

Update for Rock Creek TMDL Planning Area

The temperature, sediment, nutrients, and metals TMDLs scheduled for completion in 2012 (one combined document)

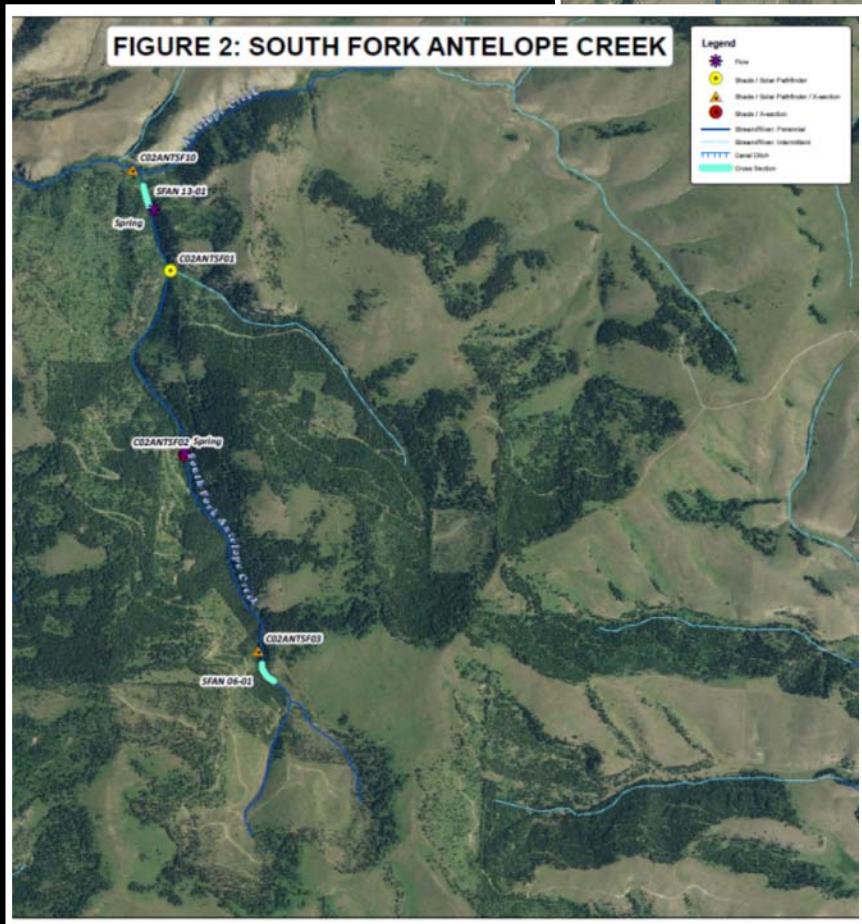
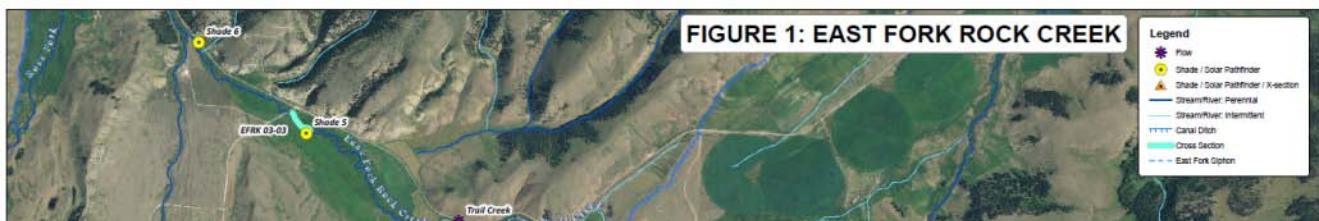
- Project coordinator , Sediment and Temperature TMDL Project manager – Kristy Fortman
- Metals TMDL project manager – Tim Byron
- Nutrients project manager – Lou Volpe



Temperature TMDLs – Monitoring and Modeling

2012 listed streams

South Fork Antelope Creek
East Fork Rock Creek



- Temperature logger data collected 2010 (DEQ) and 2011 (DNRC)
- Shade monitoring in 2011
- QUAL2K modeling in progress
- Report on website July 2012

