

SAN FRANCISCO WATERSHED

(HUC 15040004)

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SAN FRANCISCO (HUC 15040004)

In New Mexico, the San Francisco River mainstem and all tributaries.

Designated uses by reach within HUC 15040004

The San Francisco River mainstem from the New Mexico–Arizona line upstream to State Highway 12 at Reserve, and perennial reaches of Mule Creek: irrigation, marginal warmwater and marginal coldwater aquatic life, wildlife habitat, livestock watering, and secondary contact.

WQS Section 20.6.4.601

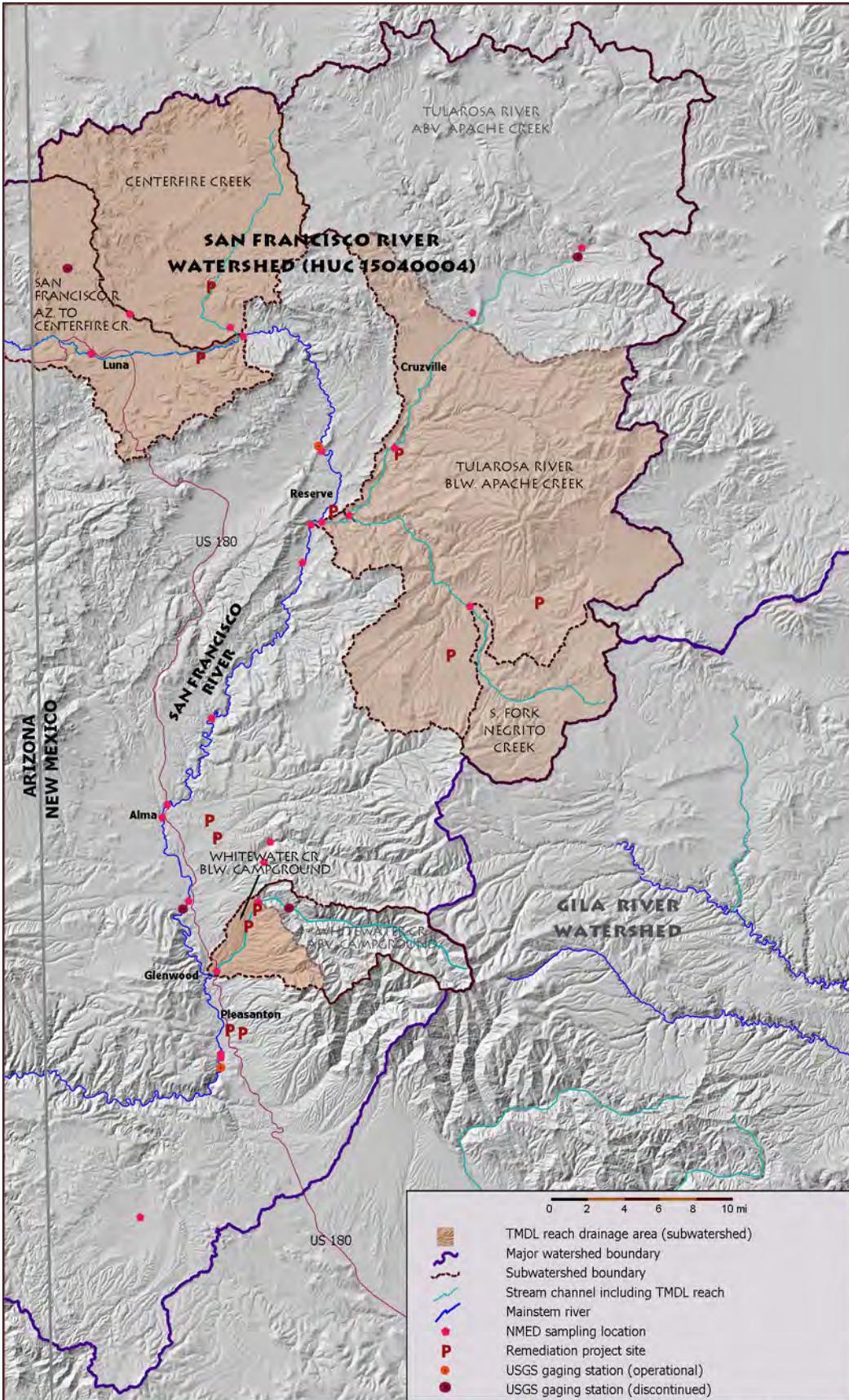
San Francisco mainstem from State Highway 12 at Reserve upstream to the New Mexico–Arizona line: irrigation, coldwater aquatic life, wildlife habitat, livestock watering, and primary contact.

