

**Water Quality Improvement Grant Award Recipients**  
**Cycle 1, July 2000**

The nine projects, listed by county, receiving grant awards are:

**Apache**

**James W. Crosswhite**

**Grant Award \$121,435.00**

“EC Bar Ranch Turbidity Reduction Project”

Mr. James W. Crosswhite plans on building riparian fencing, installing water wells and off-channel water wells, and using poly-pipe to replace earth ditches to reduce turbidity to meet total maximum daily load (TMDL) standards in Nutrioso Creek.

[www.ECBarRanch.com](http://www.ECBarRanch.com)

**Merlyn Rogers**

**Grant Award \$29,707.00**

“Rogers Ranch Turbidity Reduction Project”

Mr. Rogers focuses his project on reducing turbidity in Nutrioso Creek by restoring exposed stream banks and increasing vegetation growth using riparian fencing, off-channel water wells and keeping water gaps closed during growing season.

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**Town of Eagar**

**Grant Award \$382,800.00**

“Upper Lower Colorado River - Big Ditch Water Loss/Water Quality Improvement Project”

Approximately six miles upstream of the Town of Eagar, water of the Upper Little Colorado River (ULCR) is diverted into the “Big Ditch” irrigation ditch. The Town of Eagar plans to line the “Big Ditch” with an impervious liner to cure the leakage now occurring in the ditch. Once the leakage is controlled, not only might riparian growth be enhanced, but it is also likely to create increased flows into the ULCR during the irrigation season and ultimately improve water quality.

**Coconino**

**Blue Ridge and Long Valley Ranger Districts**

**Grant Award \$61,150.00**

“Verde River Headwaters Riparian Restoration Demonstration Project”

The Blue Ridge and Long Valley Ranger Districts propose to reduce sediment in West Clear Creek by removing bank de-stabilization and channel cutting, and re-establishing functioning riparian zone.

**Maricopa**

**United States Forest Service, Tonto National Forest**

**Grant Award \$118,288.00**

“Lower Salt River- Pollution Prevention, Education, and Monitoring

The Forest Service proposes to reduce e-coli concentrations in the Lower Salt River by building three restrooms around the recreation area.

**Mohave**

**Anita Waite**

**Grant Award \$14,840.00**

“Cane Springs Ranch Catchment Restoration”

Ms. Waite is going to repair and clean catchments to improve water quality by slowing water during flood conditions to lessen the sediment in the runoff from Cane Springs Ranch into the Big Sandy River.

**Northwest Arizona Watershed Council**

**Grant Award \$82,200.00**

“Greater Kingman Area Wildcat Dump Cleanup”

The Greater Kingman Area Wildcat Dump Cleanup will direct funding to clean up a large number of wildcat dump sites in the Kingman area. The cleanup will reduce pollutants entering aquifers via soil penetration at the dump sites and from runoff through the sites.

**Santa Cruz**

**Coronado Resource Conservation and Development (RC&D) Grant Award \$87,800.00**

“Implementation of Best Management Practices to Control Sediment on a Reach of the Santa Cruz River”

The Coronado RC&D proposes to reduce the amount and detrimental impacts of sediment by implementing best management practices for erosion control along a thousand feet of channel on the Santa Cruz River.

**Yavapai**

**Yavapai County Flood Control**

**Grant Award \$72,695.00**

“Yavapai County Flood Control - Cornville Watershed Project”

Yavapai County Flood Control will install an outfall pipe from a two acre detention pond west of Chick Road in Cornville to the Greenwell Slough adjacent to Oak Creek for the purpose of catching sediment and runoff. The project employs conservation strategies in the wash/riparian corridor, incorporating a combination of native revegetation, rip rap and/or other structures, and channel reconstruction to minimize and eventually eliminate sediment discharges.

**Water Quality Improvement Grant Award Recipients**  
**Cycle 2, Year 2000**

The seven projects, listed by county, receiving grant awards are:

**Apache**

**Apache County**

“Alpine/Luna Lake Improvement”

**Grant Award**

**\$152,580.00**

The County proposes to dredge accumulated sediment from Luna Lake to increase the volume of water and harvest weeds to decrease the volume of aquatic plants rooted or floating in the lake. Goals for the project include: increased dissolved oxygen levels, reduced quantities of nutrient-rich sediments on the bottom, lowered average pH, and reduced total phosphorous. In addition, the County will establish water quality monitoring points along the San Francisco River to help identify locations of faulty septic systems and provide financial assistance to repair or replace faulty septic systems. If you would like more information about this project, please contact Cathy Cosgrove at (520) 333-2680 or email her at [heroconsulting@hotmail.com](mailto:heroconsulting@hotmail.com).

**United States Forest Service**

**Apache-Sitgreaves National Forests**

**Springerville Ranger District**

"Murray Basin/Saffel Canyon Phase II"

**Grant Award**

**\$162,073.79**

The Forest Service seeks to return two severely degraded upper watersheds of the Little Colorado River Basin to satisfactory conditions, reduce erosion processes currently in force, and restore channels to their natural form and function. Monies are requested to fund the construction of erosion control structures, including gully stabilization, heavy equipment rentals, materials, and labor. The Forest Service also plans for some road realignment/upgrading, obliteration of designated roads and two-tracks, and revegetation of disturbed sites. The project will be implemented directly upstream of Nutrioso Creek, currently on the state's 303(d) list of impaired water bodies for turbidity.

**James W. Crosswhite**

“EC Bar Ranch Turbidity Reduction Project- Phase II”

**Grant Award**

**\$51,540.00**

Preserve, protect and enhance water quality by minimizing impacts of turbidity pollution discharged to surface and groundwater from nonpoint sources along a ½ mile section of Nutrioso Creek. Through various Total Maximum Daily Load (TMDL) recommended practices, such as implementing riparian fencing and installing off-channel water wells, Mr. Crosswhite hopes to change the riparian corridor from a “non-functioning” condition to one that is functioning properly. By restoring the riparian corridor, this private rancher hopes to recondition Nutrioso Creek so that it will eventually meet the TMDL standards.

### Cochise

#### **Coronado Resource Conservation and Development**

“Borderlands Storm Water Runoff Control Project”

**Grant Award**

**\$168,000.00**

Implement Best Management Practices (BMPs) to reduce sediment entering the San Pedro River. Brush clearing, grass seeding and shallow water spreader dike installation will be used to reduce sediment on 2,500 acres of severely eroded rangeland along the Mexican Border. If you would like more information about this project, please contact Jack Ladd of the Hereford Natural Resource Conservation District at (520) 432-4312

### Graham

#### **Coronado Resource Conservation and Development**

“Road Rehabilitation To Reduce Sediment In San Simon Watershed”

**Grant Award**

**\$38,100.00**

Rehabilitate 14 miles of unimproved roads within the watershed using structures at strategic locations to decrease sediment entering the San Simon River. In addition, the Coronado Resource Conservation and Development (RC&D) plan to provide a greater awareness of the watershed concept and erosion and sediment control as they relate it to water quality. If you would like more information about this project, please contact Pete Brawley of the San Carlos/Safford/Duncan Watershed group at (520) 428-2607.

### Navajo

#### **Overgaard Townsite Domestic Wastewater Improvement District**

“Overgaard Townsite Water Protection Project”

**Grant Award**

**\$34,080.00**

The Overgaard Domestic Wastewater Improvement District plans to protect surface water and ground water that is presently threatened by an abandoned/ failed onsite community wastewater disposal system. Twenty households are presently hooked up to the system via trunk lines, and when functioning, the system consists of a 10,000 gallon septic tank and leach field located on a one-acre parcel just north of the subdivision. The Overgaard Townsite Water Protection Project will repair the entire system, thus protecting public health and the underlying aquifers and nearby streams within the Little Colorado - San Juan Watershed.

### Pinal

#### **Raymond C. Keeler**

“Peppersause Cave Water and Cave Restoration”

**Grant Award**

**\$71,833.00**

The main goal of this project is to preserve and protect ground water by removing and preventing pollution in Peppersause Cave, located in the Coronado National Forest. Mr. Keeler intends to clean the water in the permanent pools contaminated with e-coli, remove the litter and graffiti, create and distribute educational material, erect a kiosk, and encourage current users of the cave to help in clean-up and preservation efforts.

## **Water Quality Improvement Grant Award Recipients Cycle 1, July 2001**

The ten projects, listed by county, receiving grant awards are:

### **Apache**

**James W. Crosswhite**

"EC Bar Ranch Turbidity Reduction Project - Phase III"

**Grant Award**

**\$45,036.00**

Preserve, protect and enhance water quality by minimizing impacts of turbidity pollution discharged to surface and groundwater from nonpoint sources along a 2 ½ mile section of Nutrioso Creek located on 390 acres owned by James Crosswhite. The Phase III project complements the Phase I and II projects by addressing concern over elk activity that could defeat and/or delay restoration of the riparian corridor.

[www.ECBarRanch.com](http://www.ECBarRanch.com)

**United States Forest Service, Apache-Sitgreaves National Forest**

"Greenwood Sediment Reduction Project"

**Grant Award**

**\$224,500.00**

Reconstruct and realign Forest Roads to an acceptable level that will either eliminate or greatly reduce sediment contributions to Nutrioso Creek. Culverts, lead out ditches, and cross drains that drain directly into the stream's system will be disconnected to divert surface runoff to an appropriate buffer strip efficient enough to drop suspended sediments. Erosion stabilization methods will be applied to control active headcutting and bank erosion caused by the roads. If you would like more information about this project, please contact Phil Settles, Alpine District Ranger, at (928) 339-4384.

### **Cochise**

**Coronado Resource Conservation and Development Area, Inc.**

"Campomocho-Sacaton Watershed Stormwater Runoff Control"

**Grant Award**

**\$300,000.00**

The goal of this project is to improve water quality through the implementation of Best Management Practices (BMPs). The first phase will focus on installing practices in the uplands to reduce sediment and erosive water velocity reaching the edge of the valley. Secondary phases have been identified to address other water quality concerns in the watershed. Implementing the proposed BMPs will reduce contaminated runoff and control nonpoint source pollution within the watershed. If you would like more information about this project, please contact Dan Skinner at (480) 968-1930.

### **Coconino**

**Doug Cullinane**

"Oak Creek Task Force Water Quality Guardian Program"

**Grant Award**

**\$105,454.00**

The purpose of this proposal is to reduce the quantity of coliform laden sediments entering Oak Creek

and reduce the impacts of human activities which lead to increased animal excrement adjacent to Oak Creek. Public restrooms, public showers and sediment reduction facilities will be installed to improve the water quality in Oak Creek. If you would like more information about this project, please contact the project manager, Doug Cullinane, P.E., at (480) 831-8929 or email him at dougcullinane@aol.com. You can also contact the Oak Creek Task Force Co-chairman, Barry Allan, at nelsenallan@msn.com or Morgan Stine at morgan@sedona.net.