Sediment TMDLs – Sediment and Habitat Field Work 2011

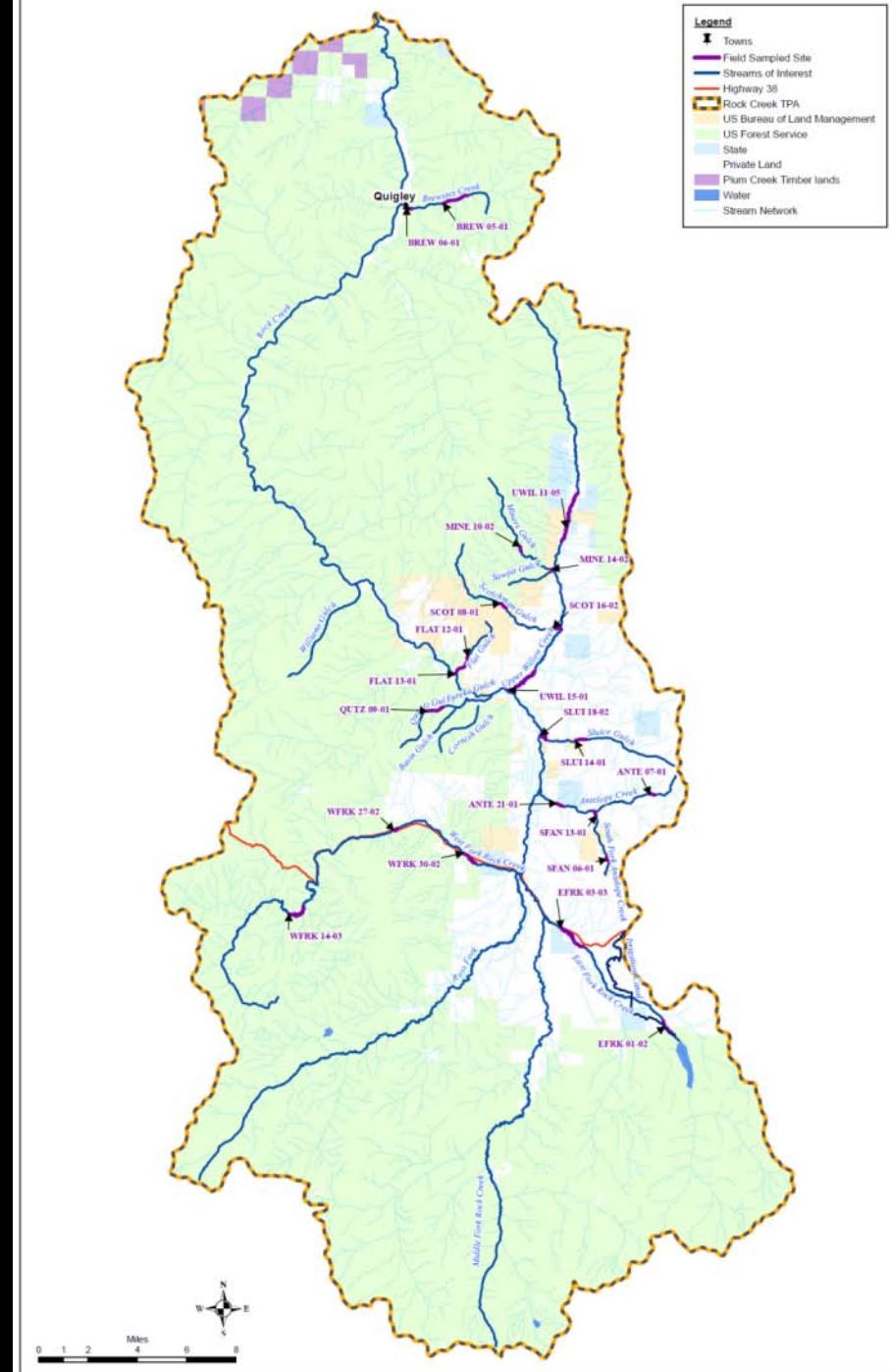
Data collected from 22 monitoring sites

2012 listed streams

- Brewster Creek (2 sites)
- East Fork Rock Creek (2 sites)
- Eureka Gulch (no sites)
- Flat Gulch (2 sites)
- Miners Gulch (2 sites)
- Quartz Gulch (1 site)
- Scotchman Gulch (2 sites)
- Sluice Gulch (2 sites)
- South Fork Antelope Creek (2 sites)

