



## **Watershed Water Management Portfolios**

Below are the descriptions of the watersheds in the SSIRWMP Region and their water management portfolios. All of these watersheds could benefit from projects designed to achieve multiple objectives such as: implementing strategic plans and studies for local water agencies, meadow restoration, fuel breaks and fuel treatments, comprehensive water studies, ecosystem restoration and invasive species removal.

### **San Joaquin River Watershed**

Managing entities in the San Joaquin River watershed within the SSIRWMP Region include:

- ✓ Sierra Resource Conservation District;
- ✓ Southern California Edison;
- ✓ Pacific Gas & Electric,
- ✓ Fresno County,
- ✓ Ditch companies,
- ✓ The New Auberry Water Association,
- ✓ Friant Water Users,
- ✓ National Park Service – Sequoia and Kings Canyon National Parks,
- ✓ Sierra National Forest,
- ✓ US Bureau of Reclamation,
- ✓ California State Parks, Millerton State Park.

### **San Joaquin Watershed Issues:**

- ✓ downstream flooding after wildfire
- ✓ wildfire impacts on water quality,
- ✓ wildlife connectivity,
- ✓ groundwater availability,
- ✓ water quality and management,
- ✓ The relationship between land use and water quality and quantity.

This watershed has the greatest level of water management planning and implementation. Activities include the Sierra Resource Conservation District's (RCD) groundwater management planning, the Upper San Joaquin River Watershed assessment, watershed coordination (there is no current watershed coordinator, but for several years the California Department of Conservation funded one), groundwater contamination studies, the Millerton Area Plan, Fresno and Madera County general plans, the Madera IRWMP, Sierra National Forest's Forest Management Plan, Sequoia and Kings Canyon National Parks General Management Plan, meadow ranking and restoration on Sierra National Forest, Southern California Edison Forest Management Plan studies and implementation and various public and private timber harvest plans.

### **Collaboration and Public Involvement**

Sierra RCD's work on a groundwater management plan for eastern Fresno County and the Upper San Joaquin River Forum/Assessment, various National Environmental Policy Act (NEPA) processes, the Fresno County General Plan, Southern Sierra IRWMP, as well as the Willow Creek Forest Collaborative are examples of collaboration and public involvement in the watershed.

The Sierra RCD and Fresno County collaborated on the groundwater contamination studies with the California Department of Water Resources (DWR) and the Sierra National Forest regularly collects and shares data. Various studies and research occurred or will occur in the Upper San Joaquin River including the watershed assessment and the Millerton Area Plan.

### **Projects**

Ongoing projects in the watershed include meadow restoration on the Sierra National Forest, THPs, prescribed fires on private and national forest lands, and Sierra RCD's groundwater investigation.

### **Kings River Watershed**

The Kings River Watershed has limited capacity to increase their water management portfolio.

Managing entities in the Kings River Watershed include:

- ✓ the Army Corps of Engineers,
- ✓ Fresno Metropolitan Flood Control District,
- ✓ Sierra Resource Conservation District,
- ✓ PG&E, ditch companies,
- ✓ Friends of the Kings River,

- ✓ Kings River Conservation District,
- ✓ Kings River Conservancy,
- ✓ Kings River Water Association/Users,
- ✓ Upper Kings River Forum (IRWMP),
- ✓ National Park Service – wilderness headwaters of Kings Canyon National Park, and
- ✓ Sierra National Forest.

Existing water management planning includes the Forest Management Plans of Sierra and Sequoia National Forests, Sequoia and Kings Canyon National Parks General Management Plans, and Fresno County’s General Plan.

Sierra RCD’s work on a groundwater management plan for eastern Fresno County, the Upper Kings River Forum’s IRWM planning, and the Kings River Conservancy’s watershed protection and planning are the on-going public involvement processes in the Kings River Watershed.

The Pacific Southwest Research Station’s Kings River Experimental Watersheds and National Science Foundation’s (NSF) Southern Sierra Critical Zone Observatory (SSCZO), the Kings River Conservation District, and Fresno State University all have been conducting studies and research in the Kings River Watershed.

**Kings River Watershed Issues:**

- ✓ water quality degradation after fires,
- ✓ impaired water body listing,
- ✓ downstream flooding,
- ✓ wildlife connectivity,
- ✓ groundwater availability,
- ✓ groundwater quality and management,
- ✓ county zoning,
- ✓ land use and water quality, and
- ✓ invasive species.

**Projects**

Fresno State’s graduate research on aquatic species and the effect of riparian areas on water quality, the USFS’s Pacific Southwest Research Station’s watershed management and stream water quality and quantity assessment.

**Kaweah River Watershed**

This watershed has limited capacity to enhance the water management portfolio.

