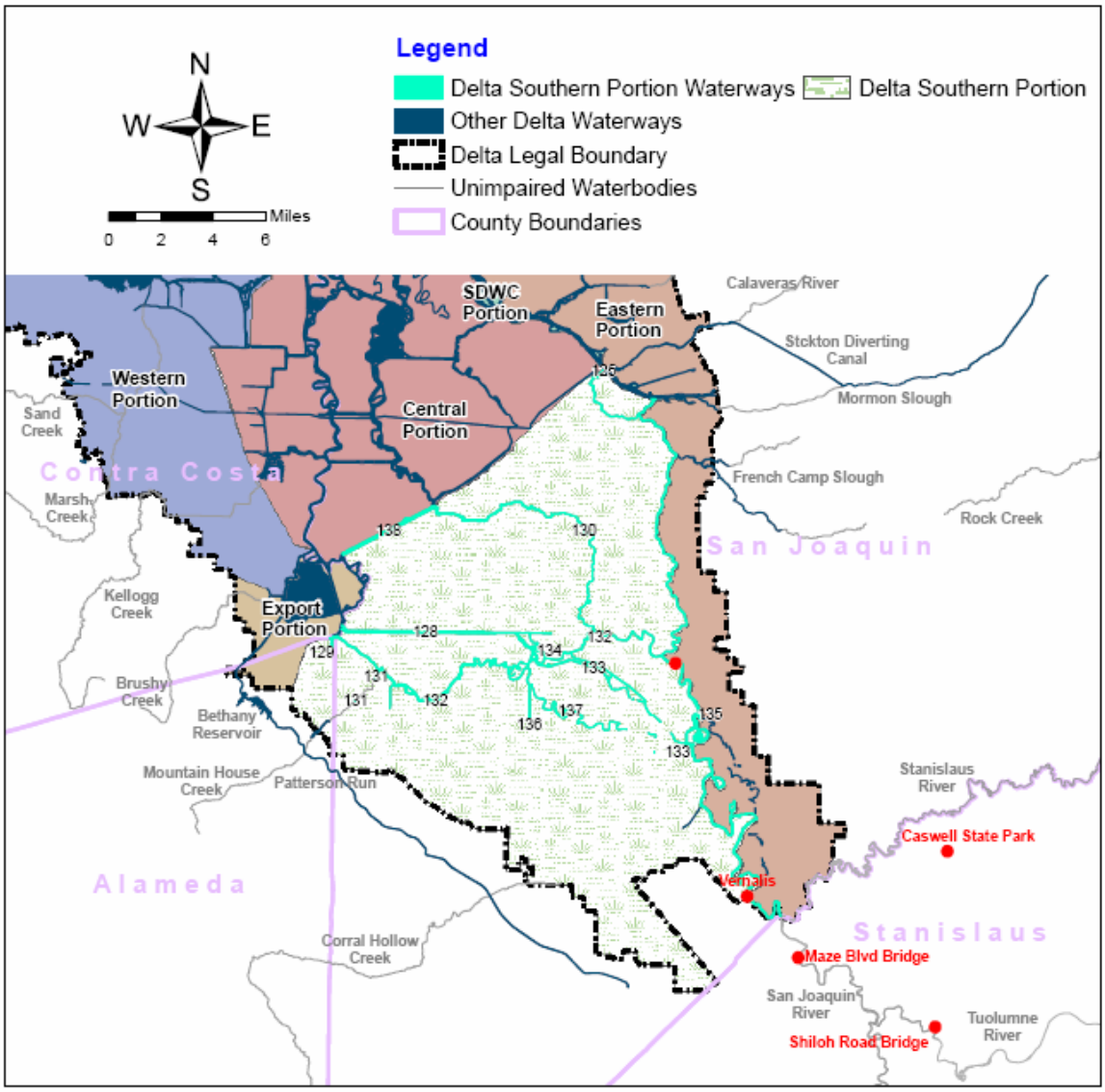

Fig. 19. Delta Waterways (Southern portion)

Delta waterways Southern portion has 3,125 acres listed as impaired. Delta waterways in the Southern portion primarily receive flow inputs from portions of the upper San Joaquin Basin project area above Vernalis which include inflows from the Stanislaus, Tuolumne, Merced as well as other upper San Joaquin Rivers downstream of New Melones, Don Pedro, McClure and Millerton Lakes.