Additional streams assessed

- Upper Willow Creek (2 sites)
- Antelope Creek (2 sites)
- West Fork Rock Creek (3 sites)



Sediment TMDLs – Sediment Source Assessments

Unpaved Road Assessment

- Field work completed in 2011
- WEPP model report available on website July 2012



Upland Sediment Model (Sediment from land use)

- Model in progress
- Report available on website July 2012



Streambank erosion

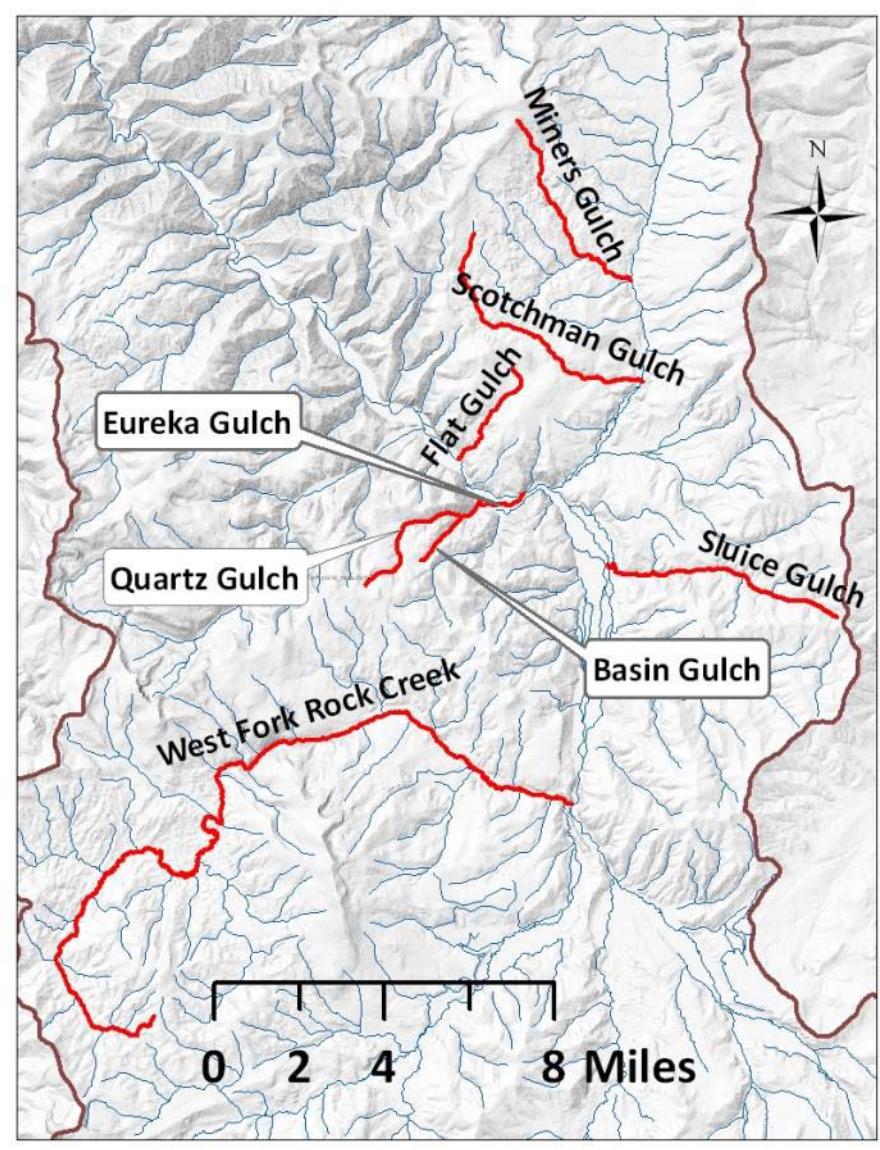
- Field work completed in 2011
- Report available on website June 2012



Point Sources

- No active individual or general Montana Pollution Discharge Elimination System (MPDES) permits within the planning area
- No general stormwater or groundwater permits

