Watershed Plan Summary

Arizona NEMO Watershed Based Plan (2010)

PARTICIPATING ORGANIZATIONS

University of Arizona

Arizona Department of Environmental Quality, Water Quality Division

Water Resources Research Center

University of Arizona Advanced Resource Technology Lab

PLAN COVERAGE

This plan covers tributaries of the San Juan River in the Four Corners area of Arizona, including Chinle Creek. The plan was developed by the University of Arizona's Nonpoint Education for Municipal Officials (NEMO) program, which focuses on southwestern integrated watershed management issues. NEMO is a national network of education programs created to "to educate local land use decision makers about the links between land use and natural resource protection."

PLAN GOALS

The stated goal of the of the plan "is to provide information and guidance necessary to identify existing and potential water quality impairments within the watershed and to present management alternatives for responding to these impairments. The ultimate goal is to protect water quality where it meets applicable standards and to restore water quality where it fails to meet these standards."

CONSIDERATIONS

Projects listed below are based solely on the information provided in the plan. The plan identifies a broad range of watershed management techniques and identifies example projects that could address four key nonpoint source water quality concerns (metals from abandoned mine sites, stream sedimentation from land use activities, organic and nutrient pollution from land use activities, and selenium from agricultural activity) in the subwatersheds at highest risk from each of these concerns. The table below summarizes the watershed management techniques and lists four example subwatershed projects.

COMPLETED PROJECTS

The plan does not identify completed projects.

PLANNED PROJECTS

Project Type	Description	Planned Completion Date	Cost	Additional Information
Addressing metal impairments	Inventory existing abandoned mines	Not available	Not available	None
	Revegetate disturbed mined lands			
	Control erosion			
	Capture runoff and sediment			
	Remove or contain tailings and mine waste			
	Offer education			
Addressing organics/ nutrient impairment	Install grazing management, filter strips, fencing, watering facilities, rock riprap, erosion control fabrics, toe rock, water bars, erosion control on dirt roads; offer education	Not available	Not available	
Addressing selenium impairments	Avoid flood irrigation of croplands and install a mechanized irrigation system (center pivot, linear move, gated pipe, wheel line, or drip irrigation) to reduce evaporation			
Strategy for channel and riparian protection and restoration	In cooperation with responsible management agencies, implement riparian protection and restoration efforts across the watershed			
Trading Post Wash–Chinle Wash subwatershed example project	Calculate and document sediment delivery and pollutant reductions for sediment-borne metals; assess and implement options for mine site restoration, e.g., erosion control fabrics, revegetation, removal and relocation of tailings material			Example project targeted at a high-risk subwatershed, entirely within the Navajo Nation
Nazlini Wash example project	Implement grazing management practices to improve or maintain riparian health and reduce organic pollutants: e.g., exclude the land from grazing, restrict access to riparian corridors by fencing (which will also reduce the introduction of fecal matter to the stream), locate alternative watering facilities away from the water body			Example project targeted at a high-risk subwatershed, entirely within Navajo Nation

PLANNED PROJECTS *(continued)*

Project Type	Description	Planned Completion Date	Cost	Additional Information
Trading Post Wash–Chinle Wash subwatershed example project	Estimate potential selenium loading reductions from BMP options; install mechanized irrigation systems or onsite treatment	Not available	Not available	Example project targeted at a high-risk subwatershed, ranked as the most critical area for selenium pollution in the Arizona portion of the San Juan watershed
Red Water Wash–Chinle Wash example project	Implement grazing management practices to improve or maintain riparian health and reduce organic pollutants: e.g., exclude the land from grazing, restrict access to riparian corridors by fencing (which will also reduce the introduction of fecal matter to the stream), locate alternative watering facilities away from the water body Upgrade or replace septic systems or require hookup to a public wastewater treatment facility Install a constructed wetland treatment system			This subwatershed is entirely within the Navajo Nation

FOR MORE INFORMATION

The watershed plan is available online.