

**TULAROSA RIVER SUBWATERSHED, SAN FRANCISCO RIVER TO APACHE CREEK**

**TMDL reach length:** 22 mi; **Subwatershed area:** 336 sq. mi (to Apache Creek); 640 sq. mi total

**Elevation range:** 6400 ft to 7600 ft.

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

**Watershed management:** 98% USFS (Reserve RD); 2% private

**Wilderness:** none

**Counties [SWCDs]:** Catron [San Francisco]

**TMDL:** [http://www.nmenv.state.nm.us/swqb/Conductivity\\_TMDL\\_in\\_Tularosa\\_Creek\\_11-05-01.pdf](http://www.nmenv.state.nm.us/swqb/Conductivity_TMDL_in_Tularosa_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

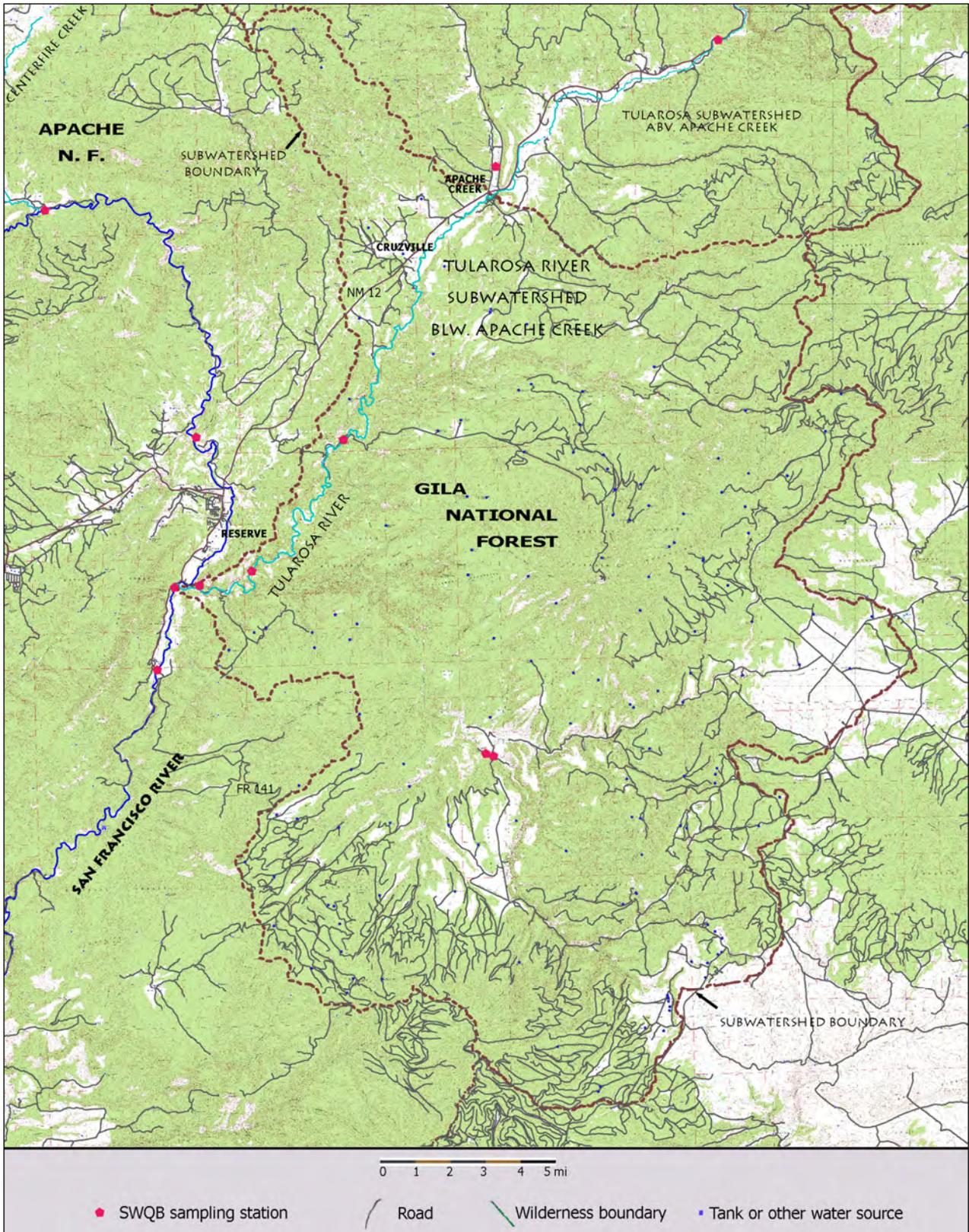
**Current exceedance:** Conductivity as total dissolved solids exceeds standard by 86 lbs/day (< 2%)

