

An aerial photograph of a river system. The river flows from the top left towards the bottom center, where it passes through a small dam. The surrounding landscape is a mix of green grass, trees, and some brownish soil. A small house and other buildings are visible on the left side of the river. The text "Stream Management Planning" is overlaid in white, bold, sans-serif font across the upper portion of the image.

Stream Management Planning

Lessons Learned From the Rio Grande Basin

Sustaining Colorado Watersheds

October 2019



2015

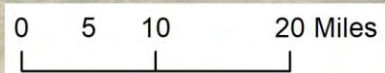
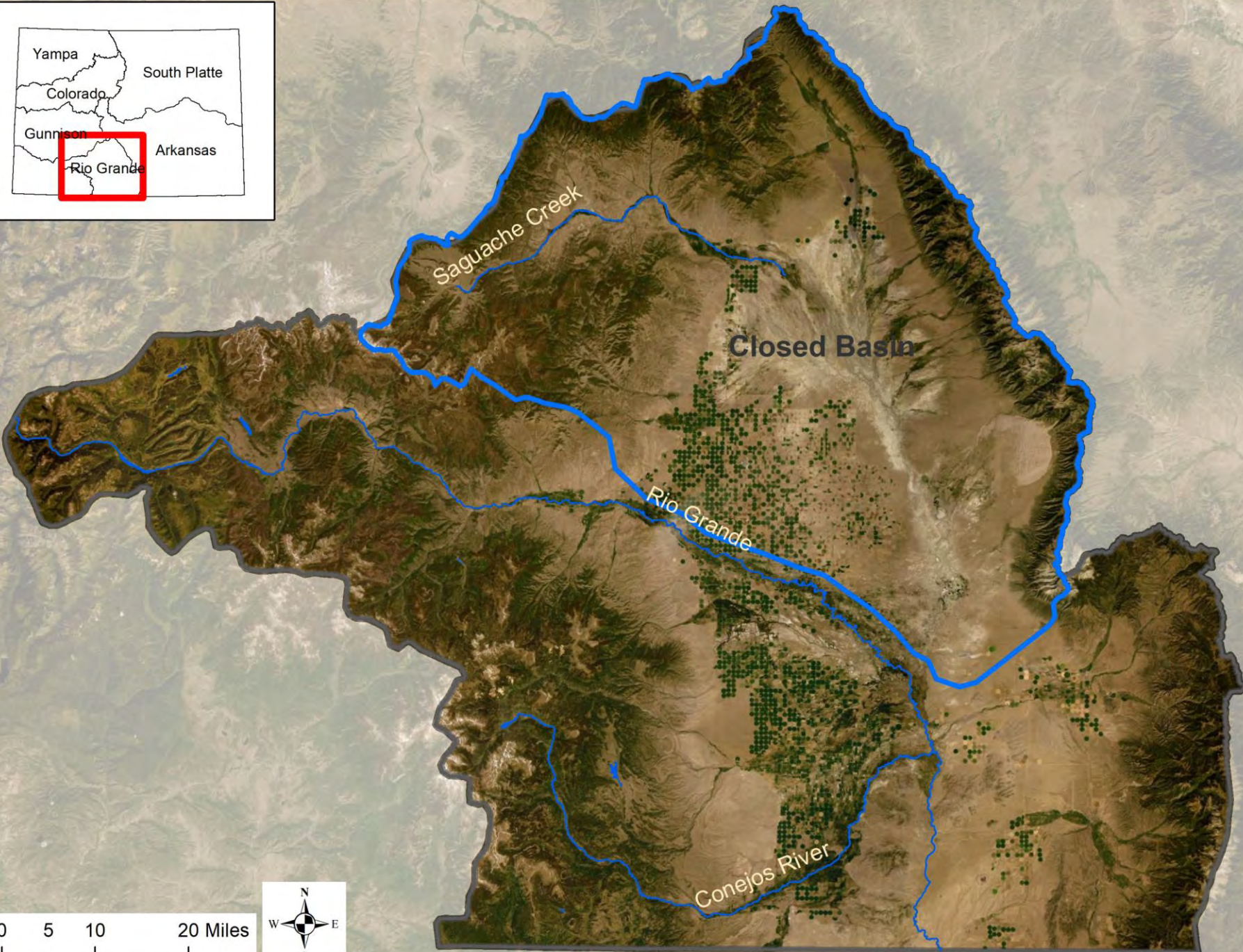
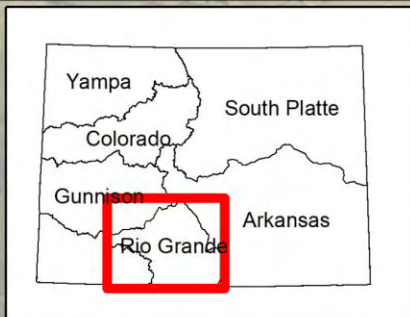
COLLABORATING ON COLORADO'S WATER FUTURE