Managing entities in the Kaweah River Watershed include:

- ✓ the US Army Corps of Engineers,
- ✓ Kaweah Delta Water Conservation District,
- ✓ Tulare County Resource Conservation District,
- ✓ Southern California Edison,
- ✓ ditch companies,
- ✓ Alta Acres Water Association,
- ✓ Three Rivers Community Services District,
- ✓ Sequoia and Kings Canyon National Parks,
- ✓ Sequoia National Forest, and
- ✓ the Bureau of Land Management.

Existing water management planning in the Kaweah River Watershed includes the Forest Management Plan of Sequoia National Forest, Sequoia and Kings Canyon National Parks General Management Plan, BLM Caliente Area Management Plan, and the Tulare County General Plan.

### **Kaweah Watershed Issues**

flooding downstream during high water events, fuel buildup and catastrophic fire, wildlife connectivity, ground and surface water availability, quality and management, wells in floodplains dewatering streams, invasive species, leaky infrastructure, changing land use impacts on water quality, quantity.

### **Collaboration and Public Involvement**

- ✓ Southern Sierra IRWMP
- ✓ Sequoia and Kings Canyon National Parks NEPA processes and symposia,
- ✓ the BLM – Caliente management plan,
- ✓ Tulare County DAC pilot study, and
- ✓ Sierra Nevada Conservancy’s regional analysis, public symposia, and meetings.

There are many data collection and sharing activities in the Kaweah Watershed. These include the Southern Sierra Partnership, the Sequoia Riverlands Trust’s land protection planning, well water monitoring, and watershed impacts of grazing.

### **Projects**

- ✓ the Big Meadows Project
- ✓ surface water monitoring by Three Rivers CSD,
- ✓ the Halstead Meadow Restoration Project,

- ✓ the Velvetgrass Removal Project in Sequoia National Park and Sequoia National Forest,
- ✓ Three Rivers CSD's small water system, which monitors groundwater and
- ✓ Sequoia Riverlands Trust's ecological restoration of an abandoned rock quarry in Dry Creek,
- ✓ National Park Service's frog restoration via trout removal in high elevation lakes,
- ✓ the Cahoon Meadow Restoration Planning Project,
- ✓ Tulare County's Three Rivers Community plan,
- ✓ Sierra Nevada Conservancy and Flyfishers for Conservation's Big Meadows Restoration Project's groundwater and bug data monitoring, and the Southern Sierra Partnership's climate change adaptation program.

### **Tule River Watershed**

This watershed has moderate capacity to enhance its water management portfolio.

Managing entities in the Tule River Watershed include:

- ✓ US Army Corps of Engineers,
- ✓ Cal Fire,
- ✓ Southern California Edison,
- ✓ Tulare County RCD,
- ✓ Ditch Companies,
- ✓ Springville Public Utilities District,
- ✓ Sequoia National Forest, and
- ✓ Tule River Indian Reservation.

### **Tule River Watershed Issues**

- ✓ downstream flooding,
- ✓ marijuana cultivation,
- ✓ littering along waterways,
- ✓ wildfire, wildlife connectivity,
- ✓ groundwater and surface water availability,
- ✓ groundwater quality and management,
- ✓ Springville Public Utilities District need for improved treatment and increased capacity,
- ✓ water supply for Tule Indian Reservation,
- ✓ invasive species,
- ✓ leaky water management infrastructure,
- ✓ in-stream flow, and
- ✓ the relationship between land use and water quality and quantity.

Existing water management planning includes the Forest Management Plan of Sequoia National Forest, and Tulare County's General Plan.

### **Collaboration and Public Involvement**

- ✓ CSET, Sierra Nevada Conservancy, Sequoia National Forest and Wildplaces collaboration to clean up litter along the Tule River, remove graffiti and install refuse receptacles,
- ✓ Sequoia National Forest's NEPA processes,
- ✓ Tulare County's General Plan.

An example of data collection and sharing in this watershed is the climate change adaptation and ecosystem services work being completed by the Southern Sierra Partnership.

### **Projects**

- ✓ Southern California Edison's Tule Flume Replacement Project,
- ✓ CSET, Sierra Nevada Conservancy, Sequoia National Forest and Wildplaces collaboration to clean up litter along the Tule River, remove graffiti and install refuse receptacles,
- ✓ an education program with language interpreters about litter clean up and stewardship of river resources,
- ✓ marijuana eradication on Tule River Indian Reservation, and

Ongoing studies in this watershed include the Forest Service's streams and water yield research.

### **Deer Creek Watershed**

This watershed has very limited capacity to enhance its water management portfolio.