### **Mohave**

#### **Molly Meyer**

#### **Grant Award**

"Bar S Ranch Headquarters: Septic Tank and Drain Field Installation" **\$4,658.00**

Replace existing old block-walled septic tank with a 2000 gallon capacity fiberglass or poly tank. A proper functioning drain field will be installed, along with sewer lines and plumbing. The project will protect the adjacent Chicken Springs Wash from septic overflow and well contamination. Molly Meyer says that she is delighted to receive the grant and that "their headquarter's population is growing and the grant award is very timely." If you would like more information about this project, please contact the project manager, Molly Meyer, at (520) 716-3395.

### **Navajo**

#### **Tolchii' Kooh, Inc.**

#### **Grant Award**

"Best Management Practices for Wastewater Lagoons" **\$161,491.00**

A demonstration project to promote Best Management Practices (BMPs) for sewage lagoons by developing a modern wastewater lagoon system and regional training center at Tolani Lake on the Navajo Reservation. The project will be used to teach and promote BMPs associated with the operation and maintenance of lagoon systems while demonstrating methods of effluent reuse and recycling. In addition to the lagoon system, natural methods of advanced wastewater treatment through the use of constructed wetlands, a wastewater treatment system widely applicable on the Navajo Reservation will be demonstrated. "This is something that is really needed on the Navajo Reservation," according to Ben Crysler, Project Engineer. " There is a lot of value in the nutrients contained in wastewater effluent. By recycling this natural fertilizer into a useable product, we are not only helping to protect the watershed, but providing opportunities for local entrepreneurs as well."

The Demonstration center is schedule to be operational by October 2002. for more information, contact Dave Robbins, Project Manger, at (520) 525-1650.

### **Pima**

#### **Bil Taylor Design Associates**

#### **Grant Award**

"Riverfront Residence Green Roof Installation" **\$33,875.00**

Installation of approximately 3400 square feet of waterproofing, soil, and vegetative cover onto a roof adjacent to the Rillito River riparian corridor. The "green roof" demonstration project will mitigate the impacts of urban runoff by slowing and absorbing runoff from the roof 50-90%. The soil and

landscaping will act as a filter strip, minimizing the pollutants that drain from the roof into the watershed. The reduction in runoff will also reduce soil erosion on-site and downstream. If you would like more information about this project, please contact the project manager, Chris Evans, at (520) 792-9544.

**Pima Natural Resource Conservation District**

“Best Management Practices: A Balancing Act”

**Grant Award**

**\$40,000.00**

Implementation of Best Management Practices to reduce nonpoint source pollution from agricultural sources to protect water quality in groundwater and surface water. This project will reduce crop amendments lost through deep percolation, erosion and runoff and evaporation and drift that occur in the Northwest section of the Avra Valley Sub-Basin.

**Pinal**

**The Nature Conservancy**

"San Pedro Wildlife Sanctuary Habitat Restoration Project"

**Grant Award**

**\$253,584.00**

The overall goal of the project is to improve the condition of a reach along the San Pedro River. Water quality will be improved through restoration of agricultural fields by introducing native grasses and forbs and riparian flood plain habitat protection. A small outdoor riparian exhibit will be constructed for education and outreach. "The Nature Conservancy's goal at the Southwest Wildlife Rehabilitation Site is to get the water back into the river and let it flow as nature intended. I've seen U.S. geological survey reports of surveyors canoeing down the part of the river that is dry today. This grant will help us restore this river for wildlife and for people," Lower San Pedro Program Manager, Dave Harris said. If you would like more information about this project, please contact Dave Harris, Lower San Pedro Program Manager, at (520) 622-3861.

## Water Quality Improvement Grant Award Recipients Cycle 2, 2001

The sixteen projects, listed by county, receiving grant awards are:

### Apache

<b>James W. Crosswhite</b> "EC Bar Ranch Turbidity Reduction Project - Phase IV"	<b>Grant Award</b> \$63,108
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The primary goal of the project is to preserve, protect and enhance water quality by minimizing impacts of turbidity pollution discharged to surface and groundwater from nonpoint sources along a 2 ½ mile section of Nutrioso Creek. Practices include irrigation system improvements, riparian restoration practices, streambank erosion control measures, filter strips and buffer strips and gully repair. The educational and outreach requirement will be satisfied through various presentations using a Web site CD and Web site updates. The ECBarRanch.com site includes a "tour" of projects, grants, photos, watershed information, contacts and much more.

### Coconino

<b>USDA, Coconino National Forest Service</b> "Sedona Gun Range Lead Removal and Site Restoration"	<b>Grant Award</b> \$145,437
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The goal of this project is to eliminate the potential for lead and aromatic hydrocarbon contamination and sedimentation into Oak Creek. The project will eliminate contamination at the project site as well as in Mormon Wash that flows directly into Oak Creek. This project will remove the contaminants from the Sedona Gun Range that was used for over 30 years and is contaminated with lead shot and clay pigeons. Once the site is decontaminated, it will be stabilized and adapted to serve as a key community and National Forest trailhead. Public outreach for this project will include press releases, news articles and the placement of interpretive signs at the site. For more information please contact Jennifer M. Burns, Sedona District Landscape Architect, at 928-282-4119 or [jmburns@fs.fed.us](mailto:jmburns@fs.fed.us).

### Cochise

<b>Engineering and Environmental Consultants, Inc. (EEC)</b> "Fort Huachuca East Range Road Closure and Stream Crossing Mitigation Plan"	<b>Grant Award</b> \$183,856
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EEC, in cooperation with the Fort Huachuca Army Garrison, will plan and implement measures to reduce sediment load to the San Pedro River and work to restore a disturbed ecosystem. Reducing sediment load to the San Pedro River will be achieved through closure of 81 miles of the existing 267 miles of roadways within the Fort Huachuca East Range and implementing various degrees of rehabilitation and mitigation activities on these roads. The proposed GIS analytical work for the biological survey will generate several presentation quality graphics that will be ideal for educational purposes by demonstrating practical



applications of relatively new technologies. Exhibits, talks and articles will be the emphasis of the project's educational and outreach plan. For more information on the scope of work please contact: Fritz F Laos, Project Manager, (520) 321-4625, flaos@eectuc.com.

**The Nature Conservancy**

**Grant Award**

"Ramsey Canyon Preserve Parking Lot Runoff Reduction Project"

\$23,838

Runoff from the roof of the Ramsey Canyon Visitors Center and from the nearby forest road will be diverted and collected to reduce sediment transport to Ramsey Creek. Material retention systems will be installed to greatly reduce surface erosion to the creek and parking areas will be recontoured to direct runoff to planted areas. The project presents an excellent opportunity to educate the public about water harvesting, water conservation, urban runoff, and erosion.

**Gila**

**Boy Scouts of America, Grand Canyon Council, Inc.**

**\$Grant Award**

"Boy Scouts Camp Geronimo On-Site Sewer Improvements"

\$307,500

Plan to effectively eliminate any contamination to the ground water and to adjacent streams by upgrading the sewer systems at the camp. Modifications to include septic tank replacement, addition of secondary treatment facilities, additions to subsurface disposal facilities and conversion of individual campsite pit toilets to sealed vault and haul units. Project is located in a pristine ponderosa pine forested area at approximately 5800 feet elevation and will provide an example that can be applied to numerous Boy Scout camps throughout the state and nation. Outreach will include handouts and tours of the facilities to point out operational characteristics and environmental improvements.

**Greenlee**

**USDA, Apache-Sitgreaves National Forest Service, Clifton Ranger District**

**Grant Award**

\$34,390

"Coal Creek Riparian Corridor Enhancement "

The goal of this project is to isolate and recover the 2.5 mile, 265-acre riparian corridor by constructing a cattle guard and 5.5 miles of new fencing to allow for riparian and herbaceous species recovery and improved watershed function. Vegetation and wildlife diversity within the Coal Creek Riparian Corridor and watershed is expected to improve dramatically. The project will be announced in the local newspaper, the Copper Era, as well as in the Arizona Department of Transportation newsletter, highlighting the partners and accomplishments of the project. In addition, the site may be used for riparian education field trips for local schools.

**Darcy and Gary Ely, Owner, 4 Drag Ranch**

**Grant Award**

"Maylay Pasture Improvement"

\$45,750

Over-utilization of significant upland portions of the allotment by livestock and elk, has contributed to water turbidity, reduced the aquatic habitat of Eagle Creek and its upper

tributaries, and impacted the local survival of the spikedace and loach minnow. A reliable livestock/wildlife watering system, which includes a well, storage tanks, pipelines and drinkers will be developed to reduce turbidity in Upper Eagle Creek and improve the overall watershed condition. A State Water Protection Fund (WPF) Grant will provide matching funds for this project. A public presentation that provides for information transfer of project need, goals and objectives will be made at the Arizona WPF Information Transfer Meeting. Contact Darcy Ely at (520) 294-1039 or darcyely@aol.com for more information.

**Cathy Cosgrove, HERO Consulting**

"Martinez Ranch Water Quality Improvement"

**Grant Award**

\$124,460

HERO Consulting will implement best management practices (BMPs) at Martinez Ranch to reduce sediment movement and excess organic input to the San Francisco River. The project will also focus on BMPs to improve overall watershed health. This multi-faceted project will use fencing, revegetation, erosion control structures, and large woody debris to dissipate erosive energy, hold sediments and reduce downstream turbidity. As part of the educational effort, an information kiosk will be built to explain the project's goals and accomplishments. There will also be several presentations made, including the Greenlee County and Arizona Cattlegrowers Associations.

**Mohave**

**Hualapai Department of Natural Resources**

"Composting Restrooms for the Hualapai Reservation"

**Grant Award**

\$60,500

The Hualapai Tribe will construct two composting restrooms at remote tourist destinations along the Colorado River on the Hualapai Reservation. These restrooms will be similar to the one funded by the 319(h) grant program that was built on Spencer Beach. Each facility will contain a rotating carousel in which the waste composts with assistance from solar heating. The restrooms will prevent runoff of fecal coliform and E. coli from the sites and eliminate contamination to improve water quality. In addition to preparing and placing signs on the restroom facilities that describe the goals of the project, the tribe will prepare educational flyers that the helicopter companies will give to each of their clients to make them aware of the facilities.

**Pima**

**Coronado Resource Conservation and Development Area, Inc.**

"Palo Alto Runoff Control"

**Grant Award**

\$139,550

Best Management Practices (BMPs) will be implemented on a high priority area of the Alter Valley Watershed to control runoff that contributes sediment to the Santa Cruz River system. BMP's that will be implemented include water spreader dikes to control erosion and fencing for management to improve long-term watershed health. The objective is to reduce sediment production from gully erosion and headcutting on the historic floodplain of the Alter Wash on 1,370 acres of the Palo Alto Ranch. The outreach program will educate the public on the concept of functional ecosystems, the impacts and control of non point source pollution and emphasize the importance of being a stakeholder in a watershed.

Presentations and displays will be targeted at youth, agricultural producers and natural resource professionals.