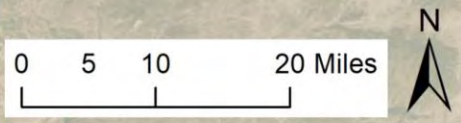
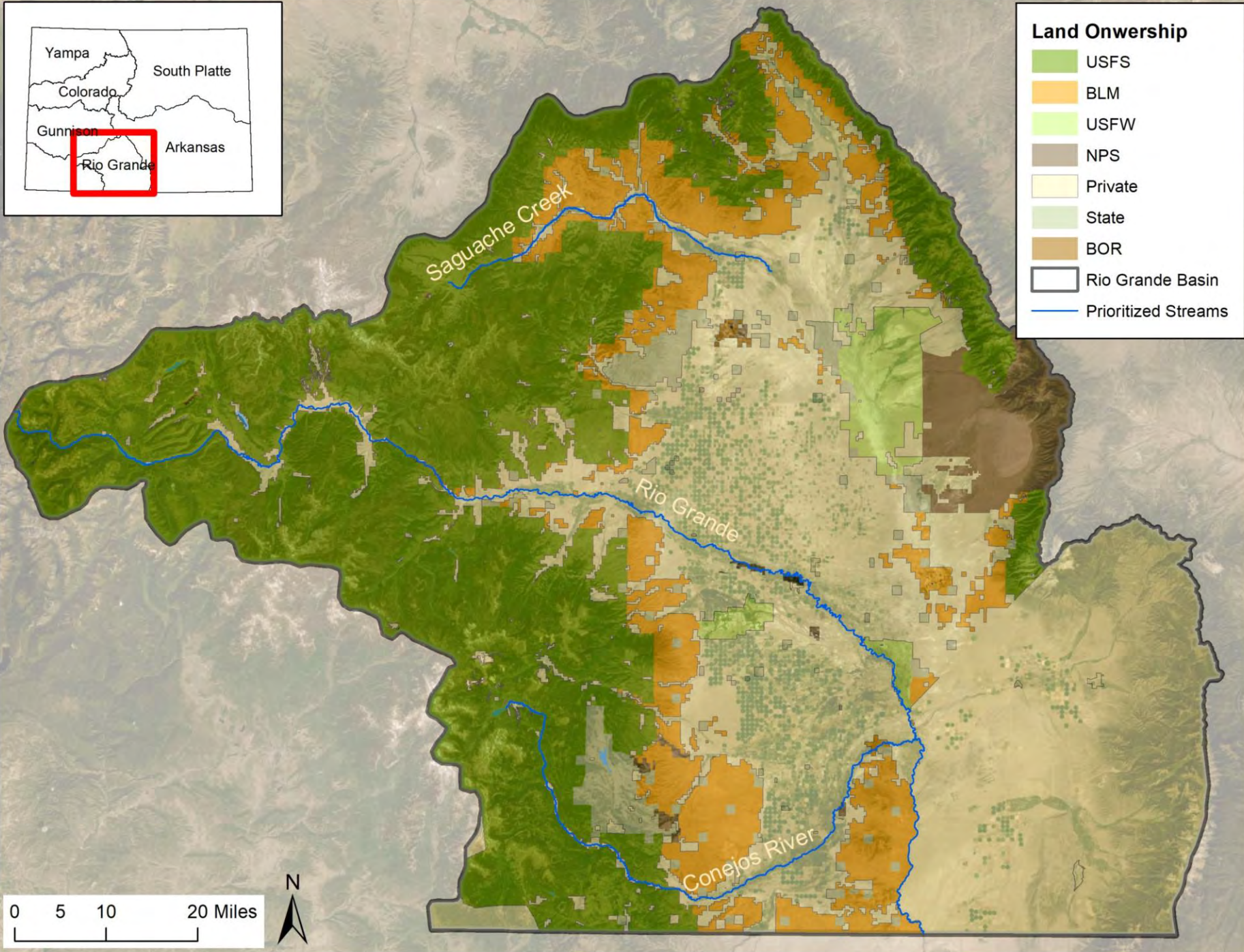
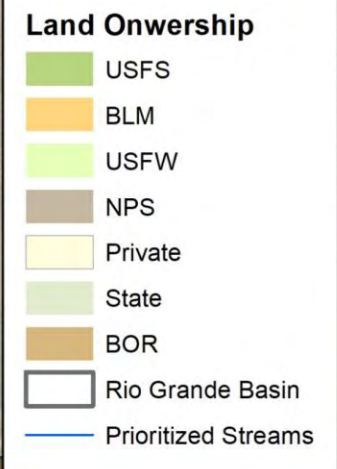
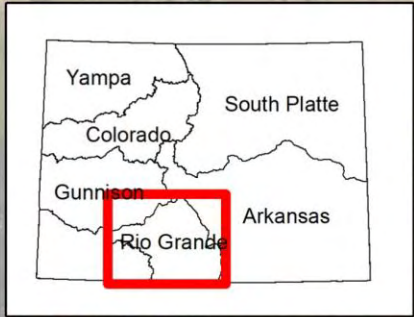
COLORADO'S WATER PLAN

