



Socorro SWCD  
Annual Report – FY 2015

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Staff:

Nyleen Troxel Stowe, Director of Special Projects, Program Manager  
Will Kolbenslag, Range Technician, Noxious Weed Specialist

## WATER CONSERVATION:

The Socorro Soil & Water Conservation District's Cost Share Program remains the top priority of the fiscal year. It is designed to assist landowners in implementing water conservation measures on their farms, ranches, and urban residences. The following is a summary of the available programs and the combined benefits of the District's multifaceted programs:

This year \$36,130.05 was reimbursed to landowners for installing beneficial agricultural and residential conservation projects.

### Agricultural Projects:

Agriculture is perennially the most active segment of our cost share program. This year we assisted landowners with eight land leveling projects moving 28,824 cubic yards of dirt on 113 acres; installation of a solar pump conversion on one livestock well benefitting 640 acres; replacement and upgrade of three irrigation turnouts benefitting 20 acres; installation of a new livestock well benefitting 640 acres; 423 feet of concrete ditch lining benefitting 3.5 acres; and 14 acres of sub-soiling, the practice of excavating through the clay soil until sandy soil is reached and then mixing the two soil types.



Hickman Ranch diesel to solar conversion,  
Obsolete diesel pump shown to the left.

Sub-soiling project underway



Residential Projects:

We assisted 2 landowners with a rainwater harvesting system, reimbursing a total of \$1,109.25; we assisted 3 landowners with \$1,555.87 in cost share for drip irrigation systems; and 2 landowners with \$193.50 of assistance for water saving low flow toilets.



600 Gallon Rain Harvester



SWCD cooperater installing underground drip.

Conservation Technical Assistance with numerous other individuals resulted in many practices being applied on the agricultural land within our district.

The application of resource management systems in conjunction with the benefits of this versatile program has resulted in significant water and soil savings in the Socorro SWCD this fiscal year. Other benefits derived from the application of these conservation practices include improved water quality in the irrigated valley as well as the grazing lands in the district, improved wildlife habitat, improved watershed health and an overall improvement in the quality of life for the residents in our area. Our programs for drip irrigation, low flow water devices and rain harvesting barrels have expanded our cost share to reach more urban residents and have a greater overall impact on our community.

## RIO GRANDE RESTORATION FUNDING:

Work began on the Bruton Salt cedar removal project in January of this year. Double Arrow Bar was the contractor awarded the job, following the required site visit and a competitive RFP process. They began by using a large excavator with an articulating thumb to remove the trees, pulling the root crown and as much of the root system as possible with it. Following extraction, a large bulldozer was used to rake the trees into piles, which the landowner will burn when conditions permit. The bulldozer was then fitted with a root plow and dragged in perpendicular directions across the property. This process removes the bulk of the large roots, and any root crowns that were missed during the extraction, and this material is then raked into piles as well. It has been our experience that this particular process produces the best results, particularly to prepare the land for agricultural cultivation.



The Bruton property prior to work starting. The property generally contained large clumps of mature Salt cedar with pockets of open areas, usually containing inland saltgrass.



The excavator begins work, January 2015



The contractor used Socorro SWCD supplied GPS technology to begin by clearing the property boundaries.



Work completed, with all noxious tree species removed and piled.

In May of 2015, the Socorro SWCD hired Industrial Weed Control, Inc., based in Las Cruces, to apply herbicide to three of our restoration areas that have become badly infested with Russian Knapweed (*Acroptilon repens*).

Russian knapweed is a problem because it reproduces through seed and creeping roots, is noxious and perennial, chokes out native vegetation, and causes chewing disease in horses. Furthermore, there have been documented stands of Russian Knapweed that have survived more than 75 years.

Although the east side of the Rio Grande in Socorro County is badly overrun with Russian Knapweed, it has not yet firmly established itself on the west side, which is considerably more populated. The more control we are able to do, the more likely that we will be able to prevent its occurrence becoming commonplace, especially on the west side of the Rio Grande where most of the alfalfa fields are.