### **Santa Cruz**

<b>National Audubon Society Appleton-Whittell Research Ranch</b> "Protect the Watershed by Upgrading Perimeter Fence of the Audubon Research Ranch"	<b>Grant Award</b> \$18,967
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To safeguard the watershed and riparian habitats of O'Donnell Creek, staff of the Audubon's Appleton-Whittell Research Ranch (ARR), will upgrade the existing perimeter fence to a new wildlife friendly fence. Five miles of perimeter fence will be installed to exclude all large, non-native herbivores and discourage off-road vehicular traffic. The fences will allow free access to native wild animals. There are two aspects of public outreach and education that will be addressed through this grant, direct contact with students and indirect contact with a wider public through various media. The educational portion of this project will present the rationale for protecting riparian areas and watersheds using wildlife friendly fence techniques and will include construction instructions. This project relies heavily on volunteer labor contributed by college students participating in alternative break programs. Contact the Audubon Research Ranch at (520) 455-5522 or [researchranch@audubon.org](mailto:researchranch@audubon.org) for more information.

<b>National Audubon Society Appleton-Whittell Research Ranch</b> "Installation and Outreach of Wisconsin Mound Septic System at the Audubon Research Ranch"	<b>Grant Award</b> \$13,650
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The Audubon Research Ranch will replace a failed septic system with a reliable, advanced system, the Wisconsin Mound System. As part of their *Get Grassrooted* educational series, they will develop a brochure and host workshops on groundwater protection and alternative septic systems. As a demonstration, they hope the new system will encourage neighbors in the Sonoita Valley to install advanced septic systems for new construction or replacements to help improve Arizona's water quality. Contact the Audubon Research Ranch at (520) 455-5522 or [researchranch@audubon.org](mailto:researchranch@audubon.org) for more information.

<b>Richard C. Collins, C6 Ranch</b> "Water Development, Fencing, Erosion Control and Monitoring to Enhance the Implementation of Deferred Rotational Grazing on the C6 Ranch"	<b>Grant Award</b> \$55,546
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The name says it all! The grant seeks funds to improve water quality by 1) building fences around water sources and new critical areas to exclude livestock, 2) developing livestock water sources in the uplands, 3) building fences to facilitate control and movement of cattle, 4) constructing erosion control dams in gullies, and 5) implementing a comprehensive plan for monitoring. Field trips will be conducted for local 4-H clubs and college agricultural and natural resource students to see the improvements and results first hand. In collaboration with the University of Arizona Extension Service, the C6 Ranch will be used as an example and teaching opportunity.

## Yavapai

### **Upper Agua Fria Watershed Partnership**

“Pilot Project to Clean-up Dumpsites on the Big Bug Creek and the Agua Fria”

### **Grant Award**

\$5,000

The Upper Agua Fria Watershed Partnership will develop a process to educate and organize local volunteers in the Upper Agua Fria Watershed (UAFW) to clean up three miles of scattered dumpsites in the riparian section of the Big Bug Creek. The Partnership plans to develop an “Adopt-A-Stream-Segment” program like a neighborhood watch, to discourage future dumping and to encourage watershed-wide prevention and clean-up initiatives. Members of the Partnership will speak to various local groups to seek volunteers and educate the public on nonpoint source water quality problems. Contact Mary Hoadley, UAFW Partnership Chair, at (928) 632-7135 for more information.

### **USDA, Coconino National Forest Service**

“Fecal Coliform and Sediment Reduction for Oak Creek in Redrock County”

### **Grant Award**

\$32,488

This project will decrease sediment delivery into Dry Creek. At least 10 acres of completely bare ground will be stabilized and restored at five sites resulting in decreased on-site soil erosion and improved long-term soil productivity. The Forest Service will also install three restrooms at popular trailhead sites to eliminate the potential for fecal coliform contamination. Public outreach for this project will include the placement of interpretive signs near the toilets. In addition, a press release will be prepared and sent to all Coconino National Forest contacts in order to inform the public of the grant. For more information please contact Jennifer M. Burns, Sedona District Landscape Architect, at 928-282-4119 or [jmburns@fs.fed.us](mailto:jmburns@fs.fed.us).

## **85% in Yavapai and 15% of affected area in Coconino**

### **EcoResults! Inc.**

“Upper Verde Collaborative Watershed Restoration Project”

### **Grant Award**

\$55,700

This project will reduce sedimentation in the Upper Verde River Watershed through creation of new pastures for better time controlled grazing, juniper tree removal, and reclaiming gullied roadways and eroding rangelands through hay trampling. Public outreach through education workshops will be conducted to educate many area ranchers, agency personnel and other individuals from the Prescott and Chino Valley areas on the benefits of the methods used with this project. Contact Norm Lowe at (928) 527-0661 or [loweflag@aol.com](mailto:loweflag@aol.com) for more information.

## **ADEQ Awards \$1.2 Million for Water Quality Improvement Projects**

PHOENIX (Dec. 30, 2002) -- The Arizona Department of Environmental Quality today awarded \$1.2 million to fund 10 projects statewide as part of its efforts to improve water quality and watershed conditions.

The funds, which are provided by the U.S. Environmental Protection Agency under the Clean Water Act, will assist recipients with "on-the-ground" implementation projects that protect or improve water quality by controlling non-point source pollution.

Non-point source pollution is the nation's largest source of water quality problems. It occurs when rainfall, melting snow, or irrigation runoff picks up pollutants and deposits them in rivers, lakes, coastal waters or other ground water sources. Agriculture, forestry, grazing, septic systems, recreational boating, urban runoff and construction all contribute to this problem.

In the past two and one half years, ADEQ's Water Quality Improvement Grant Program has provided more than \$5.4 million to both public and private entities to improve water quality in Arizona.

"The Water Quality Improvement Grant Program provides funding at the local level to implement creative approaches to improve watersheds," said Karen Smith, director of ADEQ's Water Quality Division. "Through federal, state and local partnerships, we are improving watersheds and ensuring their integrity for future generations."

The 10 projects, listed by county, receiving grant awards are:

### **Apache County**

James W. Crosswhite

EC Bar Ranch Turbidity Reduction Project - \$31,440

The primary goal of the project is to preserve, protect and enhance water quality by minimizing impacts of turbidity pollution discharged to surface and groundwater from nonpoint sources along a 2.5-mile section of Nutrioso Creek. The project includes relocating riparian fencing, installing elk proof fencing, performing vegetative monitoring and conducting public education and outreach.

### **Cochise County**

San Pedro National Resource Conservation District

St. David Community River Cleanup - \$30,513

This project will allow community partners who are concerned about the impact of heavy trash dumping in the San Pedro River to cleanup a section north of the National Conservation Area and raise awareness of the problem through a public education and outreach effort.

The Nature Conservancy of Arizona

3 Links Farm Riparian Habitat Restoration - \$137,896

This project will create and fence a riparian management zone to protect and enhance habitat and water

quality conditions on the 3 Links Farm, San Pedro River.

### **Graham County**

Coronado RC&D

Vegetative Rehabilitation to Control Runoff and Sediment from Frye Mesa - \$171,500

Sweet Resin Bush, a noxious weed introduced to the area is destroying vegetation cover on 1,500 acres of Frye Mesa leading to increased erosion and sediment discharge. This project will restore native vegetation to the area to reduce runoff and improve water quality.

### **Greenlee County**

Apache-Sitgreaves National Forests

Hell's Hole Spring Developments - \$21,316

The goal of the project is to expand capacity, improve water quality, and improve the wetlands associated with Yellow Bull, Upper Linden, Coyote, and Miner Springs.

### **Maricopa County**

Universal Entech, LLC

Algal Bioreactor Filtration System for Removal of Nutrient Contamination - \$168,685

This demonstration project will use an algal-based biological filtration technology to treat agricultural runoff waters from irrigation drainage ditches prior to entering the Gila River. The goal is to reduce nutrient contamination and raise dissolved oxygen levels in the Gila River, from its confluence with the Salt River to Painted Rock Reservoir.

### **Navajo County**

Arizona Community Tree Council

Trees for the Rim - \$413,640

This project will provide trees and other vegetation, at no cost, to those private property owners whose trees and landscape plants were destroyed during the Rodeo-Chediski fire, June 2002, as a means of restoring area vegetation and preventing future runoff pollution.

### **Santa Cruz County**

Montessori De Santa Cruz Charter School

Santa Cruz River Riparian Revegetation Plan - \$36,644

This project will enable Friends of the Santa Cruz River, the Montessori de Santa Cruz Charter School, and the Tumacacori National Historical Park Service to improve water quality along the Santa Cruz River by repairing riparian habitat, providing student training and monitoring and conducting community education and outreach.

## **Yavapai County**

Maughan Ranches

Upper Hassayampa River Watershed Restoration - \$39,900

Wagoner & Crooks-Maverick Allotments

The project will improve the surface flow and water quality of approximately seven miles of the Hassayampa River from Milk Creek to the boundary of the Hassayampa River Canyon Wilderness Area. By increasing the ability to manage livestock movements, the project will reestablish a homogeneous vegetation cover across the landscape, and restore soil conditions on significant national forest grazing allotments. Buffers of enhanced grass and shrub cover will trap sediment that contribute to chemical pollution and turbidity in the Hassayampa.

M Diamond Management, LLC

M Diamond West Clear Creek Proposal - \$119,100

This project will reduce runoff pollution on the rangeland adjacent West Clear Creek by installing fences, a corral and an alternative water system as part of an overall rotational grazing management plan.

# ***ADEQ Water Quality Improvement Grant Projects FY 03-04 Awarded***

## Apache

<b>6-004</b>	<b>EC Bar Ranch</b>	<b>EC Bar Ranch Turbidity Reduction Project - Phase VI</b>	<b>\$182,250.00</b>
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Project will preserve, protect and enhance water quality by minimizing impacts of turbidity pollution discharged to surface and groundwater from nonpoint sources. Project area will include a 7 mile section of Nutrioso Creek including property owned by 2 private landowners and USFS. Practices are recommended in the "Nutrioso Creek TMDL - For Turbidity".

<b>6-015</b>	<b>Ecosphere Environmental Services</b>	<b>Juan Curley Project, Navajo Nation</b>	<b>\$44,515.00</b>
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The proposed project is to develop and implement a grazing management plan for a 270 acre Navajo allotment. Also proposed are streambank and gully erosion corrective actions and community outreach.

## Cochise

<b>6-001</b>	<b>Coronado RC&amp;D Area, Inc.</b>	<b>Cottonwood Creek Restoration Through Sediment Control</b>	<b>\$102,900.00</b>
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This project will control erosion on the bank and immediately adjacent to Cottonwood Creek in the Whitewater Draw Watershed. Best management practices to be implemented are: gabions for grade stabilization, fencing for livestock exclusion and water system for vegetative management.

## Coconino

<b>6-023</b>	<b>Oak Creek Canyon Task Force Grant Management, LLC</b>	<b>Oak Creek Canyon Task Force Water Quality Program</b>	<b>\$131,904.00</b>
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Design and construct toilets and a wastewater treatment and disposal system at Indian Gardens Visitor Center; Design and construct sediment control structures throughout Oak Creek Canyon; develop a task force WebPage; expand the "keep Oak Creek Canon Beautiful" program.

