
EXECUTIVE SUMMARY

Section 303(d) of the Federal Clean Water Act requires states to develop Total Maximum Daily Load (TMDL) management plans for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a water body can assimilate without violating a state's water quality standards. It also allocates that load capacity to known point sources and nonpoint sources at a given flow. TMDLs are defined in 40 Code of Federal Regulations Part 130 as the sum of the individual Waste Load Allocations (WLAs) for point sources and Load Allocations (LAs) for nonpoint source and background conditions, and includes a Margin of Safety (MOS).

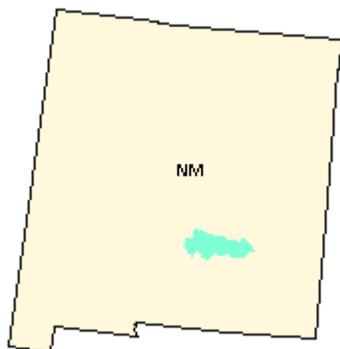
The Rio Hondo watershed is located in southcentral New Mexico. The Surface Water Quality Bureau (SWQB) conducted an intensive surface water quality survey of the Rio Hondo basin in 2003. Water quality monitoring stations were located throughout the upper Rio Hondo watershed during the intensive watershed survey to evaluate the impact of tributary streams and ambient water quality conditions. As a result of assessing data generated during this monitoring effort, combined with data from outside sources that met SWQB quality assurance requirements, impairment determinations of New Mexico water quality standards for fecal coliform were documented for Carrizo Creek (Rio Ruidoso to Headwaters), Rio Bonito (Angus Canyon to Headwaters), and Rio Hondo (Perennial Reaches to Rio Ruidoso). Impairment of the narrative plant nutrient standard was confirmed for the Rio Ruidoso (Rio Bonito to US Highway 70). Exceedences of the temperature criterion were documented on Rio Ruidoso (US Highway 70 to the Mescalero Apache Boundary). Impairment due to turbidity was verified on Rio Ruidoso (US Highway 70 to the Mescalero Apache Boundary). This TMDL document addresses the above noted impairments as summarized in the tables below.

A number of assessment units could not be assessed in this document due to insufficient data. These impairments will remain on the Clean Water Act Integrated §303(d)/§305(b) list of waters until additional data are available. Additionally, assessment units whose designated uses are not existing or attainable and those that will be de-listed are detailed in this document.

Additional water quality data will be collected by the SWQB during the standard rotational period for intensive stream surveys. As a result, targets will be re-examined and potentially revised as this document is considered to be an evolving management plan. In the event that new data indicate that the targets used in this analysis are not appropriate and/or if new standards are adopted, the load capacity will be adjusted accordingly. When water quality standards have been achieved, the reach will be moved to the appropriate category on the Clean Water Act Integrated §303(d)/§305(b) list of waters.

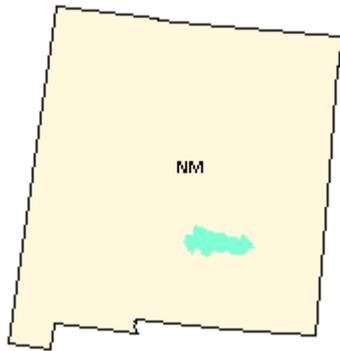
The SWQB's Watershed Protection Section has and will continue to work with the Upper Hondo Watershed Coalition to finalize the Watershed Restoration Action Strategies (WRAS) in order to develop and implement strategies to attempt to correct the water quality impairments detailed in this document. Implementation of items detailed in the WRAS will be done with participation of all interested and affected parties.

**TOTAL MAXIMUM DAILY LOAD FOR
BACTERIA
CARRIZO CREEK (RIO RUIDOSO TO MESCALERO APACHE BOUNDARY)**



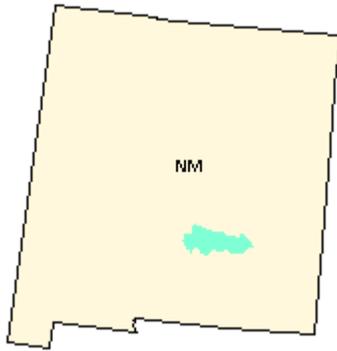
New Mexico Standards Segment	Pecos River Basin 20.6.4.209
Waterbody Identifier	Carrizo Creek (Rio Ruidoso to Mescalero Apache boundary) NM-2209.A_22 (formerly NM-PR8-50200)
Segment Length	3 miles
Parameters of Concern	Bacteria
Uses Affected	High Quality Coldwater Fishery
Geographic Location	Rio Hondo USGS Hydrologic Unit Code 13060008
Scope/size of Watershed	22.53 mi ²
Land Type	Arizona/New Mexico Mountains Ecoregion (23)
Land Use/Cover	Forest (97%), Grassland (1.7%), Shrubland (<1%), Water (<1%)
Identified Sources	Unknown Sources
Land Management	Mescalero Apache Reservation (86%), U.S. Forest Service (9%), Private (5%)
Priority Ranking	High
TMDL for: Fecal Coliform	WLA (0) + LA (1.27x10⁹) + MOS (6.70x10⁷) = 1.34x10⁹cfu/day