The collage features several distinct images: a cowboy on a horse, a dam with water flowing over it, a sunset over a body of water, a group of people sitting together, a river winding through a landscape, a wind turbine, a red barn with a tractor, and a soccer game in progress.

















Zimmatic



An aerial photograph showing a winding river system through a landscape. The river flows from the top left towards the bottom center. The surrounding area includes green fields, some trees, and a large, reddish-brown reservoir in the upper left corner. The text is overlaid on the image.

SMPs should...

“Identify flows and other physical conditions needed to support environmental and recreational water uses”

- 2015 Colorado Water Plan

An aerial photograph of a river landscape. The river flows from the top left towards the bottom center, curving to the right. The surrounding area is a mix of green fields, some brownish soil, and clusters of trees. In the upper left, there are a few small buildings and a dirt road. The overall scene is a natural, somewhat rural setting.

SMP Key Ingredients

- **Get to know your stakeholders & their values!**
- **Assess river conditions (geomorphology, riparian vegetation, etc)**
- **Communicate science to stakeholders**
- **Identify & prioritize projects & management objectives (aligned with diverse stakeholder values)**
- **Get projects on the ground!!**

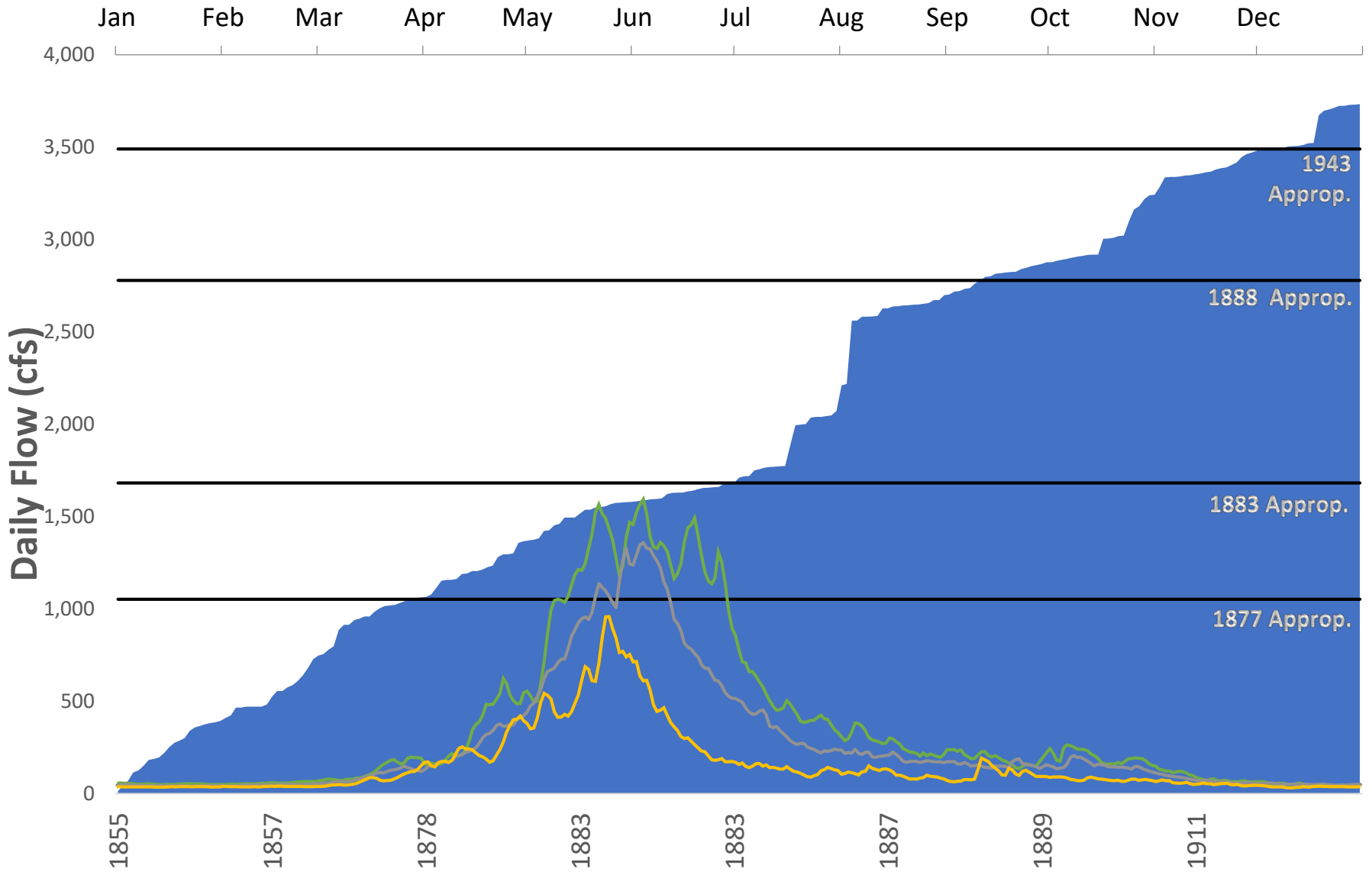