## Gila

<b>6-013</b>	<b>Boy Scouts of America - Grand Canyon Council</b>	<b>Boy Scout Camp Geronimo On-Site Sewer Improvements</b>	<b>\$230,310.00</b>
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Modifications to existing on-site septic tank treatment systems to alleviate potential ground water and surface water contamination of adjacent streams. Modifications to include septic tank replacement, addition of secondary treatment facilities, addition of subsurface disposal facilities and conversion of individual campsite pit toilets to sealed vault and haul units. Project is a continuation of improvements outlined in 2001 Grant award.

## Graham

<b>6-010</b>	<b>Gila Watershed Partnership</b>	<b>Peterson Wash Stabilization</b>	<b>\$115,950.00</b>
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Rehabilitation of the Peterson Wash area on the Gila River to reduce erosion and sediment transport and protect the only route to the Safford and Graham County Landfill.



**6-011 Gila Watershed Partnership San Simon Soil Restoration Project \$23,300.00**

The restoration of an area of eroded and unproductive land to decrease erosion and reduce animal impact in the riparian area.

Greenlee

**6-012 Gila Watershed Partnership Point of Pines Crossing Rehabilitation Project \$22,300.00**

To rehabilitate the Point of Pines gate and surrounding fence area to reduce stream bank erosion and sediment load caused by domestic livestock, wildlife and vehicles.

Navajo

**6-008 Overgaard Townsite Water District Overgaard Townsite Water Protection Project - Phase II \$123,543.00**

Install "Fast" System

Santa Cruz

**6-007 Coronado RC&D, Inc. Santa Cruz River Sediment Control \$89,100.00**

Install 800 feet of Kellner Jacks along south river road bank of the Santa Cruz River to protect it from erosion that deposits sediment in the river. The river bank will be revegetated with native species to provide additional protection.

Yavapai

**6-002 Henry Dahlberg Foundation Ash Creek Watershed Project \$21,670.00**

Remove sedimentation caused by road and steep side drainages. Mitigate erosive effects of planned forest thinning and prescribed burns.

**6-003 Arizona Game and Fish Department Upper Verde River Wildlife Area Turbidity Reduction Project \$52,000.00**

This project will institute 4 restoration measures with post-project monitoring to enhance water quality for the citizens of Arizona by reducing nonpoint pollution sources in the Verde River. These measures include; 1) fencing to exclude livestock from the riparian area, 2) road obliteration and barriers to control vehicle and OHV travel; 3) stream bank slope adjustment, and 4) revegetation of native plants and overgrazed floodplain terraces, exposed and barren stream banks and areas closed to vehicular traffic.

**6-017 Arizona State Parks - Redrock State Park Red Rock State Park Constructed Wetland and Restoration 2003-2004 \$27,500.00**

The project is the conversion of a failing evapotranspiration bed (nonpoint source pollution), to a constructed wetland. The wetland will receive wastewater and other runoff and provide filtering, settling, volatilization, and evapotranspiration. The wetland will provide beneficial habitat for wildlife as well as an interpretive opportunity for the 70,000+ people who visit the park. We will also address a sloped area void of vegetation by establishing native vegetation.

**6-019 M Diamond Management LLC West Clear Creek Tributary Watersheds \$224,177.00**

Collaborative project to reduce nonpoint source pollution and restore watershed by improving hydrologic function and ephemeral stream channels.

**6-021 Upper Agua Fria Watershed Partnership Wildcat Dumpsite Clean-up - Phase II \$10,000.00**

To clean dumpsites on the Big Bug Creek, tributary to the Agua Fria River, between Cordes Lakes and Mayor in central Yavapai County.

# ***ADEQ Water Quality Improvement Grant Projects FY 04-05 Awards***

## **Apache**

7-001	EC Bar Ranch	EC Bar Ranch Turbidity Reduction Project - Phase VII	\$60,000.00
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Best management practices will be implemented to control nonpoint source pollution and restore natural resources. Project BMPs include the installation of elk fencing, water well, drinker, sprinkler system, vegetative planting, and invasive weed control. This grant supports the goals and objectives of the Upper Little Colorado Watershed Watershed-based Plan and implementation recommendations from ADEQs Nutrioso Creek Total Maximum Daily Load for turbidity. Partnerships include: Steward Incentive Program, Environmental Quality Incentive Program, Arizona Water Protection Fund, Arizona Game and Fish Department, US Fish and Wildlife, Western Region Sustainable Agriculture Research and Education and the U.S Forest Service. The project area includes about 3 miles of Nutrioso Creek located on the 400 acre EC Bar Ranch owned by Mr. Crosswhite.

## **Cochise**

7-002	Coronado RC&D Area, Inc.	Campomocho-Sacaton Watershed Stormwater Runoff Control Phase II	\$179,800.00
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This project will reduce the amount of sediment produced off 12,800 acres of rangeland in the Campomocho sub watershed of Willcox Playa. The objective is to manage precipitation that falls in the upper watershed, utilizing it for plant growth and reducing runoff. The best management practices that will be implemented include installing sediment retention structures and contour ripping and seeding to reestablish vegetation. Water quality will be improved by reducing the amount of sediment being transported off the upper watershed during rain fall events. In addition to erosion control, best management practices will be implemented to improve wildlife habitat and reduce safety concerns brought by flooding and sediment deposition.

## **Coconino**

7-003	Boy Scouts of America Grand Canyon Council	Boy Scout Camp Raymond On-site Sewer System Improvements	\$150,600.00
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The primary goal of this project is to reduce potential pollution to a pristine area of the Verde Watershed. The goal is to effectively eliminate any potential contamination to the ground water, adjacent springs, streams and an existing well by upgrading the sewer systems at the camp that have been in place for over 30 years. Modifications to include septic tank replacement, addition of secondary treatment facilities, addition to subsurface disposal facilities, and conversion of individual campsite pit toilets to sealed vault and haul units.

## **Gila**

7-004	Franciscan Friars of California, Inc.	The Gibson Mine Total Maximum Daily Load Reduction to Pinto Creek	\$570,106.00
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The Franciscan Friars of California, Inc. and Brown and Caldwell will remediate the abandon Gibson Mine (near Globe) to improve water quality in Pinto Creek. Pinto Creek is impaired by copper and the Gibson mine has been identified in both the Phase I Pinto Creek Total Maximum Daily Load (TMDL) report and the preliminary Phase II TMDL as the major source of copper contamination.

**Gila**

7-005	Gila County Division of Health and Community Services	Gila County Ground and Surface Water Improvement Project	\$252,467.00
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The Gila County water quality improvement project will protect and preserve the ground water and surface water in Gila County by replacing, repairing, and upgrading current waste water systems (i.e. cess pools, pit privy, structurally unsound and/or failing septic systems) in the Tonto Creek (headwaters) and Christopher Creek Total Maximum Daily Load focus areas. As a result, ground water and surface water will improve as well as the health and safety of residents.

**Graham**

7-006	Gila Watershed Partnership	Central Detention Dam Rehabilitation	\$15,600.00
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The Gila Watershed Partnership will rehabilitate the Central Detention Dam, a 27-foot high earthen structure that was built in 1948 to serve as a flood control dam. It serves to reduce erosion during periods of heavy rainfall and allows for maximum recharge to the hydrologic system. However, since 1948, the detention dam has been poorly maintained and desperately needs maintenance. Maintenance practices include: cleaning the spillway, removing debris and sediment, and clearing the excessive vegetation (mesquite, creosote, and salt cedar) in the outlet structure and emergency spillway. Off-highway vehicle damage will also be repaired and a fence will be installed to serve as a vehicle deterrent. Lastly, signage will be placed to provide the necessary education and outreach.

**Greenlee**

7-007	Gila Watershed Partnership	Kaler Ranch Erosion Control Project	\$167,000.00
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The goal of this project is to preserve, protect and improve water quality by reducing sediment discharge and excess organic input to the San Francisco River. This project, located in the San Francisco River sub-watershed of the Upper Gila, includes extending and improving road drainage culverts that are used to drain water from a highway and construct streambank protection structures. The project also includes an education and outreach effort designed to inform and educate the community.

**Santa Cruz**

7-008	Coronado RC&D Area, Inc.	Partnership to Improve Water Quality in Redrock Canyon/Upper Santa Cruz Watershed	\$249,302.00
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This project addresses sediment production on the entire Red Rock Canyon Watershed that drains the Canelo Hills east of the Town of Patagonia in Santa Cruz County. 95% of the Red Rock Watershed is contained in 5 grazing allotments. These allotments have joined together to implement best management practices over the entire watershed. The best management practices will include alternative sources of water in the uplands, fencing, and revegetation.



**Graham**

8-006 Gila Watershed Partnership \$110,500  
*Gila River Clean up Project*

The Gila Watershed Partnership will address an illegal dumpsite along and in the Gila River. This project will clean up an estimated 6000 tons of garbage. The debris and garbage contain hazardous waste as well as oil and grease. There is runoff into the Gila River during and after rainfall events.

**Greenlee**

8-007 Upper Eagle Creek Watershed Association \$360,930  
*Upper Eagle Creek Watershed Restoration Project*

The Upper Eagle Creek Watershed Association's project goal is to alleviate nonpoint source pollution by excluding cattle from Eagle Creek and other riparian areas through fencing, providing alternative water sources for livestock, and applying intensive grazing management techniques, including rotational grazing on various allotments within the watershed.

8-008 Gila Watershed Partnership \$169,800  
*Kaler Ranch Erosion Control Project Phase II*

The Gila Watershed Partnership's goal for this project is to preserve, protect and improve water quality by reducing sediment discharge and excess organic input to the San Francisco River. Best management practices will include extending and improving road drainage culverts, adding sediment collection boxes and ditches, and a sediment retaining wall.

**Mohave**

8-009 Hualapai Tribe \$50,000  
*Bank Stabilization at Spencer Beach-Protection of Composting Restroom*

The Hualapai Tribe and the engineering firm, Natural Channel Design, propose to stabilize the banks surrounding the composting restroom at Spencer Beach in the Grand Canyon along the Colorado River. Currently, the restrooms are being threatened by erosion. Through this project an engineering design will be developed and implemented to prevent future loss of the restroom and subsequent contamination of the Colorado River.

8-010 Hualapai Tribe \$52,160  
*Composting Restroom for the Hualapai Helipad Tourist Destination*

The Hualapai Tribe's goal of this project is to construct a composting restroom next to the helipad landing area located next to the Colorado River in the Grand Canyon. Currently, there are no restrooms in the vicinity for tourist to use before leaving on Grand Canyon river boat tours. As a consequence, human waste is being deposited along the vegetation which eventually makes it the river.

**Santa Cruz**

8-011 Coronado Resource Conservation & Development Area, Inc. \$18,470  
*Erosion Control in the Babacomari/Upper San Pedro Watershed*

The goal of the E Lazy H Ranch and the University of Arizona Cooperative Extension is to stabilize two gullies in Lyle Canyon that are contributing sediment to the Babacomari River. Best management practices will be implemented to stabilize the slopes of these gullies as well as introduce erosion control mats, waddles, and revegetation practices.