Managing entities in this watershed include:

- ✓ Tulare County RCD,
- ✓ Tulare County,
- ✓ PG&E,
- ✓ Sequoia National Forest, and
- ✓ Deer Creek Hydroelectric.

Existing water management planning in this watershed includes Sequoia National Forest's Forest Management Plan and Tulare County's General Plan. The National Park Service is

conducting a western pond turtle study throughout the southern Sierra, including some private ranches on Deer Creek.

### **Watershed issues in Deer Creek Watershed**

- ✓ downstream flooding during high water events,
- ✓ impaired water body listing,
- ✓ wildfire threats,
- ✓ wildlife connectivity, grazing management along stream courses, groundwater availability, quality, and management, land use and water quality. Collaboration and public involvement activities include the Tulare County General Plan.

Data collection and sharing activities include the The Southern Sierra Partnership's work on climate change adaptation and ecosystem services, the Forest Service's stream conditions inventory, and the Regional Water Quality Control Board's sampling for impaired water bodies.

### **Projects**

- ✓ restoration along Deer Creek at the Moure Preserve,
- ✓ restoration, invasive species removal, and riparian fencing along Tyler Creek.

### **White River Watershed**

This watershed has very low capacity to enhance its water management portfolio.

Managing entities in the White River Watershed include:

- ✓ Tulare County RCD,
- ✓ Tulare County,
- ✓ Southern California Edison,
- ✓ ditch companies and,
- ✓ US Forest Service.

Existing water management planning in this watershed includes Sequoia National Forest's Forest Management Plan, and the Tulare County General Plan. Collaboration and public involvement activities include individual USFS NEPA processes, BLM – Caliente Management Plan, and the Tulare County General Plan.

Data collection and sharing activities include the Southern Sierra Partnership's climate change adaptation and ecosystem services work and Sequoia National Forest's stream condition inventory.

## **Poso Creek Watershed**

Capacity to enhance the water management portfolio is very limited in the Poso Creek Watershed.

Managing entities in this watershed include:

- ✓ the Poso Creek IRWMP,
- ✓ Kern County Water Agency,
- ✓ Tulare County RCD,
- ✓ Tulare County,
- ✓ Southern California Edison, and
- ✓ the Sugarloaf Mutual Water Company.

Existing water management planning in this watershed includes Sequoia National Forest's Forest Management Plan and the Tulare County General Plan.

Collaboration/public involvement activities include USFS NEPA processes, BLM – Caliente Management Plan, and the Tulare County General Plan.

Data collection and sharing activities include the Southern Sierra Partnership's climate change adaptation and ecosystem services work and Sequoia National Forest's stream condition inventory.

## **Poso Creek Watershed Issues**

- ✓ downstream flooding,
- ✓ wildfire, wildlife connectivity,
- ✓ groundwater availability,
- ✓ quality and management,
- ✓ changing land use impacts on water quality and quantity.

## **Kern River Watershed**

Capacity in the Kern River Watershed to diversify its water management portfolio is moderate. The SSIRWMP Region and the Kern County Water Agency Region collaborate to co-manage the watershed.

Managing entities in the watershed include:

- ✓ the US Army Corps of Engineers,
- ✓ Sequoia National Forest,
- ✓ California Audubon Society,



- ✓ Desert Mountain RC&DC,
- ✓ California Department of Fish and Game,
- ✓ Tehachapi RCD,
- ✓ PG&E,
- ✓ Cal Water,
- ✓ ditch companies,
- ✓ water districts,
- ✓ Kern County Water Agency, and
- ✓ Native American Tribes.

Existing water management planning includes the Sequoia National Forest's Forest Management Plan, Tulare and Kern counties general plan, and California Department of Fish and Wildlife's Fishery Management Plan.

### **Kern Watershed Issues**

- ✓ flooding downstream after disturbance such as wildfire;
- ✓ reduced water quality because of recreation impacts;
- ✓ impaired water body listing;
- ✓ three species of endangered trout;
- ✓ wildlife connectivity;
- ✓ groundwater availability, quality, and management;
- ✓ relationship between land use impacts on water quality, quantity, and native species.

Collaboration and public involvement activities include Kern County Water Agency's IRWMP effort, Sequoia and Kings Canyon National Parks General Management Plan and other NEPA processes, USFS NEPA processes, BLM – Caliente Management Plan, Tulare County's General Plan, and the Upper Kern Recreation Management plan.

Data collection and sharing activities include the Southern Sierra Partnership's climate change adaptation and ecosystem services work, Sequoia National Forest's stream inventory assessment and watershed yield work, collecting water quality samples in the Upper Kern Watershed by watershed Coordinator.

### **Projects**

- ✓ upper Kern River recreation management study
- ✓ Kern River Fishery Management Program,
- ✓ Long Meadow Restoration Planning Project.