An aerial photograph showing a river meandering through a landscape. The river is dark blue and flows from the top left towards the bottom center. The surrounding land is a mix of green fields, some brownish soil, and clusters of trees. In the upper left, there are several small buildings, possibly a farm or a small settlement. The overall scene depicts a rural, agricultural area with a significant water body.

SMP Challenges

- Limited flexibility in an over-appropriated basin
- Climate change - increasingly extreme weather
- Presenting easily accessible data on river health
- Why Should I care?! Gaining community trust and buy-in

Conejos Basin (Water District 22)

Cumulative Absolute Surface Water Rights vs. Daily Flow



- Cumulative Water Rights
- Conejos River nr Mogote - Average Year
- Conejos River nr Mogote - Wet Year
- Conejos River nr Mogote - Dry Year



September 2019



September 2018





ECOLOGICAL INTEGRITY ASSESSMENT (EIA) - DATA SHEET

Environmental Description & Classification of AA

Site ID: Conejos 9

Date: 7/31/18

Classification: (see manual to key best match)

Ecological System: RM Lower Montane Riparian Woodland/Shrubland

Fidelity: High / Med / Low

Cowardin Classification:

Fidelity: High / Med / Low

Confined/Unconfined Valley: Valley width < 2x bankfull width

X Valley width > 2x bankfull width

Comments:

Major Zones Present: Stratum = Forest/woodland, Shrubland, Herbaceous, Submerged/Floating, Sparsely Vegetated, Open Water, or Bare/Rock

