

# Stream Management Plan Grantee Project Summary

## South Fork Republican Restoration Coalition: Stream Management and Restoration Planning Project

### Geographic Description:

South Platte Basin:  
South Fork of the Republican River

### Size:

About 60 river miles

### Project Homepage:

<http://bit.ly/SouthForkRepublicanSMRPP>

### Primary Contact:

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Republican River Water Conservation  
District  
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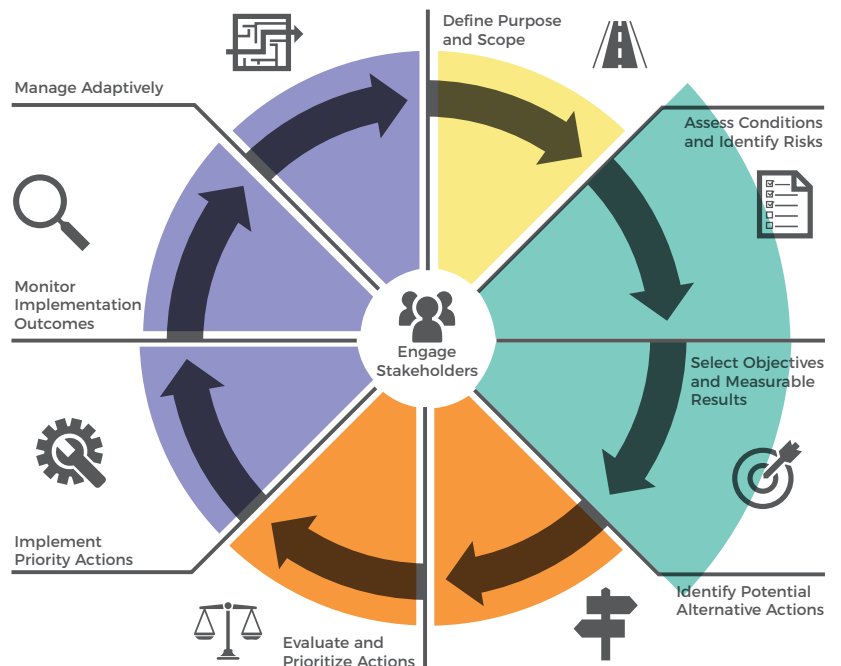
### Project Timeline



### Stakeholder Groups Involved in Planning Process

- Agricultural producers
- Riparian landowners
- Aquatic and riparian science
- Environmental advocacy
- Utilities or other water management
- Recreation & tourism
- Local government & land use planners
- State and federal agencies

### Current Planning Phase



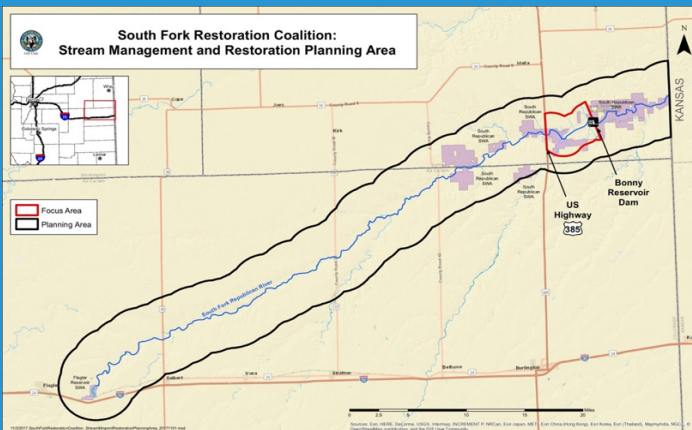
## Project Goals

- Improve in-stream surface flows in the planning area, within the parameters of the legal requirements of the Republican River Compact between Colorado, Kansas, and Nebraska
- Restore riparian and riverine habitat to address wildlife and native fish habitat needs, and reduce invasive vegetation
- Create future recreation-based economic opportunities in the project planning area

## Overview

### Geography:

This planning effort will cover the South Fork Republican River from Flagler to the Kansas state line, with a detailed focus on the section from Highway 385 to the Bonny Dam.



### Users:

The economy of the Republican River basin is centered on agriculture. Ongoing depletion of the local aquifer threatens agricultural producers who depend on groundwater as well as surface flows. Bonny Reservoir historically was a popular recreation site for fishing and boating and brought in tourism from across state lines. The South Fork of the Republican is an important source for water delivery obligations from Colorado to Kansas and Nebraska, as outlined in the 1942 Republican River Compact.