8-012 Coronado Resource Conservation & Development Area, Inc. \$52,500  
*A Watershed Approach to Improving Water Quality in Red Rock Canyon - Phase 2*

The Canelo Hills Coalition is a group of ranches in Santa Cruz County that are working together to improve water quality in Red Rock Canyon, a tributary to Sonoita Creek and the Upper Santa Cruz Watershed. The Canelo Hills Coalition is working with the Coronado Resource Conservation & Development Area, Inc. on this project to address sediment delivery by improving watershed health through the implementation of best management practices that facilitate a rest-rotation grazing system to maximize vegetation on the watershed.

**Yavapai**

8-013 Prescott Creeks Preservation Association \$ 217,982  
*Granite Creek Watershed - Water Quality Improvement and Monitoring Program*

The Prescott Creeks Preservation Association's goals of this project are to implemented four project components; 1) redesign and construct a stormwater runoff basin, 2) apply stenciling to storm drains informing the public of the consequences of dumping waste down the drain, 3) develop BMP for ranchers/community along a riparian area, and 4) monitor for metals and bacteria to assess water quality improvement.

***ADEQ Water Quality Improvement Grant Projects  
FY 06-07 Awards***

***Cochise***

9-001	Coronado RC&D, Inc.	Sediment Reduction in Whitewater Draw using Watershed Partnership	\$114,950.00
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Four ranchers managing 61,500 acres of rangeland that drains into Whitewater Draw have formed a working partnership to address sediment entering Whitewater Draw and the National Wildlife Area below it by restoring the uplands of the Hay Mountain Watershed. The ranchers have been working with NRCS to develop conservation plans and implement practices to improve livestock management on their individual ranches. As a group, they have identified practices that will improve the health of the watershed, slow runoff, reduce sediment and improve water quality downstream. Practices to be implemented in this phase will focus on healing gully erosion and slowing runoff from the upper watershed by installing check dams and water spreader dikes on 7,000 acres identified as a high priority. This project will reduce sediment entering Whitewater Draw by an estimated 22,000 tons per year after implementation.

***Graham***

9-002	Gila Watershed Partnership	Graham County Abandoned Vehicle Removal Project	\$79,150.00
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This project will improve water quality through the removal of over 400 abandoned vehicles that have accumulated in Graham County in washes and along the banks of the Gila River. These 400 abandoned vehicles will be identified, and once titles are obtained they will be towed to a salvage yard. There, the hazardous fluids and parts containing hazardous material will be removed, and a salvage company will be hired to crush the vehicles and remove them for recycling.

***Greenlee***

9-003	Coronado RC&D, Inc.	Eagle Creek Watershed Restoration - Double Circles Ranch	\$95,100.00
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The Eagle Creek Watershed in northern Greenlee County is 161,172 acres of grazing land primarily leased from the US Forest Service. The ranchers in the area have been working together for the past several years to implement practices on a landscape scale that will improve water quality in Upper and Lower Eagle Creek. Because the area is large, involved multiple ranchers and multiple practices, the implementation of practices was divided into phases. In 2006 ADEQ awarded grant No. 8-007 to the watershed group for the implementation of water quality improvement practices and monitoring of their impacts. This project will be conducted in a partnership with Coronado RC&D and is a continuation of that project to install an additional 5.5 miles of fencing on the Double Circles Ranch that will support the implementation of a rotational grazing system that will benefit Eagle Creek.

9-004	Duncan Valley Canal Company	Gila River Water Quality Improvement - Duncan Valley	\$250,000.00
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This project will address sediment entering the Gila River from farmland along a two mile reach starting at the New Mexico border. To be effective, the first step of the project centers around the disintegrating Valley Canal that bisects the valley, carrying irrigation water from the River and private wells to the farm fields. This concrete canal was constructed in 1965 and is maintained by the Duncan Valley Canal Company. The expected life span of the canal has been reached, the concrete is no longer strong enough to contain the water without breaking. These breaks cause concentrated flow that picks up sediment in the fields and carries it to the river. Banks above the canal contribute sediment with each storm that becomes trapped in the canal and has to be cleaned out. Cleaning deposits fine grained, loose sediments on the down slope side, concentrating them in an area susceptible to erosion. It is estimated that this area generates 270,000 tons of soil annually with 70% of it reaching the river. Efforts to reverse the erosion and sedimentation of this area must begin with the replacement of the Valley Canal.

## Navajo

9-005 Town of Pinetop-Lakeside Rainbow Lake Water Quality Enhancement \$32,000.00

Rainbow Lake is a 125 acre man made impoundment on Walnut Creek, located in the Silver Creek sub-watershed of the Little Colorado watershed. The lake had been classified as eutrophic by ADEQ, with the current major source on nutrients being the macrophyte and sediment cycling of those nutrients. Runoff from lands surrounding the lake also contributes high nutrient loadings related to domestic and livestock animal wastes and fertilizers. The project will directly address this nonpoint pollution source through the construction of vegetated buffer strips designed to capture nutrients from

## Pima

9-006 City of Tucson Parks & Recreation Dept Optimizing Reclaimed Water, Groundwater, and Stormwater Inputs at Tucson's Lakeside Lake \$54,978.00

The overall goal of the project is to optimize reclaimed water, groundwater, and stormwater inputs at Tucson's Lakeside Lake to improve urban fishing and recreational uses and related habitats. The City of Tucson will employ multiple activities to control pollutants from nonpoint sources that contribute to Lakeside Lake. Alum dosing treatment will address both the point source (reclaimed water line) and nonpoint source (general dispersal in the lake) to remove phosphorous as recommended in the TMDL report for this water body. However, this grant will only fund the nonpoint source portion (40%) of the alum treatment. Other nonpoint source activities include controlling landscape drainage, providing bait disposal options for fisherpersons, removing debris from Lakeside Lake Park and Atterbury Wash, and providing active public outreach regarding BMPs to prevent pollution of washes in the area. Ongoing operation of an aerator system at the lake is included in the project.

## Yavapai

9-007 Prescott Creeks Preservation Association Granite Creek Watershed - Water Quality Improvement Phase II \$99,062.00

This project will build upon ADEQ and EPA's past investment by implementing water quality improvements, protections, and maintenance to the area directly downstream from the redesigned and reconstructed storm water detention basin addressed in ADEQ grant # 8-013. It will also have direct benefit to Granite Creek and Watson Lake – both impaired waters. This will be the second phase of the Granite Creek Watershed Water Quality Improvement and Monitoring Program to restore the stability of the Granite Creek stream channel while maintaining natural dynamic stream processes: proper hydrologic conditions and functions, stream morphology and channel characteristics, and floodplain functions - all resulting in water quality improvements for Granite Creek and Watson Lake.

9-008 Prescott Creeks Preservation Association Watson Woods Riparian Preserve - Restoration Project Phase I \$483,191.00

This water quality improvement project at Watson Woods Riparian Preserve will result in direct benefits to two impaired water bodies through implementation of a series of interconnected, ecosystem-wide efforts that include on the ground implementation of numerous best management practices, community involvement and education, as well as project performance monitoring. Watson Woods Riparian Preserve is a Fremont cottonwood/red willow gallery forest located along Granite creek, a mixed perennial/intermittent headwater creek in the Verde Watershed. The 126 acre Preserve is the remaining portion of what was once a 1000 acre riparian gallery forest near Prescott, Arizona. This project will restore the stability of the Granite Creek stream channel while maintaining natural dynamic stream processes: proper hydrologic conditions and function, stream morphology and channel characteristics, and flood plain functions – all resulting in water quality improvements for Granite Creek



# Water Quality Improvement Grant Projects

## 2007-2008 Grant Cycle 10

### **Graham County**

*Noland Ranch*

*The Gila River Box Conservation Area Livestock Deterrent Fence* **\$136,900.00**

The Gila River Box Conservation Area Livestock Deterrent Fence calls for the re-construction of the fence line on the entire south western border of Turtle Mountain Allotment. This fence separates three BLM Allotments and serves as the most effective deterrent for livestock entering the Bonita and Gila River Box National Conservation Areas. Due to the age of the fence the current condition is very poor and is non-effective in deterring of livestock. This project will affect the entire Bonita Creek & Gila River Box Conservation Area by restricting the entrance of livestock. Limiting the access of livestock into the river bottoms will benefit water quality for those living downstream.

### **Greenlee County**

*Coronado Resource and Conservation Development Area*

*Eagle Creek Watershed Restoration-Double Circles Ranch Phase III* **\$92,294.00**

The Eagle Creek Watershed in northern Greenlee County is 161,172 acres of grazing land primarily leased from the US Forest Service. The ranchers in the area have been working together for the past several years to implement practices on a landscape scale that will improve water quality in Upper and Lower Eagle Creek. This project will install fencing to exclude cattle from Eagle Creek and Sheep's Spring. Implementation of this grant supports a rest-rotation grazing system to distribute grazing across the watershed, reduce damage from trespass cattle and support habitat for critical species.

### **Gila County**

*Tonto Rim Christian Camp*

*Tonto Rim Christian Camp Water Quality Improvement Grant* **\$260,000.00**

To protect and preserve the ground water quality in Tonto Creek by replacing existing failing septic system drain fields installed at the camp between 1972-1993 with nitrogen reducing advanced treatment system and utilizing a drip irrigation disposal. The Arizona Department of Environmental Quality completed a Total Maximum Daily Load (TMDL) study on the upper Tonto Creek and Christopher Creek area in June of 2004. The study noted human sewage as one of the major contributors to the non-point source pollution of these affected waters. The project will improve water quality by reducing the pollutants entering the stream.

### **Maricopa County**

*City of Phoenix Human Services Department*

*Sustainable Design for the Southwest Family Services Center – Pervious Concrete Demonstration Project to Mitigate Storm Water Pollution.* **\$260,000.00**

This Southwest Family Services Center “Green-Build” project hopes to demonstrate a pervious concrete parking lot can mitigate storm water runoff pollution endemic to the area. The project site lies in a rapidly changing urbanized area of Phoenix, up gradient of the Salt River, Tres Rios Constructed Wetlands, and ultimately the Gila River confluence. At the same time the parking lot mitigates storm water borne pollution, the site will also demonstrate reduced micro-climate urban heat island effects and airborne dust pollution.

### **Mohave County**

*Hualapai Tribe*

*Sediment Reduction into Diamond Creek and the Colorado River, Grand Canyon* **\$35,000.00**

Sediment erosion occurs when vehicles cross and drive down Diamond Creek to get to the Colorado River to take out or drop off for rafting trips. It is estimated that over 2,400 vehicles used this road in the year 2007, with increasing numbers expected for the years to come. This grant will be used to channel and divert the creek from the road and construct check dams where appropriate to alleviate the erosion of sediment into Diamond Creek and the Colorado River. Water quality and macroinvertebrate communities will be monitored and education efforts will be directed to drivers and visitors of to the river.