WQS Section 20.6.4.602

All perennial reaches of tributaries to the San Francisco River from the confluence of Whitewater Creek, including Whitewater Creek: domestic water supply, irrigation, fish culture, high quality coldwater aquatic life, wildlife habitat, livestock watering, and secondary contact.

WQS Section 20.6.4.603

Link to WQS: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf>



CENTERFIRE CREEK SUBWATERSHED (SAN FRANCISCO RIVER TO HEADWATERS)

TMDL reach length: 16.1 mi; **Subwatershed area:** 138 sq. mi.

Elevation range: 6700–9000 ft.

Watershed cover: 75% forested; 25% rangeland; <1% wetland

Watershed management: 90% USFS (Quemado RD); 10% private (primarily in valley bottom)

Wilderness: none

Counties [SWCDs]: Catron [San Francisco]

TMDL: http://www.nmenv.state.nm.us/swqb/Conductivity_TMDL_in_Centerfire_Creek_11-05-01.pdf

Record of Decision: <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/AppendixB/2004-2006ROD.pdf>

WQS reference: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf> (Section **20.6.4.603**)

TMDL parameter exceeded: Conductivity

Current exceedance: Conductivity as total dissolved solids exceeds standard by 690 lbs/day (23%)

Unsupported use: high-quality coldwater aquatic life

Possible mechanisms	Action (identification of MPs)	Possible MPs
Streambank destabilization, channel widening and incision of fine-grained soils Loss/inhibited regeneration of streambank vegetation (filtration) Roads: sediment runoff effects Reduced base flow due to increased floodplain evaporation/infiltration rates Grazing effects (livestock and elk) Historic agricultural practices and fire suppression; consequent reduction in herbaceous cover; increased sediment runoff to channel Watershed gullyng Wetland dessication	Evaluate riparian grazing effects, particularly by elk, for potential fencing projects Evaluate stream bank condition; vegetative cover Evaluate potential sites for water projects (grazing management) Evaluate current condition of Spur Ranch project (depositional enhancement) Evaluate trail and road impacts, particularly road crossings Evaluate upland herbaceous cover and forest densities Identify potential gully remediation sites Evaluate tributary wetland conditions	Streambank filter strips or near-channel pole/post/herbaceous plantings (with fencing: substantial elk deprecation of prior plantings has occurred) Channel deposition enhancement (2-phase project completed) Bridges or improved design and construction of low-water crossings Prescribed burning/thinning to improve native ground cover (some projects completed) Grazing management: water projects or herding Road realignment; culvert and trail improvements; OHV closures Wetland and floodplain remediation to improve base flow conditions

CENTERFIRE CREEK SUBWATERSHED (SAN FRANCISCO RIVER TO HEADWATERS)—continued

TMDL reach length: 16.1 mi; **subwatershed area:** 138 sq. mi

Elevation range: 6700–9000 ft.

Watershed cover: 75% forested; 25% rangeland; <1% wetland

Watershed management: 90% USFS (Quemado RD); 10% private (primarily in valley bottom)

Wilderness: none

Counties [SWCDs]: Catron [San Francisco]

TMDL: http://www.nmenv.state.nm.us/swqb/Plant_Nutrients_TMDL_for_Centerfire_Creek_12-13-2001.pdf

Record of Decision: <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/AppendixB/2004-2006ROD.pdf>

WQS reference: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf> (Section **20.6.4.603**)

TMDL parameter exceeded: Plant nutrients

Current exceedance: Aquatic productivity exceeds standard by 7.7 lbs/day (248%)