Zone 1 oo Dom stratum: Dom spp: % of AA: 45%

Zone 2 2Z2 Dom stratum: P. angustifolia/S. exigua Dom spp: % of AA: 30%

Zone 3 YV Dom stratum: Dom spp: % of AA: 15%
10%

Wetland / Riparian / Upland Inclusions (should = 100%)

— % AA with true wetland and/or water

100 % AA with non-wetland riparian area

— % AA with upland inclusions (should be < 10% total AA)

Stream Flow Duration:

X Perennial Intermittent (seasonal) Ephemeral (flow an immediate response to precipitation)

Proximity to Channel

— AA includes channel and both banks

X AA is adjacent to or near channel (< 50 m) and evaluation includes one or both banks

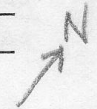
— AA is > 50 m from channel and banks were not evaluated

AA Representativeness and Other Comments:

Is AA is typical of surrounding wetland? Does AA encompass entire wetland?

Assessment Area Description and Drawing:

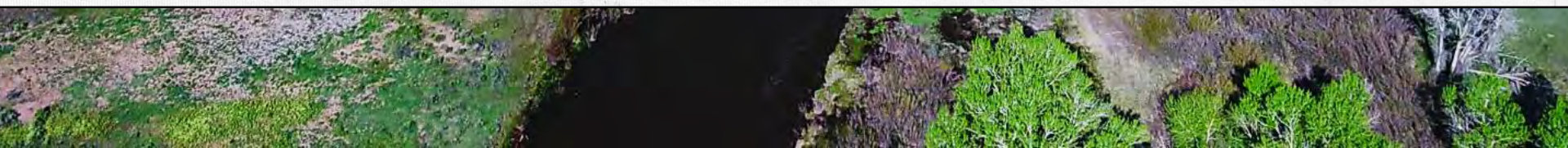
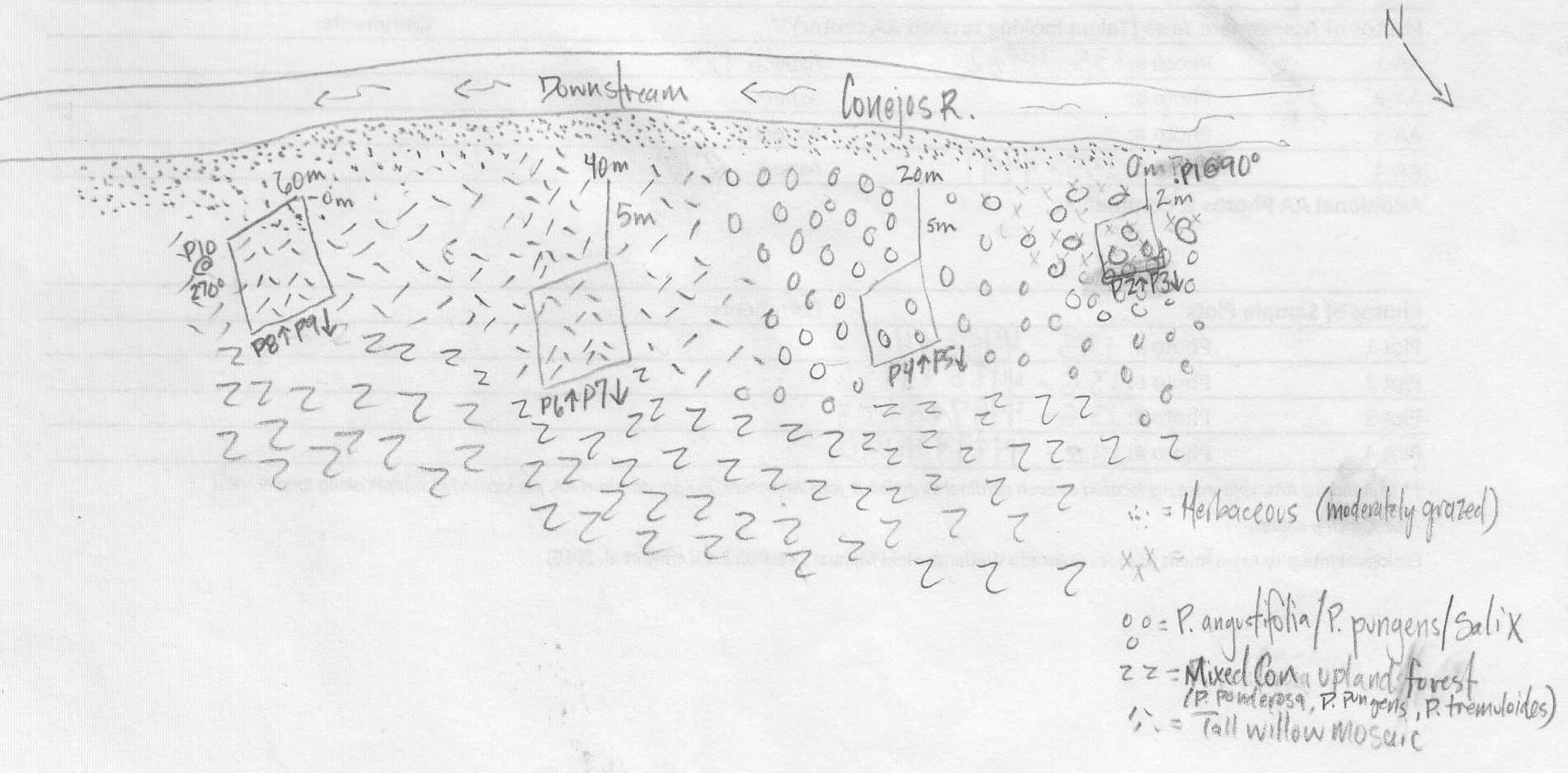
(Include north arrow and scale bar. Include veg plot layout, habitat features, biotic/abiotic zones, direction of drainage)