### **Navajo County**

*White Mountain Apache Tribe*

*White Mountain Apache Tribe’s Water Quality Improvement Grant* **\$260,000.00**

The main goal of this project is to rehabilitate and restore the water quality that has been degraded by frequent flooding and land erosion from the 2002 Rodeo-Chediski Fire. The Rodeo-Chediski considered the most severe wildfire in Southwest history, occurred on the federally-recognized Fort Apache Indian Reservation in east-central Arizona. Several watersheds on the northwestern side of the homeland of the White Mountain Apache Tribe were severely burned including Canyon, Willow, Salt, and Cibecue Creeks. The impacts of the burn area are still affecting the west-end reservation community of Cibecue in the form of flooding in Cibecue Creek that flows through the central valley area of the community with an approximate population of 2,000 out of the total tribal population of 15,000. This grant will mitigate the damage to the land and water and address the importance of water quality and its beneficial uses for the reservation communities.

### **Santa Cruz County**

*USDA Forest Service*

*Mesquital Fence and Pipeline*

**\$13,000.00**

This project provides implementation of best management practices including improved grazing management, a 1 mile of riparian/pasture fence in the Santa Cruz-Rio Magdalena-Rio Sonoita Watershed in the borderlands area of southern Arizona. The focus is on the ephemeral Sycamore and Providencia Canyons which flow into the Santa Cruz River. This project is part of a much larger watershed based effort which seeks to enhance water quality through improved grazing management at a landscape-scale level covering nearly 35,000 acres on the west side of the Patagonia Mountains

**Yavapai County**

*Yavapai County Flood Control*

*The Pioneer Park Stormwater Quality Improvement Plan*

**\$369,271.00**

This water quality improvement demonstration project at Pioneer Park will protect the site's major unnamed watercourse which discharges into Granite Creek and ultimately into the Verde River in the Upper Verde Watershed, through implementation of numerous best management practices, public education, outreach, and partnership as well as performance monitoring. Pioneer Park, a regional multi-use recreational complex is comprised of 996.43 acres, is a major contributor of hydrocarbon pollutants and sediments due to urban runoff and habitat degradation. This project will not only remove pollutants from Pioneer Park watercourse, it will recharge the Prescott aquifer with clean water. The EPA has designated Yavapai County as a phase II, MS4 community due to population growth, density of population and the potential of being a major contributor to the degradation of our streams and rivers.

*Henry Dahlberg Foundation (Mingus Springs Outdoor Learning Center)*

*Ash Creek Watershed Improvement Project*

**\$32,289.00**

Mingus Springs Outdoor Learning Center is located near the headwaters of Ash Creek on the Upper Agua Fria watershed. Water quality is threatened by a planned timber sale, increased traffic on the roads (up to 100 logging trucks a week), illegal off-road use and increased prescribed burning. This project implements best management strategies to mitigate these threats to water quality.

# **Water Quality Improvement Education Grants Recommended for Funding 2007-2008 Grant Cycle 10**

## **Coconino**

### **Oak Creek Canyon Water Quality Improvement Program**

*Pender Engineering*

**\$53,490.00**

This project will initiate a Trailhead Ambassador program for high school students. Once trained, Trailhead Ambassadors will work weekends and holiday weekends, 35 weekends from March to October, to greet visitors in Oak Creek Canyon day-use and overnight-use areas, explaining to visitors the risks associated with fecal contamination, reminding visitors of the stream of the importance of proper disposal of trash and human and pet wastes, and directing visitors attention to locations of toilettes, trash receptacles, recycling receptacles and dog waste stations. This program will provide up to one high school credit towards graduation upon completion of 120 hours of volunteer service.

The grantee will also install and maintain eight Barco<sup>®</sup> Dog Waste Disposal Stations at trailheads to educate recreational users about the importance of preventing the pollution that results from human and pet wastes. This project is a collaboration with Oak Creek Canyon Task Force.

## **Graham**

### **Gila Valley Best Management Practices on Crop Land**

*Gila Valley NRCD*

**\$12,880.00**

Project will address sediment loading, nutrient and pesticide runoff, and potential spreading of state listed noxious/invasive weeds into the Gila River through the installation of vegetative filter strips across the bottoms of irrigated fields. Due to shallow soils in the Gila Valley and the required slopes they attribute, excess irrigation water is a common occurrence. Any water that is not taken into the soil is returned to the Gila River. The vegetative filter strips will act as a "brake" for the water, slowing it to allow sediment and plant parts and seeds to remain on the fields. The vegetative filter strip will also act as a sink, absorbing excess nutrients and pesticides. Producers and the public will be educated through various classroom and hands-on workshops, news articles, publications, and informative brochures, mailings, field visits to view practices being implemented. Technical support will be provided by the Natural Resource Conservation Service.

### **The Dzil Nchaa Si'an /Mt. Graham Youth Practicum Education Grant Project**

*Gila Watershed Partnership*

**\$8,050.00**

The Dzil Nchaa Si'An Youth Practicum Education Project will educate Native American youth in environmental issues and water quality impairments in the Upper Gila Watershed. Funds will be used to develop a summer camp that would include

environmental and cultural activities. During the five-day practicum, tribal students will be encouraged to pursue professional natural resource careers, raise their ecological awareness, exemplify traditional connection to the earth, and enjoy the outdoors. The Dzil Nchaa Si'An Youth Practicum Education Project will build relationships between the Coronado Forest and Native American youth and provide for long-term collaboration to benefit the youth, their elders, their tribes, the land, and water quality.

### **The Upper Gila Watershed Steward Program**

*Gila Watershed Partnership*

**\$35,550.00**

The Upper Gila Watershed Steward Program is an education project that will enhance the Master Watershed Steward program. This will lead to the development of targeted water quality improvement projects in the impaired waters in the Upper Gila Watershed, and ultimately to the removal of these waters from the 303(d) list.

### **Maricopa**

#### **Stormwater Pollution Prevention in YOUR Neighborhood**

*City of Peoria*

**\$5,000.00**

An important element of a successful stormwater program is to enhance public awareness and understanding of stormwater pollution prevention issues which includes non-point source contamination. This is accomplished through a dedicated education plan. This grant project is to develop a stormwater pollution prevention education program for Peoria students in grades K -8. The education program will be titled "Stormwater Pollution Prevention in Your Neighborhood." The focus of the program is a hands-on, interactive stormwater model that allows the students to see the effects of non-point contaminants. The goal of the program is to educate the students on stormwater pollution prevention issues and identify positive behaviors that will enhance our environment on a long term basis.

### **Water's Changing Journey**

*Audubon Arizona*

**\$168,442.00**

The objectives of *Water's Changing Journey* include informing participants of the NPS pollution problem, educating them so that they may make changes in their personal behaviors, as detailed below, that improve local water quality and motivating them to participate in community cleanup projects. Located at the Nina Mason Pulliam Rio Salado Audubon Center on the banks of the Salt River just a mile south of downtown Phoenix, the project will focus on providing environmental education to the communities of South and Central Phoenix. The *Water's Changing Journey* project will consist of three education approaches:

- 1) A walk through the Center's approximately two-acre wetland area – the Water Journey Path. The walk will be guided by interpretive signage and supplemental printed material.
- 2) The opportunity for visitors to check out a 'water quality backpack' to complete self-guided activities along the Water Journey Path.

3) A formal two-hour naturalist or trained volunteer led program that focuses on water quality, the NPS problem and water monitoring activities.

### **Pima**

#### **Creating a Neighborhood Model to Address Urban Stormwater Pollution**

*Watershed Management Group*

**\$103,240.22**

This project will educate urban residents on nonpoint source pollutants and will train them in the implementation of BMPs to improve water quality in High School Wash in Tucson. The focus will be on BMPs designed to reduce stormwater runoff, erosion, and the transport of nonpoint source pollutants into the wash. A core group of five community leaders will be trained as educators in BMP design, monitoring, and maintenance. The project will also include wash clean-up efforts, outreach workshops to highlight project success, and the publication of a neighborhood guide for nonpoint source and stormwater BMPs specific to Arizona's environment.

### **Master Watershed Steward Program**

*University of Arizona*

**\$148,336.00**

The goal of the proposed project is to expand the focus of the Arizona Cooperative Extension's Master Watershed Steward Program (MWSP) to promote on-site water quality improvements and enhance watershed education state-wide. The current MWSP concentrates on general adult education. This proposed project will enhance the current program and extend the reach of MWSP to work with watershed partners and facilitate the implementation of watershed improvement projects. The project will be a collaborative effort between the Arizona Department of Environmental Quality (ADEQ), MWSP, Arizona Nonpoint Education for Municipal Officials Program (AZNEMO), Arizona Cooperative Extension, and various watershed partners.

### **Yavapai**

#### **From Education to Action in the Granite Creek Watershed**

*Prescott Creeks Preservation Association*

**\$67,875.50**

The purpose of this grant is to promote an awareness of water quality issues, promote behavioral changes, and to lead to pollutant load reductions to Granite Creek and Watson Lake - the impaired surface waters. This educational effort will strengthen other existing and future efforts to implement on-the-ground water quality improvement projects. Education will include: identification and assemblage of a watershed stakeholder group to participate in the Watershed Implementation Plan (WIP) process; volunteer training through workshops to actively care for water quality with hands-on, in-the-field training; design and construction of a trailer-mounted, mobile, interactive watershed model; development and distribution of a *Creek Care Guide*; and presentations to community and civic organization to discuss water quality issues and recruit potential volunteers for future on the ground projects.

## APPENDIX B

### Water Quality Improvement Grant Projects Awarded in FY 2009

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
<b>State-wide Cycle 11 grants</b>							
11-001/ 989613-08	Septic Tank Closures for Program Year 8 of Lake Havasu City's Sewer Expansion Program/ Septic tanks will be decommissioned and wastewater drain lines from residential properties will be connected to a centralized sewer collection system for treatment at an A+ wastewater treatment facility.	City of Lake Havasu City	Colorado/Lower Gila/Lake Havasu	Reduce nitrate loadings to groundwater in the Lake Havasu City area./ Septic tank decommissioning	No/ Nitrates	Yes/ 1996 Lake Havasu City Phase I Comprehensive Wastewater Master Plan, 1998 Phase II Wastewater Master Plan  Colorado River Sewer Coalition crrsco.org	\$300,000.00/ \$547,450.00
11-002/ 969984-07	E. coli Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch/ The San Francisco River in Greenlee County is listed on the EPA's 303(d) list for E.coli. The Gila Watershed Partnership has determined that the Kaler Ranch may be a major contributing factor to the E.coli problem. In order to remove the source of E.coli, we must provide the landowner sufficient alternative water sources. Funding is for the first of five solar-pumped wells the needed in order to permanently exclude all 100 head of cattle from the San Francisco River.	Gila Watershed Partnership	Upper Gila/ San Francisco River  Installing a solar-powered well to provide alternative water sources for cattle that currently have access to the San Francisco River.	Reduce cattle access to the San Francisco River, resulting in significant water quality improvements	Yes, E.coli/ E.coli, bacteria, nutrients	Yes/ NEMO Watershed Based Plan for the Upper Gila Watershed, TMDL in process	\$42,750.00/ \$55,267.25