Unsupported use: high-quality coldwater aquatic life

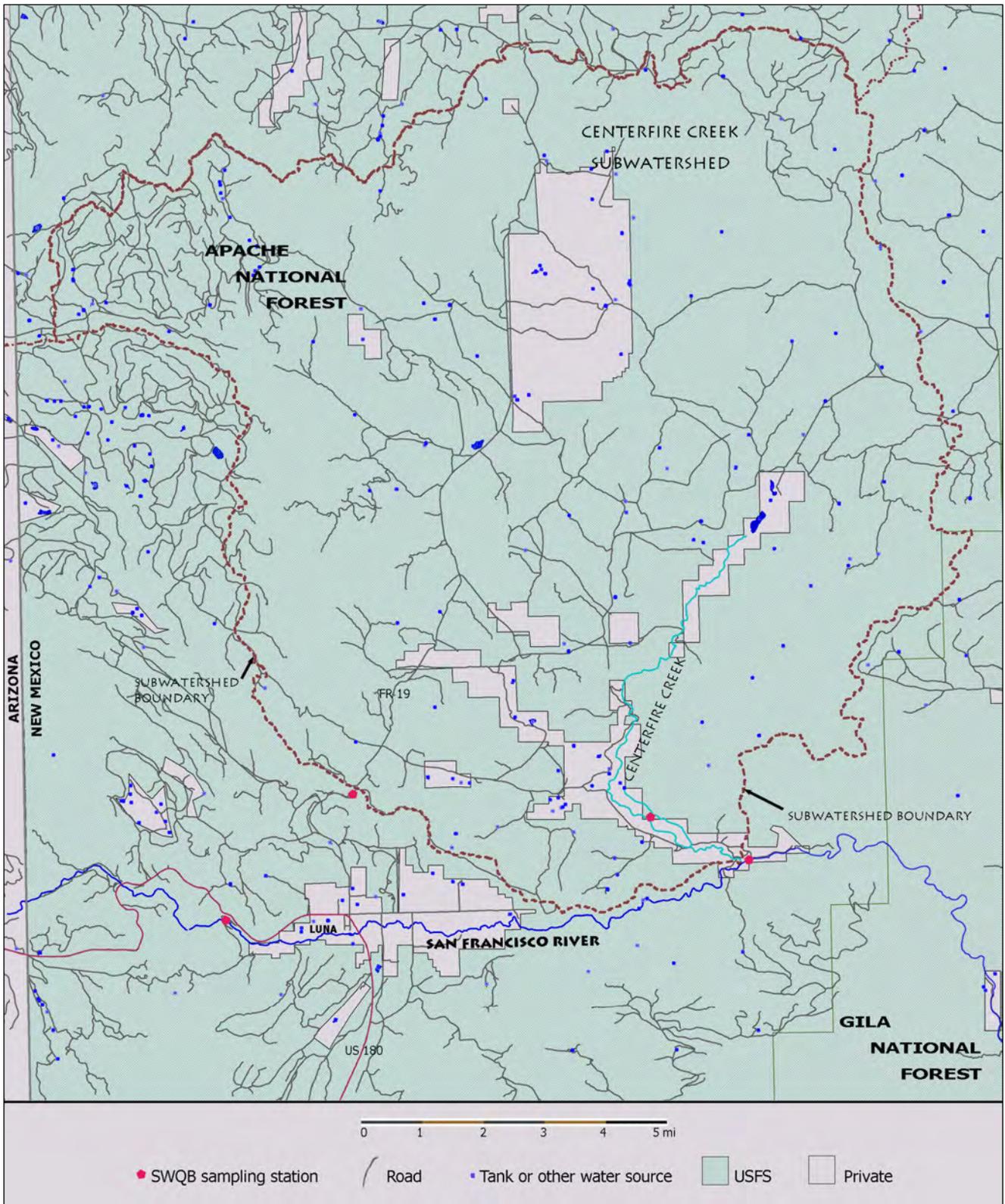
Possible mechanisms	Action (identification of BMPs)	Possible BMPs
<p>Animal waste (elk, livestock)</p> <p>Loss of filtration mechanisms: wetland dessication, inhibited streambank regeneration, lost upland herbaceous cover</p> <p>Direct floodplain and streambank destabilization from historic farming practices and gully effects (nutrient transport via bank and gully sediments)</p> <p>Sunlight: lack of riparian vegetation may increase aquatic plant productivity</p> <p>Increased plant nutrient concentrations due to reduced baseflow</p>	<p>Evaluate riparian grazing effects, particularly by elk, for potential fencing projects</p> <p>Evaluate stream bank condition; vegetative cover</p> <p>Evaluate potential sites for dispersed water projects (grazing management)</p> <p>Evaluate current condition of Spur Ranch project (potential for riparian recruitment)</p> <p>Evaluate upland herbaceous cover and forest densities</p> <p>Identify potential gully remediation sites</p> <p>Evaluate wetland conditions in upper watershed for potential baseflow improvements</p>	<p>Brush layer, filter strip; streambank plantings to provide filtration; riparian exclosures</p> <p>Wildlife dispersion practices</p> <p>Prescribed thinning; burns in uplands (projects underway)</p> <p>Additional channel deposition enhancement (2-phase project completed)</p> <p>Prescribed burning/thinning to improve native ground cover (some projects completed)</p> <p>Grazing management: water projects or herding</p> <p>Wetland and floodplain remediation to improve base flow conditions</p>