Metals TMDLs - Potential Metals Impairment Causes



- Aluminum
- Arsenic
- Iron
- Mercury
- Copper

Data collected from 25 sites on 8 streams during 2004, 2007, and 2009-2011

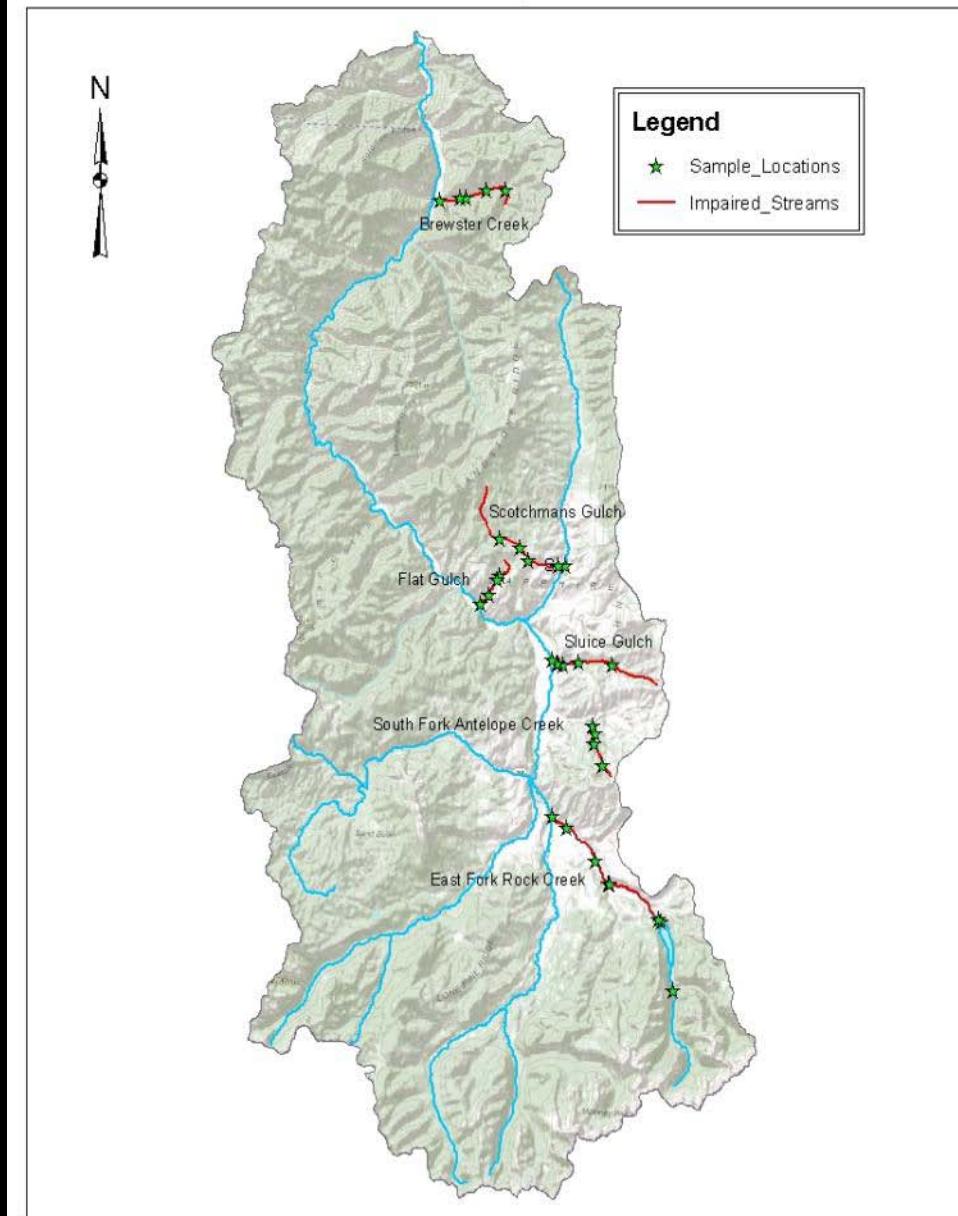
Limited high flow sampling is scheduled for 2012

2012 Nutrient Impaired Stream Listing

2012 listed streams

- Brewster Creek
- East Fork Rock Creek
- Flat Gulch
- Scotchman Gulch
- Sluice Gulch
- South Fork Antelope Creek

Rock Creek Nutrient Impaired Waterbodies



Nutrient TMDLs –Field Work 2009-2011

Data collected from 21 monitoring sites

2009-2012 stream sampling

- South Fork Antelope Creek (4 sites)
- East Fork Rock Creek (6 sites)
- Brewster Creek (5 sites)
- Flat Gulch (4 sites)
- Scotchman Gulch (5 sites)
- Sluice Gulch (5 sites)