**Unsupported use:** high-quality coldwater aquatic life

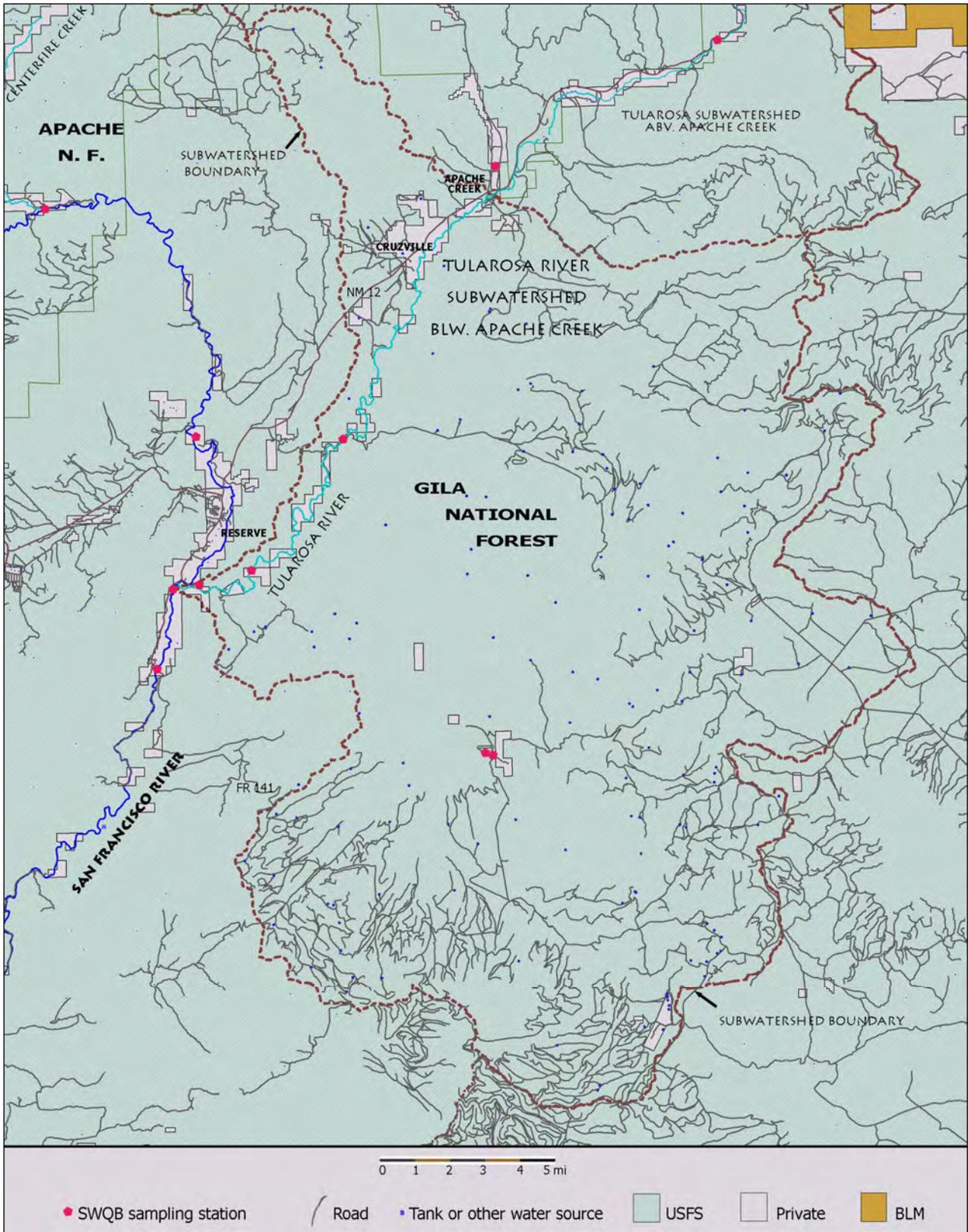
Possible mechanisms	Action (identification of MPs)	Possible MPs
Loss and inhibited regeneration of streambank vegetation (filtration) Direct grazing impacts in riparian zone, including soil compaction Road/OHV impacts, especially at low water crossing Sediment loading from destabilized streambanks, gulying in upper watershed Historic silviculture practices (loss of upland herbaceous cover)	Evaluate riparian grazing effects (including elk) for potential exclosures  Quantify existing streambank vegetation; identify likely remediation sites  Evaluate road/vehicle impacts; identify road crossings contributing heaviest sediment loads (GNF & partners in travel management planning)  Establish forest thinning plan (Negrito Ecosystem Project underway)  Locate and map gullies	Seeding/plantings; brush filters, filter strips to provide filtration; riparian exclosures  Road/culvert/low water crossing realignment or paving; seasonal or OHV closures  Forest thinning; seeding to improve herbaceous cover  Gully remediation