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-004/ 969984-07	Wenima Wildlife Area Stream Restoration/ This is a streambank stabilization/riparian restoration project located on the Little Colorado River near Springerville, AZ. The goal of this project is to improve the water quality by reducing the amount of fine sediments entering the Little Colorado River in the Wenima Reach.	Arizona Game & Fish Department	Little Colorado/San Juan/ Little Colorado River	Project includes an initial phase in which critical sites for BMPs will be determined, and what those BMPs will be. Bank resloping, toe rock, and bioengineering including pole and post plantings, brush revetment, erosion cloth, and reseeding.	Yes/ turbidity turbidity and sediment	Yes/ 2002 ADEQ TMDL; NEMO Watershed Based Plan for the Little Colorado River Watershed	\$74,145.00/ \$50,042.00
11-005/ 989613-08	Water Quality Improvements for Francis Short Pond/ This project will address water quality concerns in the Francis Short Pond, the only permanent body of water in the City of Flagstaff, by reducing nutrient and fecal coliform loadings to the Pond and increasing the dissolved oxygen concentration. This will be accomplished through the installation of sedimentation and bio-retention cells at an upstream Dog Park.	City of Flagstaff	Little Colorado/San Juan/ Francis Short Pond/Rio de Flag	Bioretention area will double as a Low Impact Development (LID) Demo site. Partnerships with AG&F and the Audubon Society & schools where water quality and NPS reduction will be incorporated into science curriculum.	No/ sediment, nutrients, and bacteria	Yes/ NEMO Watershed Based Plan for the Little Colorado River Watershed	\$25,164.00/ \$22,522.00
11-006/ 989613-08	Middle Fossil Creek Water Quality Improvement Project/ The Middle Fossil Creek Water Quality Improvement Project will address recreational	U.S. Forest Service, Coconino National	Verde/ Fossil Creek	USFS is currently unable to install permanent toilets until a mang.	No/ bacteria/nutrients	NEMO Watershed Based Plan for the Verde River Watershed	\$211,825.00/ \$250,348.00



WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
	<p>impacts along the 4.6 mile Middle Reach of Fossil Creek where ~ 100 dispersed campsites are located in and immediately adjacent to the riparian zone. In conjunction with an Arizona Water Protection Fund grant and internal Forest Service funding, this project will address issue of human waste impacts in this reach of Fossil Creek through the initiation 2 year "pilot" program to address issues of efficiency and appropriate placement of temporary toilets along Middle Fossil Creek. Monitoring will be conducted to determine if toilets are used, their potential positive effects on water quality, and the potential for installation of permanent toilets in Middle Fossil Creek.</p>	Forest		<p>plan has been developed. If well maintained, temporary toilets will be an important piece of protecting Fossil Creek (an Outstanding/Unique water) in the interim. Strong education and outreach, as well as appropriate verification and monitoring methods to determine project success.</p> <p>Site planning and installation of temporary toilet facilities to mitigate recreational impacts at Fossil Creek.</p>			

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-007 /969984-07	Sediment Reduction from Runoff Using Best Management Practices/ Many areas on the property have been identified that are subject to severe side channel scour and down cutting from runoff and/or main stream bank erosion that send sediment to the river and can impact ranch structures – buildings, fences, roads. The focus area of this project will include the Ranch area downstream towards the Arcosanti Site and the Mind Garden Drainage.	Cosanti Foundation	Upper Agua Fria/Middle Gila/ Agua Fria River	Grant funds will be “buying” the planning process for the implementation (this grant, and also future implementation). Benefit: this project will demonstrate to the public the steps that should be taken to plan successful projects. Project site is a typical representation of wq issues in this area/along the Agua Fria. Teach the public how to handle these issues appropriately. Expertise involved in planning, implementation, and workshops (Natural Channel Design) makes this project likely to be successful.	No/ sediment	Yes/ NEMO Watershed Based Plan for the Upper Agua Fria Watershed	\$37,452.85/ \$25,010.00

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
<b>Targeted Watershed Improvement Grants</b>							
11-T01/ 969984-07	Granite Creek Watershed Improvement Plan and Council/ Granite Creek Watershed from the headwaters downstream to, and including, Watson Lake in the Prescott area will be the focus of the Watershed Improvement Plan. Pollutants of concern include nutrients and <i>E. coli</i> bacteria. Although not "impaired" for <i>E. coli</i> bacteria, recent monitoring to identify nutrient sources has shown <i>E. coli</i> bacteria exceedances.	Prescott Creeks Preservation Association	Verde/ Granite Creek, Watson Lake	Water quality monitoring, compilation and preliminary data analysis of water quality in the Upper Granite Creek Watershed, physical and social surveying, and a comprehensive understanding of the current state of water quality in the watershed and the potential contributing sources of pollutants leading to information to determine BMP sites for future projects.	Yes/ Granite Creek for low DO, Watson Lake for low DO, high pH, and high nutrients.	Yes/Verde Watershed Based Plan in development	\$299,961.00/ \$202,887.00

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-T02/ 969734-06	San Francisco River Targeted Watershed Improvement Plan/ This project is located in the Upper Gila Watershed of Arizona and the San Francisco and Blue Rivers in Greenlee County, Arizona. The pollutant of concern is E.coli. The scope of the project includes hiring a Watershed Improvement Coordinator, establishment of a Watershed Improvement Council (WIC) to direct the planning process and, a watershed survey to determine the source(s) of the pollutant, analysis of data, preparation of a Watershed Improvement Plan (WIP), recommendations, prioritization of and implementation of Best Management Practices, and monitoring to reduce the E.coli in the San Francisco River.	Gila Watershed Partnership	Upper Gila/ San Francisco River, Blue River	Physical surveys include recreation sites, wildlife, livestock, septic systems, social and financial surveys, analysis of data and interpretation and prioritization of the project including recommendation BMP sites	Yes/ E. coli	Yes/ NEMO Watershed Based Plan for the Upper Gila Watershed, TMDL in process	\$188,436.60/ \$128,702.80

Appendix C: WQIG Projects Awarded During FY10

State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body (Watershed)	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support	Award Amount
EV09-0035							
11-T03	Oak Creek Watershed Improvement Plan Grant†	Oak Creek Canyon Watershed Improvement Group	Oak Creek	Yes/ <i>E. coli</i>	To survey the watershed and develop a comprehensive Watershed Improvement Plan (WIP) to address NPS impairment issues. The WIP will identify and prioritize implementation projects in the watershed, as well as propose long-term plans and resources for watershed management.	ADEQ TMDL (1999, 2010)	\$311,603.00
EV10-0051							
12-001	Septic Tank Closures for Program Year 9 of Lake Havasu City's Sewer Expansion Program	Lake Havasu City Public Works Dept.	Lake Havasu (15030101)	No/Nitrates	Decommissioning 3100 residential septic tanks at residences being hooked up to sewer. This project is part of a larger-scale 9-year plan to sewer Lake Havasu City to reduce nitrates in groundwater.	Lake Havasu City Phase I Wastewater Master Plan, 1998 Phase II Wastewater Master Plan	\$550,000.00
12-002	Coyote Creek Watershed-scale Education and Training Grant†	Little Colorado RC&D	Coyote Creek/LCR Headwaters (1502000103)	Yes/Sediment	The grant money will be used to create a watershed improvement council, and to review existing and establish new best management practices in the Coyote Creek subwatershed. It also will develop site selection criteria for projects to reduce sediment and turbidity, foster community education and involvement, and develop volunteer water monitoring efforts.	ADEQ TMDL (2002)	\$123,604.00
12-003	San Pedro River Watershed Implementation Plan†	Coronado RC&D, Inc.	San Pedro River from Babocomari Creek to Dragoon Wash (1505020207)	Yes/ <i>E. coli</i>	To survey the watershed and develop a comprehensive Watershed Improvement Plan (WIP) to address NPS impairment issues. The WIP will identify and prioritize implementation projects in the watershed, as well as propose long-term plans and resources for watershed management.	NEMO WBP for the San Pedro Watershed, ADEQ TMDL in progress	\$265,551.00

State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body (Watershed)	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support	Award Amount
12-004	Community Stewardship Model for Green Streets	Watershed Management Group	Santa Cruz River (15050301)	No/nitrogen, phosphorus, sediment (urban runoff)	The grant money will be used to increase awareness of storm water issues and develop best management practices to address problems and to build a corps of community volunteers provide stormwater BMP education and training to others living in the Barrio Kroeger Lane neighborhood, located east of the Santa Cruz River, and Barrio Centro, located in the Upper Tucson Arroyo watershed.	n/a	\$163,396.20
12-005	<i>E. coli</i> Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch Phase II†	Upper Gila Watershed Partnership	San Francisco River (1504000409)	Yes/ <i>E. coli</i>	The grant money will be used to install the third of four wells to provide water for livestock owned by the Kaler Ranch. The Kaler family has agreed to remove the cattle year round from the riparian area once they have sufficient water from the alternative drinking water sources. The levels of <i>E. coli</i> in the river will be reduced as the grazing habits of cattle disperse in the surrounding land area, which is managed by the State Land Department, Bureau of Land Management and private sources.	NEMO WBP for the Upper Gila Watershed, ADEQ TMDL in progress	\$100,246.00
12-006	The Upper Gila Watershed Steward Project, Phase II	Upper Gila Watershed Partnership	Gila River (15040002001)	Yes/Sediment	Phase 2 of the Upper Gila Watershed Project will offer four semesters of classes about monitoring and controlling sediment on the river, conducting field surveys, data searching, and developing data so that it can be used in future efforts directed toward receiving a targeted watershed grant to address sedimentation on the Gila River.	NEMO WBP for the Upper Gila Watershed, ADEQ TMDL in progress	\$44,200.00
12-007	Tonto Watershed Improvement Group Watershed Education and Training Grant†	Tonto Watershed Improvement Group	Tonto Creek, Christopher Creek (150601050204)	Yes/ <i>E. coli</i> , nutrients, low DO	Grant funds will be used to develop a community awareness and education program, focusing identifying nonpoint sources, basic monitoring training, and more in-depth identification of potential methods for dealing with the watershed's many old, undersized, and failing septic systems.	ADEQ TMDL (2004, 2005)	\$70,791.33

State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body (Watershed)	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support	Award Amount
12-008	NPS Reduction of Copper to Pinto Creek	Franciscan Friars of California	Pinto Creek (1506010307)	Yes/Copper	Grant funds will be used to engineer and implement a soil cap at the abandoned Gibson Mine site, as well as to revegetate the area and engage nearby high school science programs to include information about nonpoint source and local mine mitigation activities in their curriculum. The cap will significantly reduce runoff of copper laden sediments from the abandoned mine site into Pinto Creek.	ADEQ TMDL (2001)	\$595,370.25
EV11-008							
EV11-008	Arizona Water Festivals: Building on an Effective Education Model	University of Arizona	Statewide		Funding Project WET Water Festivals for fourth grade students to learn about watersheds and water quality, as well as expanding on this knowledge to teach sixth grade students to appreciate water quality by developing tangible attachments to Arizona's riparian areas. This will be done by engaging in water quality monitoring, wet-dry mapping, and exploration of riparian areas along the San Pedro River.	N/A	\$29,262