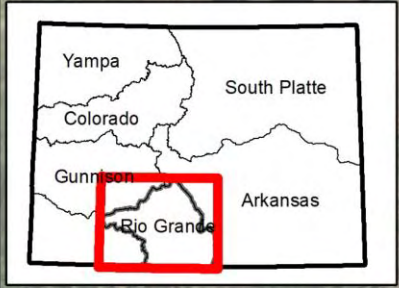




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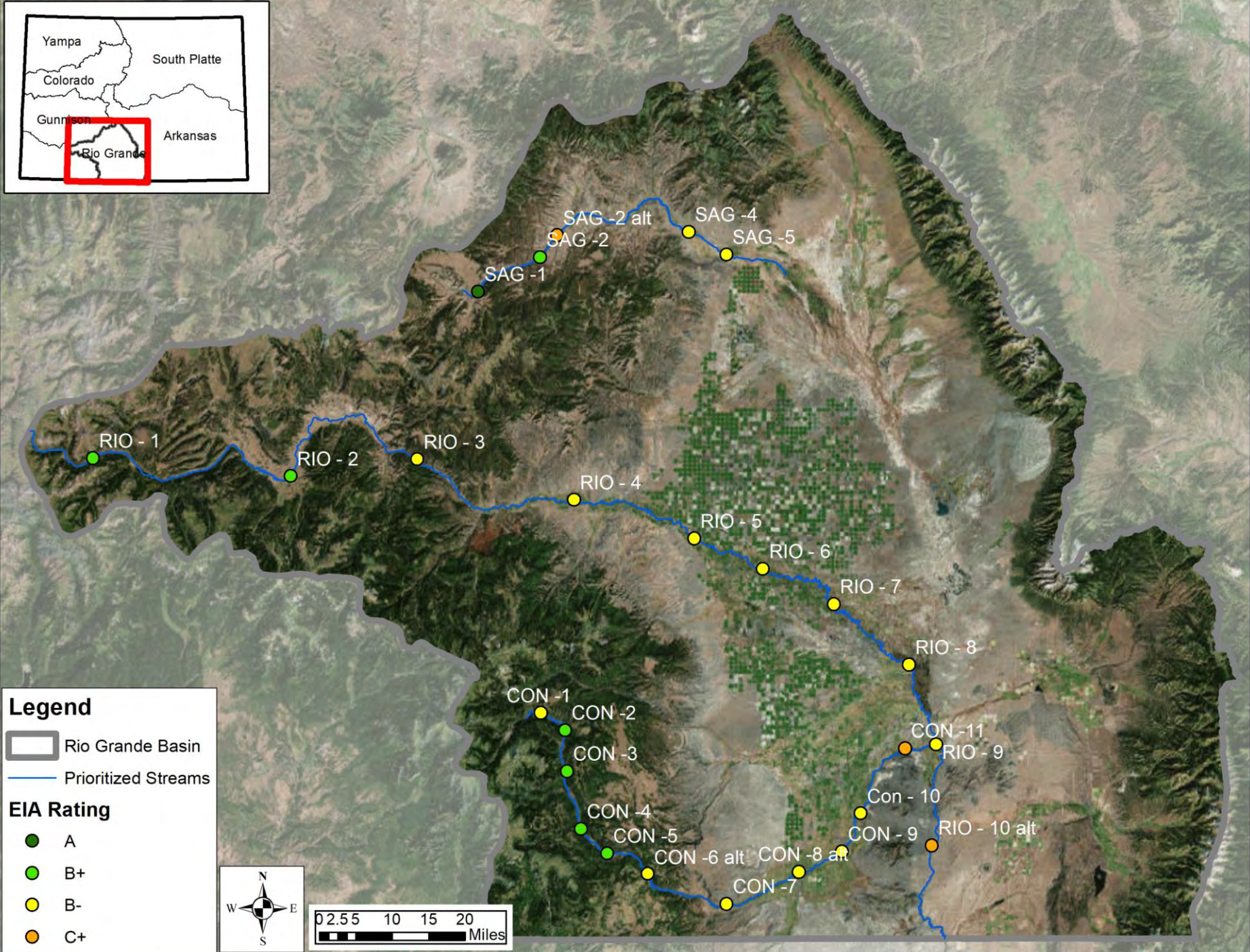
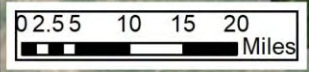
Legend