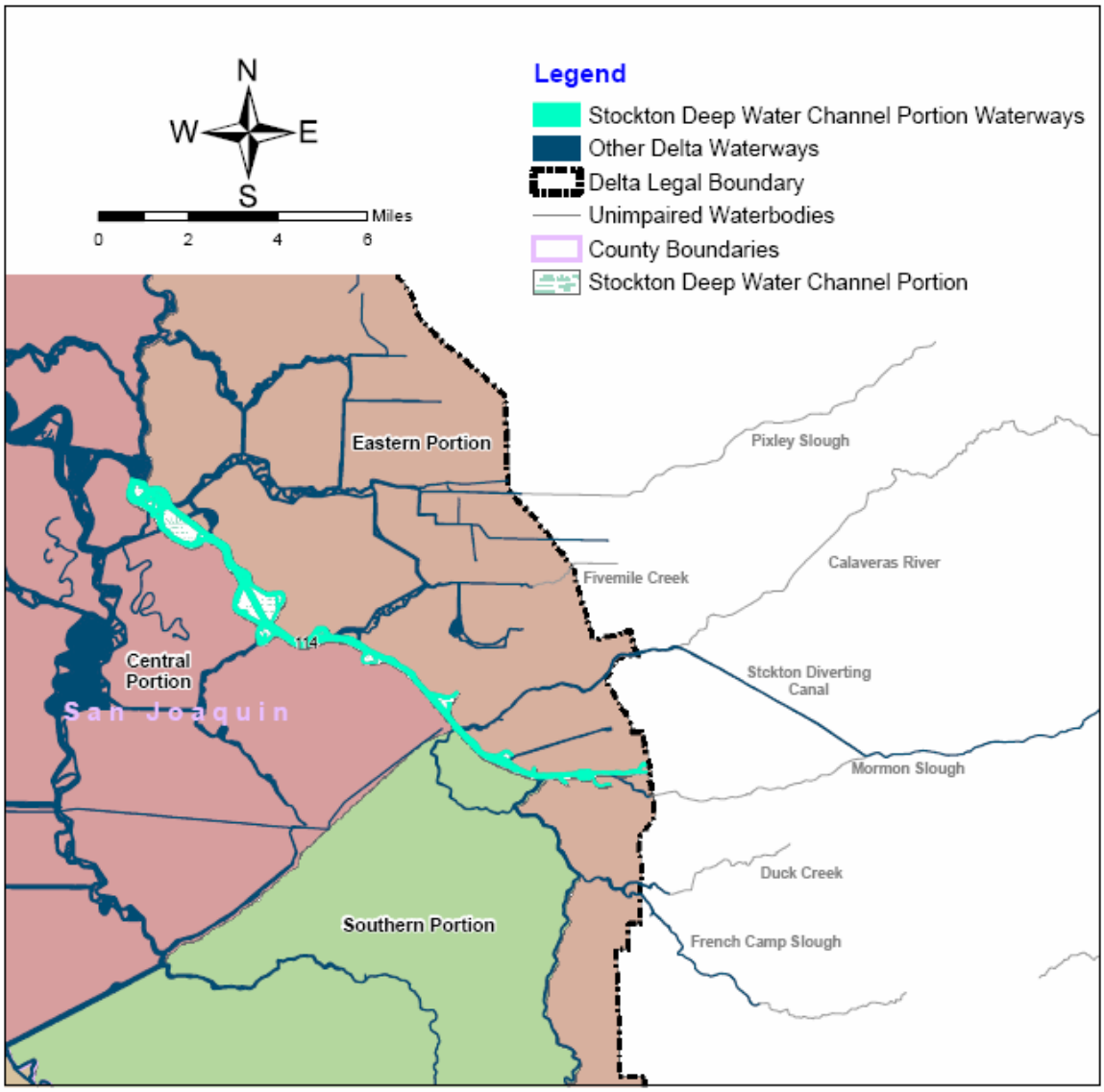

Fig. 20. Delta Waterways (Stockton Deep Water/Ship Channel)

Delta waterways Stockton Deep Water Ship Channel (SDWSC) has 1,603 acres listed as impaired and stretches from the Turning Basin downstream to Chips Island. The SDWSC receive its flow inputs predominantly from the upper San Joaquin Basin above Vernalis (Fig. 20).