State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body (Watershed)	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support
EV11-0009						
EV11-0009	Arizona Nonpoint Source Education for Municipal Officials (NEMO) †	University of Arizona	Work under this contract is restricted to ADEQ's Cycle 11 and Cycle 12 Targeted Watersheds	Supporting the Targeted Watersheds by providing: NEMO Internet Mapping Services (IMS) Workshops; web site upkeep; Automatic Geospatial Watershed Assessment Tool (AGWA) training; database management; educational outreach activities; mapping, modeling, and publication, and modeling support; load reduction modeling for nitrogen, sediment, and/or phosphorus; support for the 2012 Clean Watershed Needs Survey; and updates and/or improvements to the NEMO BMP Toolkit.	N/A	\$334,183.00
EV11-0010						
EV11-0010	Master Watershed Stewards Program (MWS) †	University of Arizona	Work under this contract is restricted to ADEQ's Cycle 11 and Cycle 12 Targeted Watersheds	Provide support for the Targeted Watersheds by providing MWS courses focused on each respective watershed, in addition to a variety of watershed-specific short-courses on subject determined by the watershed stakeholders. The MWS program will also provide training and education to the watersheds, and will assist them in developing and determining the effectiveness of their own education and outreach materials.	N/A	\$210,588.00



State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body (Watershed)	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support
EV11-0011						
EV11-0011	Technical & Analytical Support for <i>E.coli</i> Source Identification in Targeted Impaired Waters†	University of Arizona	Work under this contract is restricted to ADEQ's Cycle 11 and Cycle 12 Targeted Watersheds	Providing technical support to the Targeted Watersheds including classroom and in-the-field training on sampling and data analysis methods, assisting in sampling plan development, source identification for <i>E.coli</i> bacteria samples using DNA genotyping, and effectiveness monitoring.	N/A	\$59,481
† Indicates projects addressing one of ADEQ's Targeted Watersheds					Total Awarded: \$2,858,275.78	

Appendix C: WQIG Projects Awarded During FY11

State Project # (EPA Grant #)	Project Title	Authorizing Agency	Water Body	Impaired/ Pollutant of Concern	Purpose	TMDL/WBP Support	Award Amount
<b>EV09-0035</b>							
11-T01 (98961308 M* 96973406 96998407 97959609)	Granite Creek Watershed Improvement Plan Grant (Extension) †	Prescott Creeks Preservation Association	Granite Creek/Watson Lake	Yes/Nutrients, low DO, <i>E. coli</i>	A time extension and additional funding were awarded to allow the group to collect and analyze additional data necessary to make implementation recommendations and finalize the planning document.	ADEQ TMDL (draft) Draft WIP (2011)	\$220,539.24 (Total grant amount: \$520,500.24)
11-T02 (96973406 M 96998407 98961308 97959609)	San Francisco/Blue Rivers Watershed Improvement Plan Grant (Extension) †	Upper Gila Watershed Partnership	San Francisco River/Blue River	Yes/ <i>E. coli</i>	A time extension and additional funding were awarded to allow the group to collect and analyze additional data necessary to make implementation recommendations and finalize the planning document.	ADEQ TMDL (draft)	\$102,457.58 (Total grant amount: \$290,894.18)
11-T03 (98961308 M 96973406 96998407 97959609)	Oak Creek Watershed Improvement Plan Grant (Extension) †	Oak Creek Canyon Watershed Improvement Group	Oak Creek	Yes/ <i>E. coli</i>	A time extension and additional funding were awarded to allow the group to collect and analyze additional data necessary to make implementation recommendations and finalize the planning document.	ADEQ TMDL (1999, 2010)	\$224,942.36 (Total grant amount: \$536,545.36)
<b>EV10-0051</b>							
12-002 (98961308 M 96973406 96998407)	Coyote Creek Watershed-scale Education and Training Grant †	Little Colorado RC&D	Coyote Creek/LCR Headwaters	Yes/Sediment	A time extension and additional funding were awarded to allow the group to move forward with BMP implementation. Originally awarded as an education grant with a planned Phase II for implementation, the grantee was able to achieve Phase I goals well ahead of schedule.	ADEQ TMDL (2002)	\$370,483.60 (Total grant amount: \$494,087.60)
12-008 (98961310 M 97959609)	NPS Reduction of Copper to Pinto Creek ††	Franciscan Friars of California	Pinto Creek	Yes/Copper	Grant funds will be used to engineer and implement a soil cap at the abandoned Gibson Mine site, as well as to revegetate the area and engage nearby high school science programs to include information about nonpoint source and local mine mitigation activities in their curriculum. The cap will significantly reduce runoff of copper laden sediments from the abandoned mine site into Pinto Creek.	ADEQ TMDL (2001)	\$701,470.00
* Indicates the EPA grant under which the Master file for the project is located in GRTS † Indicates projects addressing one of ADEQ's Targeted Watersheds †† Indicates projects located in a Measure W watershed						<b>Total Awarded: \$1,619,892.78</b>	

## Appendix E: WQIG Funding Awarded During FY12

EPA Grant Number	State Project Number	Project Title	Contractor Name	Watershed	Impairments	Plan/Model Support	
97959609	EV12-0005	DEMA Wallow Fire Mitigation Funding	Department of Emergency and Military Affairs, Arizona Division of Emergency Management	San Francisco, Blue, and Little Colorado River watershed areas directly impacted by the Wallow Fire.	Sediment <i>E. coli</i>	WIP concurrently developed for San Francisco/Blue watershed; AGWA modeling conducted for burn area to target subwatersheds at highest risk for sediment loss post-fire.	
Overview				Sub-Awards		Sub-Award Funding	Sub-Award Match
<p>The recent Wallow Fire impacted two watersheds that have been targeted by ADEQ as priority locations for addressing nonpoint source water quality issues (the Little Colorado River Headwaters, impaired due to sediment; and the San Francisco/Blue, impaired due to <i>E. coli</i>). The goal of this funding is to allow for early implementation of erosion control measures to protect water quality in these and other watersheds impacted by the burn. DEMA is working closely with federal, state, county, and other local stakeholders to coordinate fire mitigation projects in the Wallow and other burn areas throughout the state. This NPS funding was made available to subgrantees via an ADEM request for proposals to support projects with direct ties to protecting water quality by reducing nonpoint source pollution.</p>				AZ Community Tree Council		\$ 9,822.00	\$ 6,548.00
				Alpine Domestic Water Aquifer Protection Project		\$ 15,084.00	\$ 10,056.00
				Alpine Sanitary District		\$ 27,348.00	\$ 18,232.00
				EC Bar Erosion Control		\$ 3,000.00	\$ 2,000.00
				EC Bar Willow Planting		\$ 13,000.00	\$ 9,000.00
				Fite Farms Pond Project		\$ 36,120.00	\$ 24,080.00
				Montlure		\$ 47,919.60	\$ 31,947.00
				Sakellar		\$ 47,340.00	\$ 31,560.00
				Philip R. Thompson		\$ 6,585.82	\$ 4,390.54
				<i>Other (funds/match not yet awarded)*</i>		\$ 23,158.64	\$ 11,629.00
				<b>Total Sub-Awarded Funding</b>		<b>\$ 229,378.06</b>	<b>\$ 149,442.54</b>
Administrative Costs		\$ 20,621.94	\$ 13,781.35				
<b>Total Grant NPS Award</b>		<b>\$ 250,000.00</b>	<b>\$ 163,223.89</b>				

\*Funds that are not sub-awarded will be returned to ADEQ at the end of the project period. Match will not be required for returned funds.

## Appendix E: FY13 Water Quality Improvement Grant Awards and Press Releases

In October 2012, the Water Quality Improvement Grant (WQIG) program released a Request for Grant Applications (RFGA) announcing the availability of \$1.6 million in Clean Water Act Section 319(h) funding for nonpoint source pollution reduction projects within the state of Arizona. Projects were limited to two categories:

**1. Watershed Improvement Plan (WIP) Implementation**

Watershed Improvement Plans (WIPs) have been developed under previous grants with ADEQ. These improvement plans have investigated and identified the BMPs that have the highest success potential for reducing pollutant loading in their impaired watersheds.

**2. Watershed-scale NPS Management**

Watershed-scale Nonpoint Source (WNPS) Management projects must be able to demonstrate a high likelihood of reducing nonpoint source pollution in a watershed with an impairment or demonstrated nonpoint source water quality issue. These projects are appropriate for situations where the applicant is proposing to utilize a watershed-based approach to identify critical pollutant loading sites where BMP implementation is needed. To be considered for WNPS funding, the application must demonstrate that a nonpoint source water quality issue has been documented in the area of concern, and that the pollutant(s) and probable source(s) as well as applicable BMPs have been identified. Applications for WNPS projects must include criteria that will be used to determine where applicable BMPs will be implemented and how they will be designed for maximum effectiveness. Due to the complexity associated with accurately identifying all of the relevant pollutant sources, WNPS projects are likely to be most effective when restricted to a 10-or 12-digit Hydrologic Unit Code (HUC) area with relatively homogeneous land use.

Four projects were selected for award in WQIG Cycle 13:

ID #	Project Summary	County	Award Amount
13-01	Big Ditch Piping Project - This project will build upon a previous grant project to complete the installation of an additional 6,000' of piping to reduce sediment in the Little Colorado River, and will expand upon previous sediment control analysis and recommendations in the watershed. This project will directly address portions of the Big Ditch that have been documented as over-topping and contributing sediment directly to the LCR. Sediment load reduction estimates have not yet been calculated for this project, but additional sediment control projects throughout the watershed are necessary to fully impact the sediment impairment in the LCR.	Apache	\$387,800.00
13-02	Oak Creek - Installation of a restroom facility at Midgley Bridge, as well as the installation of 15 pet waste stations throughout Oak Creek Canyon trails and the development of outreach activities such as a Creek Ambassador program to implement outreach at high recreation areas. While restrooms and dog waste station BMPs have been predicted to be capable of reducing as much as 80% of the E. coli loads in this particular reach of Oak Creek, further data regarding the public's actual use level is needed and will be collected to measure the effectiveness of this project.	Coconino/ Yavapai	\$253,326.00

ID#	Project Summary	County	Award Amount
13-03	Clifton Restroom Facility - Installation of a restroom facility at a high recreation area north of the town of Clifton to be fully maintained by the Town of Clifton. Load reductions for this project have been estimated at $\sim 1.38 \times 10^{12}$ CFU/year. A TMDL for this project area has not been completed, but additional projects to address human, cattle, and wildlife impacts to water quality have been outlined in the WIP as necessary for achieving water quality standards.	Greenlee	\$128,906.00
13-04	Upper Granite Creek - Development of green infrastructure projects at the Whipple St. Basin and at the Prescott Community Center. The objective of this project is to demonstrate the utility and effectiveness of green infrastructure BMPs to municipal and residential stakeholders, encouraging an increase in their use throughout the watershed. A TMDL is currently in process in this project area.	Yavapai	\$455,895.00
			<b>\$1,225,927.00</b>

*Press releases describing each awarded project follow:*