CENTERFIRE CREEK SUBWATERSHED—continued

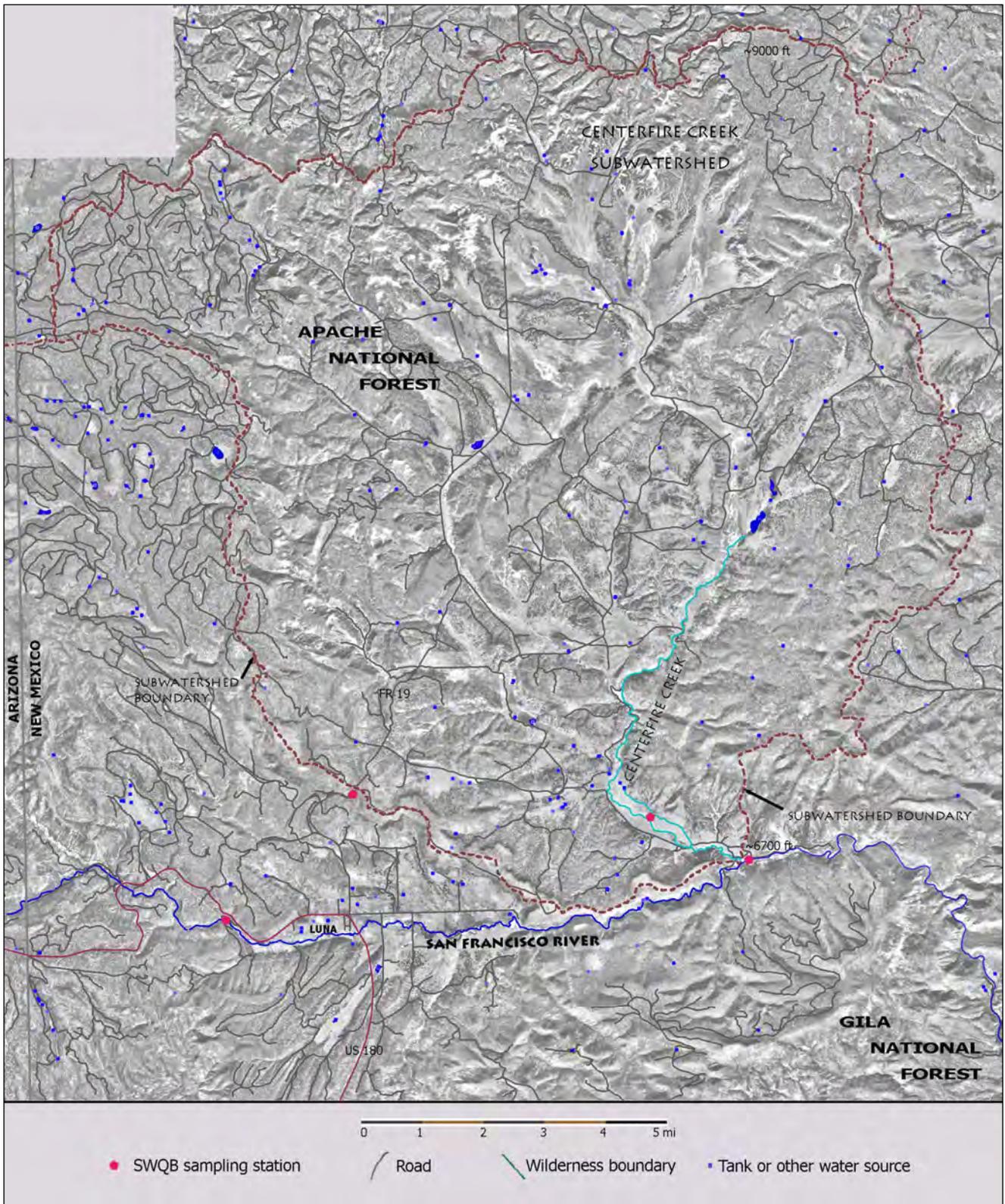
Milestones	Schedule	Target criteria
Measurable aggradation in sediment retention basin Filter or bank planting sites targeted Re-establishment of 10% floodplain vegetation near existing project site Riparian exclosures Prescribed thinning on uplands to enhance herbaceous cover (NM State Forestry & partners) Other wildlife dispersion measures in place Wetland and floodplain remediation to improve base flow conditions Additional potential wetland reclamation sites identified	2005 and continuing 2005 and continuing 2010 Partial, 2005; continuing Partially complete, 2005; continuing 2010 GNF project complete, 2001 2008	Conductivity: Riparian buffer establishment on 10% of floodplain zone 20% increase in terrace herbaceous cover 2010 target: Reduce total dissolved solids by 20% to 275 mg/L (approx. 3,000 lbs/day) Additional 2-acre wetland reclamation complete Plant nutrients: Riparian buffer establishment on 10% of floodplain zone 20% increase in terrace herbaceous cover 2010 target: Reduce aquatic vegetation productivity by ~25%, from 3.7 mg/L dry weight to 2.8 mg/L (~8 lbs per day)