**TULAROSA RIVER SUBWATERSHED (SAN FRANCISCO RIVER TO APACHE CREEK)—continued**

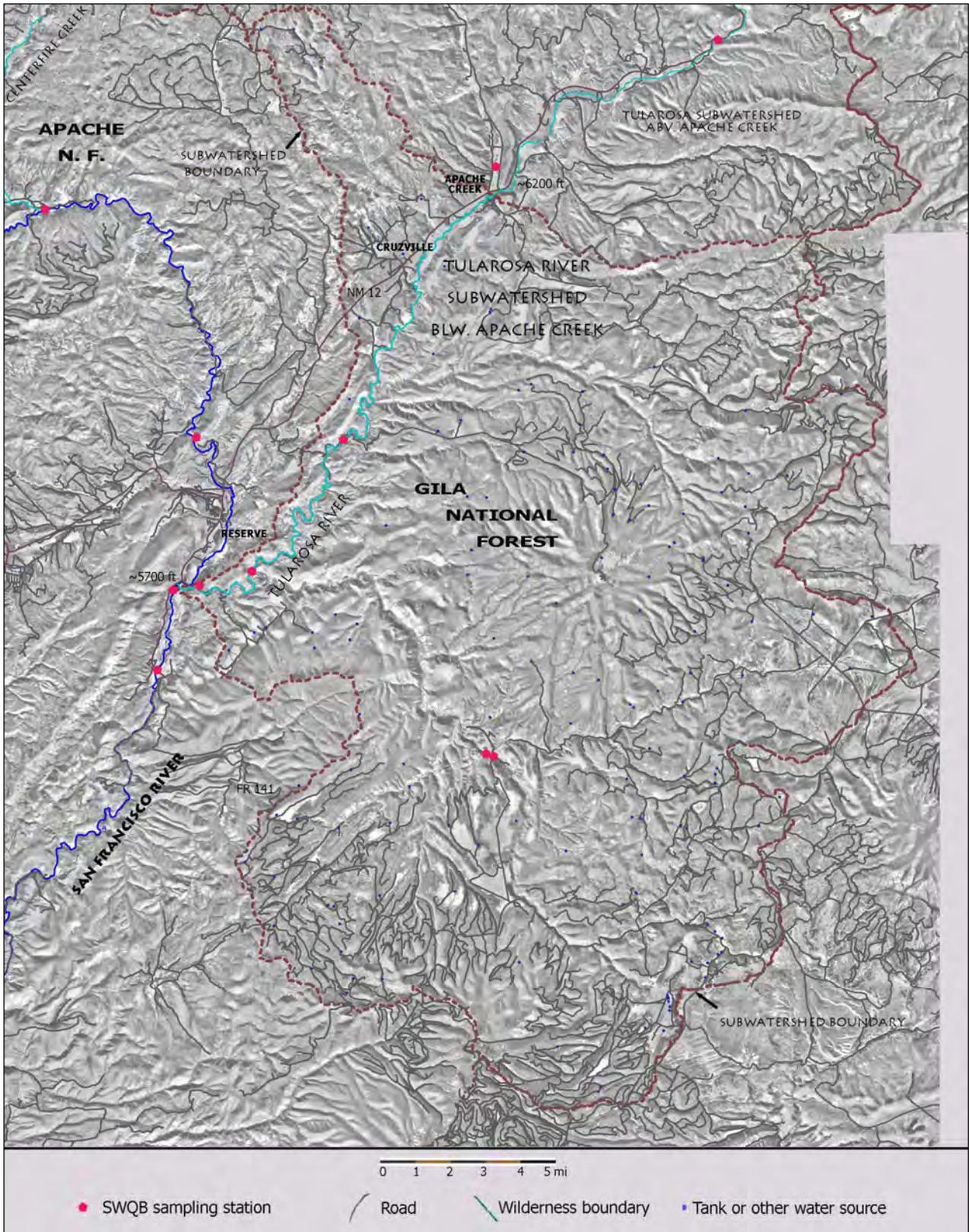
Milestones	Schedule	Target criteria
Filter or bank planting sites targeted Low water crossing projects identified (FR 233 is a GNF/TU joint project) Negrito Creek thinning completed; monitoring established (GNF planning) Travel management plan completed (GNF & partners) Liaison with NRCS, SWCD to develop gully remediation plan developed Travel management plan implemented and minimum of two additional road crossings targeted for improvement	2008 2006-2010 2007-2009 2008? 2008-2009 Dependent on all of above	Detectable positive (downward) trend in sediment runoff from uplands and targeted roads Riparian buffer/filter strip/seeding implemented on 20% of targeted reaches 10% increase in upland herbaceous cover on thinning project sites 2012 target: Reduce total dissolved solids by 8% to 300 mg/L (approx. 4,800 lbs/day)
<p><b>Monitoring (suggested monitoring protocols are described in Section 6):</b></p> <ul style="list-style-type: none"> <li>▪ SF SWCD currently monitors water quality on the San Francisco mainstem just downstream of the San Francisco River confluence under a QAPP developed by NMED, in addition to regular NMED/SWQB monitoring and sampling at established stations..