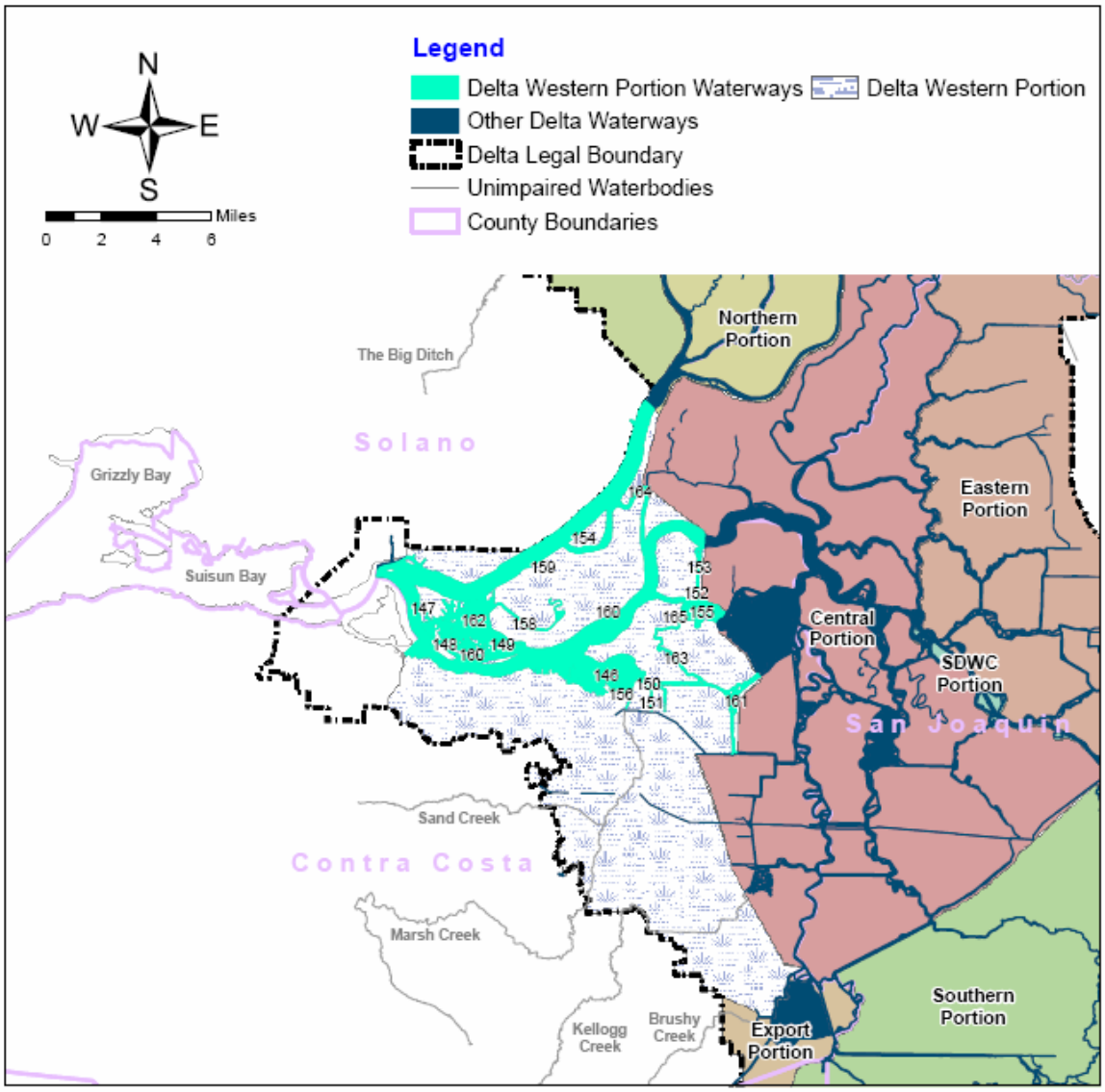

Fig. 21. Delta Waterways (Western portion)

The Delta waterways Western portion has the largest impaired area with 14,524 acres. The Western Portion acts as a confluence of the Southern, Northern, Northwestern and Central Delta waterways (Fig. 21).

