Turbidity Monitoring Report
for Section 319(H) Project
Reconstruction and Stabilization of Whitewater Creek
Trails #212 and #207
Glenwood Ranger District, Gila National Forest

Introduction

The Reconstruction and Stabilization of Whitewater Creek Trails #212 and #207 (Whitewater Creek Project) was implemented to address water quality issues in Whitewater Creek – a tributary of the San Francisco River. The New Mexico Environmental Department (NMED) Surface Water Quality Bureau (SWQB) had listed Whitewater Creek as not meeting water quality standards in the 2004-2006 State of New Mexico Integrated Clean Water Act 303 (d) / 305 (b) report. It was listed for not supporting its designated use as a high quality coldwater fishery. The goals of this project were to reduce turbidity and sedimentation in Whitewater Creek attributed to erosion from Whitewater Creek Trail #207 and South Fork Trail #212.

The general need to address turbidity and sedimentation problems in watersheds of the Gila National Forest was originally identified in the first Gila Watershed Restoration Action Strategy (Gila WRAS July 2000) under the heading entitled *Watershed Management (Soil and Water).* . The updated version of the Gila WRAS (July 2005) stated that "heavily used trails can substantially affect riparian and stream channel condition. Heavy use tends to compact soils, destroy vegetation, and, as a consequence, destabilize stream banks and contribute to sediment loading in streams". The Gila WRAS of July 2005 specifically identifies Whitewater Creek as a priority for restoration efforts due to the development of TMDLs related to sediment runoff (turbidity).

Process

During implementation of the Whitewater Creek 319 Project, the Glenwood Ranger District purchased a Hach 2100P Portable Turbidimeter. The turbidimeter measures the scatter of a light beam focused on particles in the water. The scattering of light increases with a greater suspended load, thus the more light that is deflected, the higher the turbidity of the sample. The units of turbidity from a calibrated nephelometer (turbidimeter) are called Nephelometric Turbidity Units (NTU).

In February 2009, three sampling points were established on Whitewater Creek in reaches of the stream impacted by Trails #212 and #207. The sampling points were located 1) at the day use area in the Catwalk National Recreation Area, 2) upstream at the 0.5 mile point on Trail #207, and 3) upstream at the 1.0 mile point on Trail #207. Samples were taken once a month at each point beginning in February 2009.

Results

The following table displays a summary of the results of the sampling period of February 2009 through July 2009. Copies of original data sheets are attached to this report.

Sampling Point	***2/12/09***	***3/18/09***	***4/24/09***	***5/28/09***	***6/17/09***	***6/22/09***	***7/14/09***
Campground (NTU)	1.04	1.20	1.70	0.94	0.80	5.94	3.05
0.5 mile pt. (NTU)	1.02	1.08	1.58	0.94	0.93	2.25	2.30
1.0 mile pt. (NTU)	1.15	1.15	1.33	0.98	1.25	2.08	2.08

Summary

Water quality overall was good during the sampling period of February 2009 to August 2009. Little snowpack occurred during the winter of 2008/2009, thus spring runoff events carrying sediment were limited. Two samples were taken in June to capture data during in-channel work to remove a concrete ford at the campground. The sample taken at the campground occurs at this ford site, and the work was halfway completed when the 6/22/09 sample was taken. Higher turbidity loads were observed at this site than during the previous week due to this work. Summer monsoon events began in June and July, as well as an increase in recreationists playing in the creek along the sample reaches. Higher NTUs observed during the latter part of June and in July are likely attributed to these occurrences.

Turbidity readings were not taken August 2009-November 2009 due to lack of personnel, however the Gila National Forest plans to make this a continuous monitoring site into the future to track trends.