<p>Monitoring (suggested monitoring protocols are described in Section 6):</p> <ul style="list-style-type: none"> ▪ SF SWCD currently monitors water quality on the San Francisco mainstem just downstream of the Centerfire Creek confluence under a QAPP developed by NMED, in addition to regular NMED/SWQB monitoring and sampling at established stations.. ▪ Prescribed burning: protocols for tree cover density, line-point intercept for herbaceous cover ▪ Photo points <p>Note. A Safe Harbor Agreement is in place between USFWS and a private landowner for a number of species, including loach minnow.</p>		



Map TMDL-28. Topographic map, Centerfire Creek subwatershed. Base image from USGS 1: 24000 quads. All data from USGS, NMED, and USFS Gila National Forest.



Map TMDL-29. Land management status map, Centerfire Creek subwatershed. All data from NMED, USGS and USFS Gila National Forest.



Map TMDL-30. Aerial photography relief map, Centerfire Creek subwatershed. Base image: 1996-2002 USGS digital orthophotoquads. All data from NMED, USGS and USFS Gila National Forest.

CENTERFIRE CREEK— continued



Centerfire photos, clockwise from top left: View south across Centerfire Creek valley approx. 3 mi. upstream of San Francisco River confluence, June 2001; tour of Centerfire Creek §319 project by landowner, October 2005; Gila N. F. wetlands project on Arroyo Grande, a significant, ephemeral Centerfire Creek tributary, June 2001; typical cutbank on creek, October 2005; sampling station at project site, March 2001. All 2001 photos courtesy NMED, Silver City.