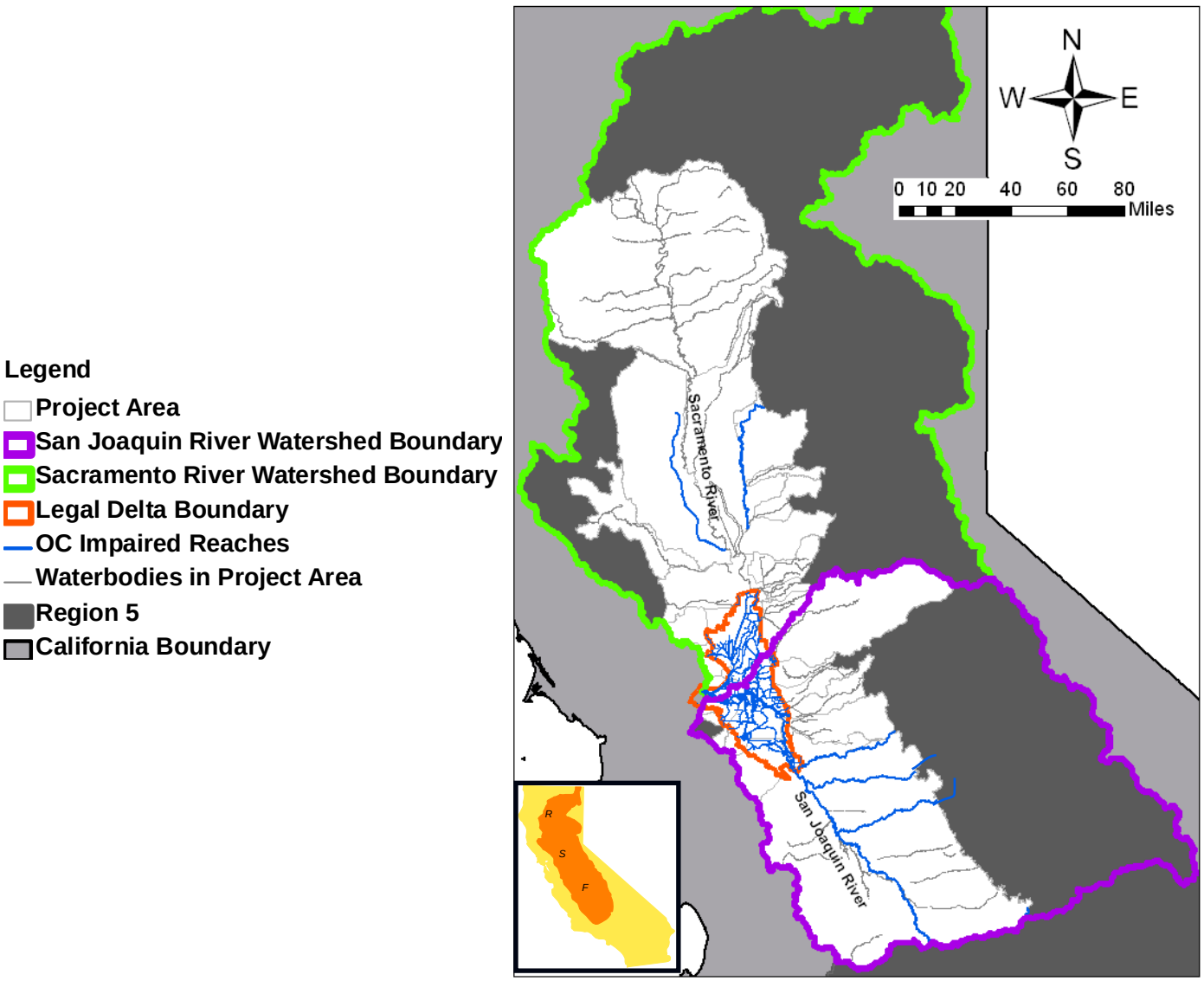

Fig. 22. Sacramento-San Joaquin Delta Project Area

The project areas for the 8 impaired reaches is larger than just the impaired reaches themselves, and encompass all the upstream watersheds that drain into the Sacramento-San Joaquin Delta as shown in Figure 22. More than 70% of Delta lands have agricultural land uses and many of the urban areas in the Delta were once agricultural land.

Moving Forward – Staying Involved

Lyris List sign up:
Choose: Central Valley Organochlorine TMDL and Basin Plan Amendment
http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml

OC TMDL website:
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fkizito@waterboards.ca.gov