Rio Grande Basin

Prioritized Streams

EIA Rating

- A
- B+
- B-
- C+



An aerial photograph of a river system. The river flows from the top left towards the bottom center, where it passes through a small dam or weir. The river is dark blue/black. The surrounding landscape is a mix of green grasslands, some brownish scrubland, and clusters of green trees. In the upper left, there are some buildings and a large, flat, reddish-brown area, possibly a field or a reservoir. The text "Why Should I Care?" is overlaid in white, sans-serif font in the upper middle part of the image.

Why Should I Care?





Headgate looking downstream



Headgate outlet



Headgate and diversion dam



Diversion dam looking downstream



Diversion dam looking upstream



Flume looking downstream



RIO GRANDE INSTREAM INFRASTRUCTURE INVENTORY

BIG MEADOW DITCH

PHOTO LOG

Saguache Creek Stream
Management Plan



SAGUACHE CREEK DIVERSION INFRASTRUCTURE INVENTORY

Structure Name: BIG MEADOW D

Reported By: Daniel Boyes

Date: April 11, 2019

Location:	Latitude	Longitude
	38.102882	-106.206535

Headgate Type: Manually operated 2.5' wide screw gate

Headgate Condition:	A <input type="checkbox"/>	Diversion and other Condition:	A <input type="checkbox"/>	Structure Submerged:	Yes <input type="checkbox"/>	Reason Submerged:
	B <input checked="" type="checkbox"/>		B <input type="checkbox"/>		No <input checked="" type="checkbox"/>	
	C <input type="checkbox"/>		C <input checked="" type="checkbox"/>			
	D <input type="checkbox"/>		D <input type="checkbox"/>			
	F <input type="checkbox"/>		F <input type="checkbox"/>			

Repair(s) or Improvement(s) Currently Needed: The diversion dam should be improved to mitigate debris accumulation. The flume is aging and may need to be replaced in the near future.

Structure Description: The ditch is located on the outside of a meander. The diversion dam is a combination of boulders, sheet metal, fencing, and concrete. The diversion constricts the stream and appears to be causing erosion downstream. Woody debris accumulates at the headgate and on the diversion dam. The headgate is tilted and could be reset.

Comments: This ditch is a priority 5.

