

# Improving Utah's Water Quality

## San Rafael River Watershed



Utah State University  
COOPERATIVE EXTENSION

### MAJOR WATERBODIES

- San Rafael River
- Huntington Creek
- Cottonwood Creek
- Ferron Creek
- Muddy Creek
- Huntington North Reservoir
- Millsite Reservoir
- Electric Lake
- Joes Valley Reservoir

### MAJOR CITIES

- Huntington
- Castle Dale
- Ferron
- Orangeville
- Emery

### MAJOR LAND USES

- Coal Mining
- Rangeland
- Agriculture

### LOCAL WATER QUALITY ISSUES

- Salinity
- Dewatering
- Invasive Species
- Flooding

### LOCAL CONTACT:

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West Colorado River  
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### Watershed Description:

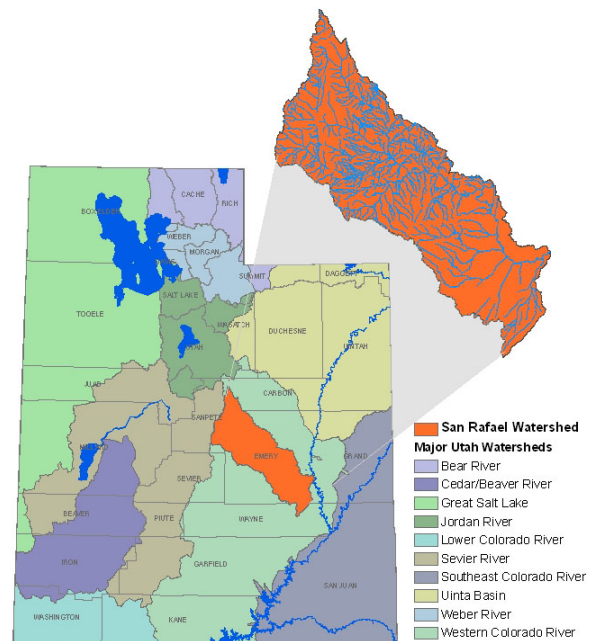
The San Rafael River in southeastern Utah is formed by the confluence of Huntington, Cottonwood, and Ferron Creeks. The San Rafael River is approximately 108 miles long and flows through some of the wildest landscapes in the state to its confluence with the Green River. The total watershed area is 2,432 square miles.



The San Rafael River is one of the most perturbed ecosystems in the state and is currently on the 303D list of degraded waters due to high concentrations of total dissolved solids. Total dissolved solids result from both natural sources and irrigation return flow over salt impregnated soils. Another principal effect of irrigation is the dewatering of large sections of the river in late summer. Most of the land

along the San Rafael River is managed by the BLM. The primary uses for this property include recreation and rangeland for cattle grazing.

In addition to the water quality and quantity problems, the river has been severely impacted by invasive species including tamarisk and Russian olive. These species have replaced much of the native vegetation along the riparian zone. The presence of tamarisk on sand bars within the river traps additional sediments, eventually narrowing and deepening the channel. This reduces the ability to carry large flows, which increases flooding. Non-native fish are currently found throughout the lower reaches of the river. Abundances of these species are low throughout the entire river; however, it is reasonable to expect that their numbers would increase with improved habitat.



# San Rafael River Water Quality Improvement

## Project Description:

A project is underway to remove nonnative tamarisk and Russian olive on 1,050 acres of state owned land on the lower San Rafael River. These areas will then be planted with native vegetation. Tamarisk and Russian olive seedlings will be treated with herbicide for 3 years following the removal to assure native vegetation becomes established. Riparian vegetation restoration will aid in the restoration of in-stream and riparian habitat. Currently 650 acres have been cleared of nonnative vegetation and planting on 322 acres was completed during winter 2010. Restoration monitoring will continue following the completion of this project.

Designs to restore connectivity between the upper and lower sections of river are being researched. Currently the Hatt diversion dam creates a barrier to upstream fish movement that is impassible at all flows. One potential solution to this is the removal of the diversion dam and replacement with a diversion that does not create a barrier. This design would also aid in the restoration of instream habitat.

Nonnative fish species in the San Rafael River pose a significant threat to native species. Techniques to control and eradicate nonnative fish species in the San Rafael River are being researched. One potential solution to this problem is the construction of a fish barrier that prevents the passage of nonnative fishes while allowing native species to pass near the confluence with the Green River.



## Partners

Bureau of Land Management  
Utah Division of Water Quality  
Utah Division of Wildlife Resources  
Emery County Mosquito and Weed Abatement  
Emery County Public Lands Council  
Emery Water Conservancy District  
Natural Resources Conservation Service  
PacifiCorp Energy  
The Tamarisk Coalition  
Utah Association of Conservation Districts  
Utah Department of Agriculture and Food  
Utah State University Extension

## Related Projects

Stream Restoration  
Irrigation Systems

## Funding

San Rafael River restoration efforts \$1,532,437  
Irrigation systems for Emery County salinity project \$90 million

**For funding opportunities in the San Rafael River Watershed, contact the San Rafael Conservation District.**

*To learn how you can participate or lend your support to Utah community water quality projects, please contact your local conservation district or county agent.*

Produced by USU Water Quality Extension, Utah Watershed Coordinating Council, Utah Association of Conservation Districts, and Utah Division of Water Quality.

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