</li> <li>▪ Photo points</li> <li>▪ Sediment runoff quantification/modeling</li> <li>▪ Monument streambank/floodplain monitoring sites; quantify cover; revisit annually</li> </ul> <p>Notes: Tularosa River subwatershed below Apache Creek includes the Negrito Creek watershed, detailed separately in this section. Loach minnow are present in Tularosa Creek near the FR 233 crossing.</p>		



**Map TMDL-37. Topographic map, Tularosa River subwatershed below Apache Creek. Base image: USGS 1:24000 quads. All data from USGS, NMED, and USFS Gila National Forest. Note that Negrito Creek is tributary to this reach of the Tularosa; Negrito Creek is addressed in a separate TMDL table. Also see Map TMDL-31.**



**Map TMDL-38. Land management status map, Tularosa River subwatershed from the San Francisco River to Apache Creek. All data from NMED, USGS, and USFS Gila National Forest. Also see Map TMDL-32, the Negrito Creek subwatershed.**



Map TMDL-39. Aerial photography relief map, Tularosa River subwatershed from the San Francisco River to Apache Creek. Base image: USGS 1996–2002 digital orthophotoquads. All data from USGS, NMED, and USFS Gila National Forest. Also see Map TMDL-33, the Negrito Creek subwatershed.

*TULAROSA RIVER—continued*



**Tularosa River photos, clockwise from top left: NMED staff and volunteer monitor trainees, September 2006; from Highway 32, October 2001; sampling site near FR 233, October 2001; upstream end of Tularosa wetlands near Highway 12, October 2001; road crossing near FR 233 sampling site, October 2001. All 2001 photos courtesy NMED, Silver City.**