**TOTAL MAXIMUM DAILY LOAD FOR
BACTERIA
RIO BONITO (ANGUS CANYON TO HEADWATERS)**



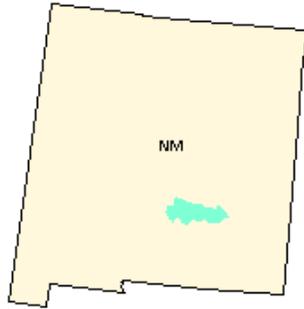
New Mexico Standards Segment	Pecos River Basin 20.6.4.209
Waterbody Identifier	Rio Bonito (Angus Canyon to headwaters) NM-2209.A_10 (formerly NM-PR8-30000)
Segment Length	10.16 miles
Parameters of Concern	Bacteria
Uses Affected	High Quality Coldwater Fishery
Geographic Location	Rio Hondo USGS Hydrologic Unit Code 13060008
Scope/size of Watershed	45.96 mi ²
Land Type	Arizona/New Mexico Mountains Ecoregion (23)
Land Use/Cover	Forest (97%), Grassland (1.6%), Shrubland (1.3%), Water (<1%)
Identified Sources	Low flow alterations
Land Management	U.S. Forest Service (89%), Private (11%)
Priority Ranking	High
TMDL for: Fecal Coliform	WLA (0) + LA (2.30x10⁹) + MOS (1.21x10⁸) = 2.42x10⁹cfu/day

**TOTAL MAXIMUM DAILY LOAD FOR
BACTERIA
RIO HONDO (PERENNIAL REACHES PECOS RIVER TO RIO RUIDOSO)**



New Mexico Standards Segment	Pecos River Basin 20.6.4.208
Waterbody Identifier	Rio Hondo (Perennial reaches Pecos River to Rio Ruidoso) (formerly NM-2208_30)
Segment Length	8 miles
Parameters of Concern	Bacteria
Uses Affected	Coldwater Fishery
Geographic Location	Rio Hondo USGS Hydrologic Unit Code 13060008
Scope/size of Watershed	585.88 mi ²
Land Type	Arizona/New Mexico Mountains Ecoregion (23), Southwestern Tablelands (26)
Land Use/Cover	Forest (45%), Grassland (33%), Shrubland (20%), Agriculture (1.24%), Residential and commercial (<1%), Water (<1%)
Identified Sources	Unknown sources
Land Management	Private (45%), U.S. Forest Service (28%), Mescalero Apache Reservation (19%), BLM (5%), State (3%)
Priority Ranking	High
TMDL for: Fecal Coliform	WLA (0) + LA (6.24x10⁹) + MOS (3.29x10⁸) = 6.57x10⁹ cfu/day

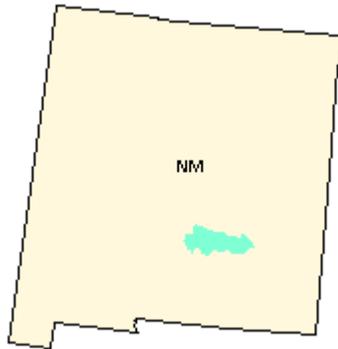
**TOTAL MAXIMUM DAILY LOAD FOR
PLANT NUTRIENTS
RIO RUIDOSO (RIO BONITO TO US HIGHWAY 70)**



New Mexico Standards Segment	Pecos River Basin 20.6.4.208
Waterbody Identifier	Rio Ruidoso (Rio Bonito to US Highway 70) NM-2208_20 (formerly NM-PR8-40000)
Segment Length	19.63 miles
Parameters of Concern	Plant Nutrients
Uses Affected	Coldwater Fishery
Geographic Location	Rio Hondo USGS Hydrologic Unit Code 13060008
Scope/size of Watershed	289.46 mi ²
Land Type	Arizona/New Mexico Mountains Ecoregion (23)
Land Use/Cover	Forest (77%), Grassland (13%), Shrubland (8%), Agriculture (1.2%), Residential and commercial (1%)
Identified Sources	Flow alterations from water diversions, highway/road/bridge runoff (non-construction related), loss of riparian habitat, municipal point source discharges, on-site treatment systems (septic systems and similar decentralized systems), rangeland grazing, streambank modifications/destabilization.
Land Management	U.S.Forest Service (38%), Mescalero Apache Reservation (33%), Private (26%), State (2.1%), BLM (1.3%)
Priority Ranking	High
TMDL for: Plant Nutrients: Total Phosphorus Total Nitrogen	WLA(2.16) + LA(0.34) + BL(0.09)^a + MOS(0.13) = 2.72 lbs/day WLA(18.9) + LA(5.28) + BL(1.66)^a + MOS(1.36) = 27.2 lbs/day

^a BL = Background Load, or load attributable to natural sources (in lbs/day).

**TOTAL MAXIMUM DAILY LOAD FOR
TEMPERATURE and TURBIDITY
RIO RUIDOSO (US HIGHWAY 70 TO MESCALERO APACHE BOUNDARY)**



New Mexico Standards Segment	Pecos River Basin 20.6.4.209
Waterbody Identifier	Rio Ruidoso (US Highway 70 to Mescalero Apache bnd) NM-2209.A_20 (formerly NM-PR8-50000)
Segment Length	12.4 miles
Parameters of Concern	Temperature, Turbidity
Uses Affected	High Quality Coldwater Fishery
Geographic Location	Rio Hondo USGS Hydrologic Unit Code 13060008
Scope/size of Watershed	152.65 mi ²
Land Type	Arizona/New Mexico Mountains Ecoregion (23)
Land Use/Cover	Forest (93%), Grassland (3.5%), Shrubland (1.2%), Residential and commercial (1.6%), Agriculture (<1%), Water (<1%)
Identified Sources	Loss of riparian habitat, municipal point source discharges, on-site treatment systems (septic systems and similar decentralized systems), rangeland grazing, site clearance (land development or redevelopment), streambank modifications/destabilization.
Land Management	Mescalero Apache Reservation (61%), U.S. Forest Service (22%), Private (16%), State (<1%)
Priority Ranking	High
TMDL for: Temperature Turbidity	WLA (0) + LA (105.07) + MOS (11.67) = 116.74 j/m²/sec/day WLA (0) + LA (267) + MOS (89) = 356 lbs/day