Notes:

Estimated Range of Cost: Moderate



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Developing Meaningful & Multi-benefit Projects

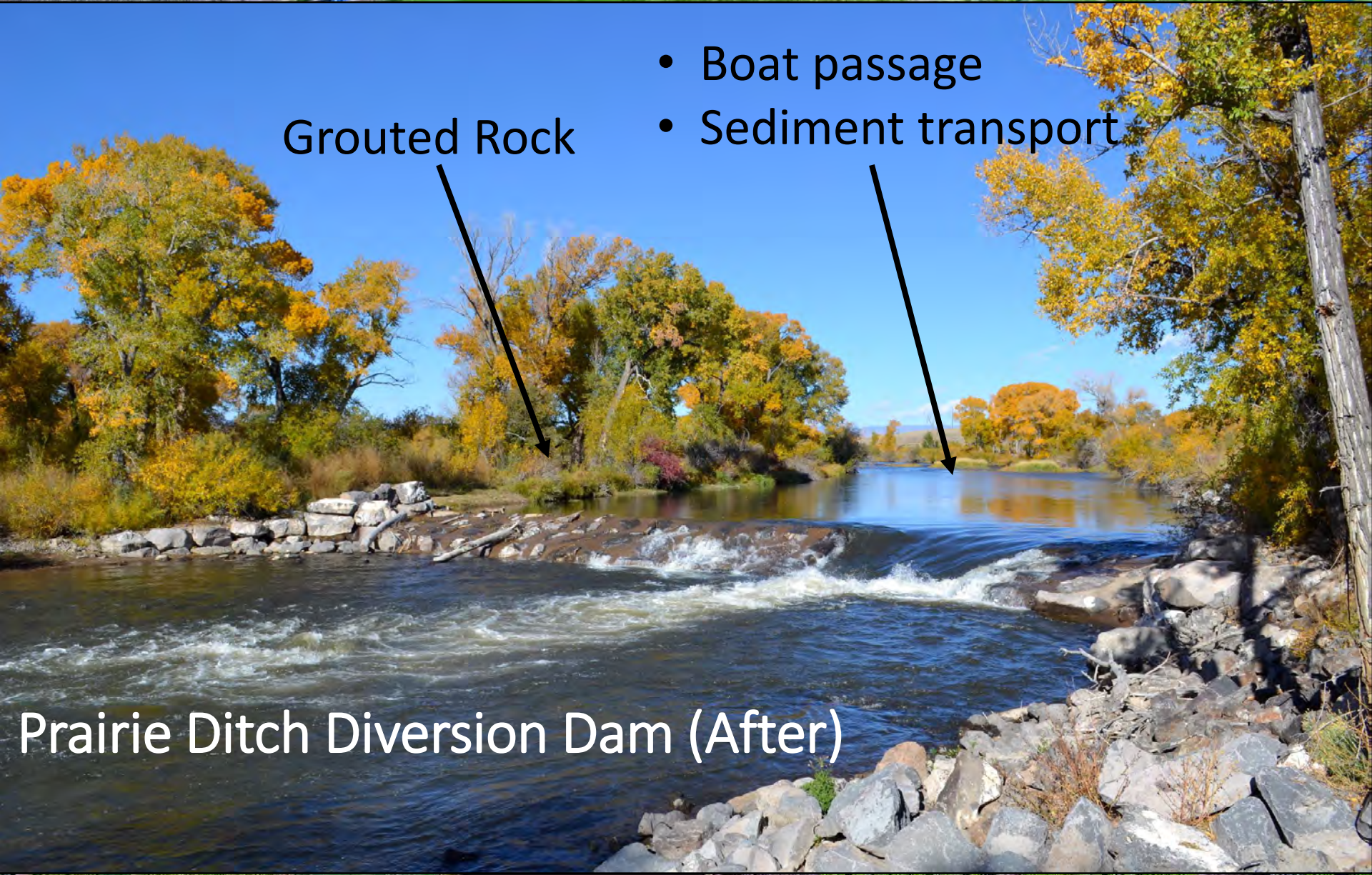


Prairie Ditch Diversion Dam (Before)



Grouted Rock

- Boat passage
- Sediment transport



Prairie Ditch Diversion Dam (After)



Lessons Learned

- **Work flexibility and adaptive management into your planning effort**
- **Know your stakeholders and represent them!**
- **Gain community trust – this takes time!**
- **Find ways to present easily accessible information on river health**
- **Work toward multi-benefit projects that are aligned with stakeholder values**