Boyd Prouty, owner of IWC, applied herbicide along with one of his employees. They treated approximately 60 acres of solid Russian Knapweed using Milestone Herbicide on 2 properties, and Perspective Herbicide on the third, due to the presence of desirable tree species on the first 2. They provided us with detailed spray reports including GPS data that automatically logs whenever they are spraying. The Perspective herbicide was donated to the project by the Socorro SWCD.



Industrial Weed Control, Inc. Equipment



Armijo Property Russian knapweed treated with Milestone.



Bourne Property Russian knapweed treated with Perspective.

SOIL & WATER CONSERVATION COMMISSION GRANT FUNDING:

Item	SWCC Grant	Socorro SWCD Match
Topcon Hiper V & Rover Base GPS System	20,070.53	
Topcon Tracking Oaf Bundle	1,612.10	
Topcon Tesla	2,859.99	
Topcon Magnet Field Basic and GPS	1,209.03	
Topcon Office Magnet Office Tools	248.35	154.67
Holman's Training – 2 Days		3,500.00
New Windows Laptop		1,600.00
	26,000.00	5,254.67





We have purchased all of the equipment in the chart above (shown in picture) and have received training on this new equipment from Holman's GPS trainer on November 18 & 19, 2014. Staff have been using this equipment for all surveys.

This equipment is used to generate highly accurate topographical surveys of agricultural land for:

- ✚ Laser Land Leveling
- ✚ Concrete Lined Ditches
- ✚ Underground Irrigation Pipelines
- ✚ Extensive ranch pipeline systems

Since the equipment does not require a line of sight for surveying, and has a range up to 2 miles from the base station, we are now able to survey entire farms/properties easily, generating valuable information for the landowners.

We are also now able to produce topographical cut/fill maps for areas that have existing tree cover. This is invaluable in our efforts to remove noxious tree species such as Salt cedar. We work with a handful of landowners who purchase land that has been historically in agriculture, but has been lost to noxious species invasion. In the past, generating any type of survey data required them to clear the land first, at great expense, without knowing what the ultimate cost of the farmland reclamation would be. We are now able to generate preliminary cut/fill maps before a single tree has been removed, greatly increasing our value to the landowners we work with.



The Socorro SWCD has been logging many hours on our new equipment for surveying. Staff have surveyed and designed water and soil conservation projects for eighteen agricultural producers for the Socorro SWCD Cost Share Program using this equipment. The Socorro SWCD approved cost share applications and increased the budget for the program at their February meeting because we had so many applications and have been assisting so many landowners. Staff also assisted numerous other agricultural landowners by providing surveys for land leveling, concrete ditch lining, and turnout replacement sizing.

The greatest advantage for surveying with this Topcon Rover system that operates using the orbiting satellites is that no line of sight is required. This helps when surveying tracts of land that have a house built in the middle of the tract, long narrow tracts of irrigated farmland, and when the Middle Rio Grande Conservancy ditch that delivers the water to the tract of land is far away. It also helps with our ongoing projects to assist landowners in re-claiming farmland that has been lost to Salt cedar, as we can now conduct an initial survey of the land before the trees are removed, giving our landowners a great tool to use for planning.

We are now also able to survey larger farms and ranches in one survey. With the regular Topcon Total Station Survey, we would have to survey each field separately and could only do a small portion of a livestock pipeline for example.

The following pictures are from a 22.8 acre field in Socorro that the Socorro SWCD staff surveyed and designed for land leveling and concrete ditch lining. The field is divided into two sections with the western section being irrigated from north to south out of a concrete ditch and the eastern portion being irrigated from west to east out of the concrete ditch. The field was leveled, moving 8,412.57 cubic yards of dirt and creating two ditch pads. Then the two ditches were poured, the first being 415 feet and the second being 925 feet.





View looking north, west part of field, ditch being poured that runs north to south.



Tractors pulling boat and concrete trucks delivering concrete into boat as ditch is poured.



Last portion of ditch being poured.



Termination of ditch on south side. View is looking north.

#### POLE PLANTING:

The Socorro SWCD changed its pole planting program this year, so that we could provide and install plantings only on restoration properties that have had noxious woody species removed. We feel that this change will allow us to have a more substantial impact on lands in need of restoration.