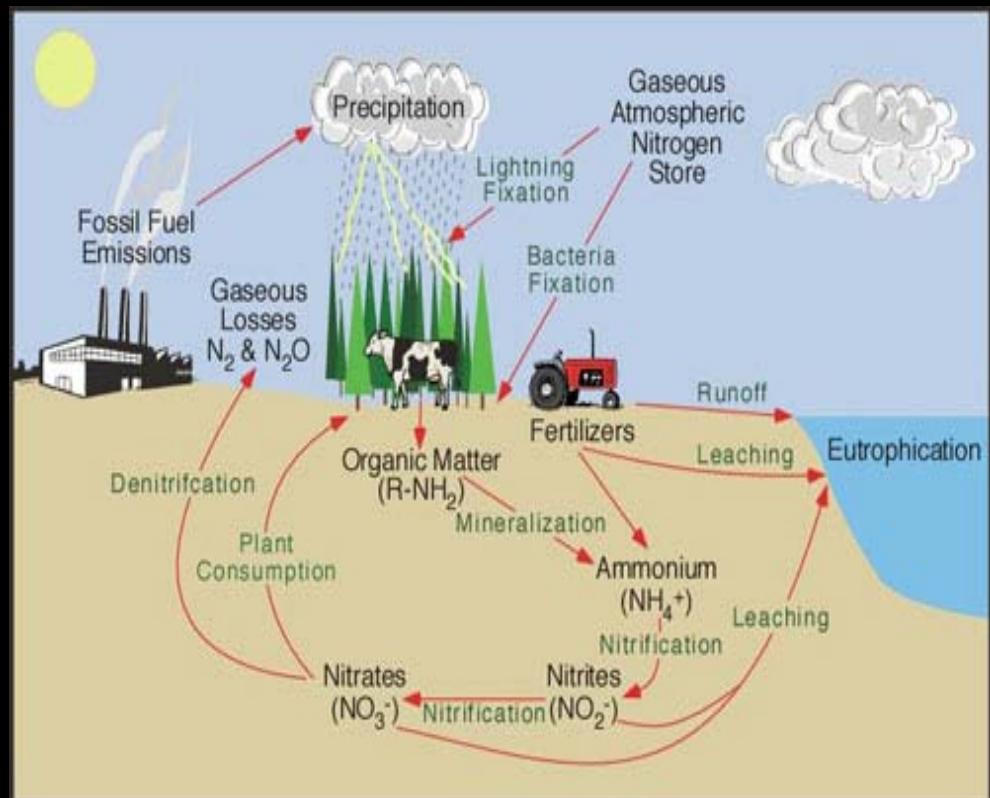
Waterbody Segments Within the Rock TPA Sampled by DEQ 2009-2011

Waterbody Segment Name	Waterbody ID	2009 Parameters	2010 Parameters	2011 Parameters
East Fork Rock Creek	MT76E002_020	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a	
Brewster Creek	MT76E002_050		NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a
South Fork Antelope Creek	MT76E002_060		NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous
Sluice Gulch	MT76E002_110		NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous
Flat Gulch	MT76E002_120	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a
Scotchman Gulch	MT76E002_100	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous	NO ₂ +NO ₃ , Total Nitrogen, Total Phosphorous, Chlorophyll-a

Nutrient TMDLs –Nutrient Sources

Likely nutrient sources

- Stock grazing (cattle, horses etc)
- Dray land agriculture
- Irrigated land agriculture
- Timber harvest, mining, general forest practices
- Riparian cleaning/degradation
 - (timber harvest, mining, grazing, residential agriculture, weeds)
- Upland Clearing/degradation
 - (timber harvest, mining, grazing, residential agriculture, weeds)
- Natural background
- Residential development



What's Next?

- Additional nutrients and metals sampling this summer
- Stream reconnaissance
- WAG/TAG review of TMDL document components
- WAG/TAG meeting in late summer
- Document scheduled for completion end of 2012



Questions?

Project coordinator , Sediment and Temperature TMDL Project manager

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Website

<http://montanatmdlflathead.pbworks.com/w/page/41342541/Rock%20TMDL%20Planning%20Area>