The 1942 Republican River Compact allots Colorado 25,400 acre feet of Republican River Basin water annually. In 2000, the Compact was amended to include groundwater in addition to surface flows, which caused Colorado to eventually drain Bonny Reservoir in 2012. Yuma County reports that Bonny Reservoir hosted an average of 50,000 visitors annually from 2000-2011 and was an important local economic resource.

### Need for planning:

The key water management challenges in the basin include 1) compliance with the Republican River Compact between Kansas, Colorado, and Nebraska, 2) continued depletion of the Ogallala Aquifer resulting in diminished surface flows and water for agriculture, and 3) increased pressure on already stressed native fish populations from diminishing flows. Through this planning effort, project partners seek to explore the economic potential of new river-related recreation opportunities.

## Approach

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The South Fork Republican Stream Management and Restoration Planning Project is being led by the South Fork Restoration Coalition, which consists of Yuma County, Republican River Water Conservation District, Colorado Parks and Wildlife, Three River Alliance, and The Nature Conservancy. The Republican River Water Conservation District acts as the fiscal sponsor.

The Coalition hired Colorado State University's Colorado Water Institute to manage and oversee stakeholder engagement and solicit input throughout the planning process. The Coalition is actively engaging the Bureau of Reclamation, Yuma County Pest Control District, Natural Resource Conservation Service, Partners for Wildlife, Rocky Mountain Bird Observatory, Pheasants Forever, Audubon Society, and surrounding residents in Wray, Burlington, Saint Francis, and Goodland.

The South Fork Restoration Coalition is working with Stillwater Sciences and Otak Inc. to conduct their assessments. The South Fork Restoration Coalition will divide their assessments and planning efforts into five parallel tasks, each with their own specific objectives:

- River Channel and Floodplain Restoration Assessment, Feasibility Analysis and Preferred Engineering Concept Design: to restore water and sediment load conveyance regimes disrupted by Bonny Dam, without impacting the dam's storage capacity and flood control intent.
- Riparian Corridor and Riverine Habitat Restoration Plan: to assess, evaluate management alternatives and construct a River Corridor Restoration

Plan to improve riparian habitat.

- Hydrology Assessment to Determine Surface Flow Needs: to assess the hydrologic regimes in the watershed to elevate stream function and support fish populations using existing data models.
- Native Fish Population and Habitat Research: To identify potential fish habitat using habitat evaluation surveys.
- Recreation Economic Opportunities Assessment: to explore alternatives for recreation at the former reservoir site.



## Variables and Inventory Assessment Level

Depending on the purpose and scope determined by local stakeholders, assessments employ different methodologies to evaluate a suite of specific parameters related to stream health and ecosystem goods and services. The comprehensiveness of the data is will vary depending on what is needed to answer core questions addressed by the SMP, ranging from less precise (general, often anecdotal or third-party information) to more precise (data-driven, quantitative metrics). The South Fork Republican Stream Management and Restoration Plan is assessing the following variables to evaluate watershed health and delivery of ecosystem services.

	Variable	Assessment Level
Ecological Integrity:		
●	Existing Flow Regime	Less Precise
●	Future Flow Regime	Less Precise
●	Sediment Regime	Moderate
	Water Quality	
●	Network Connectivity	Moderate
●	Floodplain Hydrology	Less Precise
●	Riparian Vegetation	More Precise
●	Stream Corridor Dynamics	Moderate
●	Structural Complexity	Moderate
●	Aquatic Biota	Moderate
Regulating and Maintenance:		
●	Flood Regulation	Less Precise
●	Groundwater Recharge	Less Precise
●	Erosion Control	Moderate
●	Pest Regulation	Moderate
●	Regulatory Compliance	Moderate
Provisioning:		
●	Agricultural Production	Less Precise
	Drinking Water Supply	
	Industrial Processing	
	Hydropower Production	
Cultural:		
●	Aesthetics and Intrinsic Values	Less Precise
●	Symbolic/Emblematic Species	Less Precise
●	Boating Recreation	Less Precise
●	Angling Recreation	Less Precise

## Budget

Contributing Entity	Amount and Form of Match
CWCB Watershed Restoration Fund	\$99,000 cash
The Nature Conservancy	\$120,000 cash and \$10,000 in kind
Colorado Parks and Wildlife	\$28,000 in kind
Republican River Water Conservation District	\$25,500 in kind
<b>Total</b>	<b>\$282,500</b>

Photo credit by page: (1) Wikipedia, (3) City of Wray



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Colorado Water  
Conservation Board  
Department of Natural Resources