The Bosque del Apache National Wildlife Refuge has been an instrumental partner in our pole planting activities from the very beginning. They allow us to harvest as many Rio Grande Cottonwood poles as we need for our projects, and, when available, Gooding's Black Willow poles, the tree species preferred by the endangered Southwestern willow flycatcher.

This year, in cooperation with the Partners for Fish & Wildlife Program and the Save Our Bosque Task Force, we harvested 100 Rio Grande cottonwood poles. Along with volunteers, these were planted on Zach Saavedra's property. This planting occurred after the Salt cedar had been removed. The Saavedra property is very close to the Rio Grande on the mostly undeveloped east side of the Rio Grande, making it a great candidate for restoration. We also planted several hundred potted trees and shrubs that were purchased by the Save Our Bosque Task Force.

Following planting activities, the Socorro SWCD used its Bobcat excavator to remove resprouts from the Salt cedar removal project. Follow up efforts by our district staff and the landowner should result in another beautiful native restoration project.

Using the Bobcat to auger holes.



## NOXIOUS WEED CONTROL:

The Socorro SWCD continues to offer control of all designated noxious weed and tree species to the public. We employ a licensed herbicide applicator for all chemical treatments, and we also own a Bobcat E35 Mini-Excavator for non-chemical removal of these species when possible.

In order to keep abreast of the latest weed management techniques and information, range technician Will Kolbensschlag attended/administered the 22<sup>nd</sup> annual New Mexico Vegetation Management Association (NMVMA) conference as a board member, along with Director of Special Projects Nyleen Troxel Stowe. The NMVMA exists to promote awareness of and education related to noxious weeds. Noxious weeds are those weeds that are legally designated as such because of their invasive nature. They tend to establish quickly, out compete native vegetation, degrade farmland, and destroy native ecosystems. The NMVMA assembles the best minds on all facets of this topic and brings them together with pesticide applicators from around the southwest to share knowledge and ideas.

Nyleen has served over 10 years as a NMVMA board member, and Will is starting his 7th year on the board. Our conference was well attended this year, with over 150 registered participants including BLM, BIA, BOR, NRCS, USFS, NMSF, NMDGF, NMDOT, USFWS, and many public, private and commercial applicators. All participants earned the Continuing Education Units (CEUs) necessary to maintain their licenses for another year at this NMDA approved event.

Since 2003, the Socorro SWCD has partnered with private landowner Doris Rhodes, along with nearly every other land management agency in the area, to begin eradicating noxious tree and weed species and re-establishing native vegetation on her 700+ acre historic ranch, much of which is in the active Rio Grande floodplain. The BLM owns land that traverses the center of this property, connecting the upland with the Rio Grande. The Socorro Field Office is working to obtain the necessary Archeological clearance to begin work on this tract, which is now an island of Salt cedar in a sea of restoration activities. Once the clearances are in place, the SWCD will begin work on this area with their Bobcat excavator.



Rhodes property south, clearing and piling in progress.  
Bosquecito Road is on the right.



BLM property line flagged for contractors. The flagged line is visible as the northern boundary of the cleared area in the previous picture.

Over the winter, using the Bobcat excavator, range technician Will Kolbenschlager extracted all of the remaining Salt cedar at the Socorro Nature Area. This project has been underway for 3 years, and is now complete other than monitoring the area for re-sprouts.



A small area following excavation at the Socorro Nature Area.



Salt cedar and root crown removed.

The spring months brought unusually frequent rains to our district this quarter, giving the noxious weeds the kick start they needed to become a problem. Using our new NorthStar spray rig, mounted to our Bobcat utility vehicle, we sprayed all the weeds growing at the Ft. Craig parking lot and walking trails, the El Camino Real trailheads, the parking area and roads at The Box Canyon Recreation Area, and all parking lots and walking trails at the Socorro Nature Area, keeping these areas clean and tidy for public use.



Silverleaf nightshade at the El Camino Real trailhead.



Herbicide spraying at Ft. Craig.



Kochia dying in the SNA parking lot.



Socorro SWCD's new sprayer.



## EDUCATION:

The Socorro SWCD organized and held the Thirtieth Anniversary Bosque Conservation Day on October 17, 2014 for one hundred fifty fifth grade students from Zimmerly Elementary, Midway Elementary, San Antonio Elementary and Cottonwood Valley Charter School.

We had volunteers at each of the schools to meet the bus drivers with maps and to ensure that they knew how to get out to the Socorro Nature Area in Lemitar. We had five school buses transport the students. All arrived prior to start of the rotations, so all students got to see each of the eight presenters.

Agency	Topics	Name(s)
1. Rio Birds	Birds of Prey	Matt Mitchell
2. NM State Parks	Wildlife of the Bosque	Tanja George & Jake McCoy
3. NM State Forestry/	Tree Growth	Nick Smokovich
4. Friends of Bosque del Apache	Migration Station	Andrea Brophy & Gina Dello Russo
5. Healthy Kids Socorro	Fix A Flat!	Isaac Burleigh
6. Bosque School	BEMP	Katie Elder
7. Socorro County Fire Department	Firewise	Fred Hollis
8. BLM	Wildfire/Fire Safety	Mike Comiskey
9. NMDG&F	Poach Coach	Andrew Teaschner

At Station 1, the students learned about raptors. Matt Mitchell brought two raptors that the students got to observe at close range. Matt discussed training raptors, what they eat, rehabilitation of injured raptors and their importance in the ecosystem. Station 2, Wildlife of the Bosque: Tanja George and Jake McCoy discussed the various forms of wildlife that call the Bosque home, where they live and how they interact in the Bosque and the importance of the Bosque. Station 3, Tree Growth: Nick Smokovich discussed various tree growth stages and showed these stages with the surrounding trees at the Socorro Nature Area. Station 4, Migration Station: Andrea Brophy and Gina Dello Russo discussed migration patterns of birds and then had the kids be the birds and migrate to food, water, winter habitat. Station 5, Healthy Kids Socorro: Isaac Burleigh brought bicycles, tires, tubes and tools to teach the kids how to fix a flat tire on a bicycle. Station 6, BEMP: Katie Elder discussed the Bosque Ecosystem Monitoring Program (BEMP) and what data is collected at the sites in this program and how students can become involved in it. Station 7, Firewise: Fred Hollis and staff discussed fire, how to escape a burning building, and fire safety. Station 8, Wildfire/Fire Safety: Mike Comiskey discussed wildfires with the students. He talked to the students about how wildfires start, how they fight and control them and the best ways to ensure not starting a wildfire when out in nature. Station 9, Poach Coach: Andrew Teaschner, NM Department of Game and Fish Law Enforcement Officer discussed what poaching is, why it is illegal, how to get a hunting/fishing license and safety.

On April 15, 2015, the Socorro SWCD had a station at Kids, Kows and More for the third and fourth grade students. Staff talked to the kids about watersheds and then had the kids play the watershed game, On the Way to the Bay.

On April 24, 2015 for Earth Day and Soil Stewardship Week, the Socorro SWCD staff took the Rolling Rivers water trailer to Midway Elementary School in Lemitar. They discussed watersheds with the students, then had the students identify the various parts and issues in watersheds on the Rolling Rivers trailer.

#### PUBLIC OUTREACH:

The Socorro SWCD staff had a booth at the Socorro County Fair over Labor Day Weekend, August 29-30, 2014. The cost share program for agricultural practices and for urban water conservations projects is promoted at this event.



Socorro SWCD booth at the Socorro County Fair, August 29-30, 2014.

On October 24, 2013, the Socorro SWCD staff set up the Rolling Rivers trailer for Kids, Kows, and More in partnership with the Socorro County Extension Office. The Socorro SWCD set up the trailer to mimic the Rio Grande, the low flow channel, farmland, urban areas, mountains, wildlife and agriculture. Third and fourth grade students in Socorro County were transported to the Fairgrounds by bus to attend this event. The Socorro SWCD paid to bus the students within the District.

FISCAL YEAR 2015 BUDGET:

Item	Amount
Income:	
State funding	14,741
Mil levy	151,838
Grant Income	100,902
Loan repayment	1,800
Total:	269,281
Expenditures:	
Staff	121,328
Cost share program	34,131
Audits	12,305
Office supplies, postage, meetings, dues, telephone, travel, trainings	39,306
Auto	14,205
Grant expenditures	76,444
Conservation activities	1,110
Loan repayment to ISC	1,604
Total:	300,433