Hugh Hammond Bennett (right), first Chief of the Soil Conservation Service.

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NRCS Responds to Drought in New Mexico

Farm Bill EQIP Funds Devoted to Drought Related Practices

NRCS has championed conservation in New Mexico by devoting more than 80 percent of its Farm Bill Environmental Quality Incentive Program (EQIP) funds since 1996 to drought related practices. Since that time, NRCS has received $30,883,345 for its EQIP program, and entered into 2,225 contracts with New Mexico farmers and ranchers for conservation improvements.

Some 7,625,990 acres of New Mexico farm and ranch land has benefited from these conservation practices, or 13 percent of all private land in the state.

Of critical importance, in a state where water and irrigation are so essential, over 300,000 of irrigation improvements have been made through EQIP since 1996. Viewed another way, NRCS has invested $12,389,799 to improve irrigation systems, accounting for 40 percent of all EQIP funds. This investment has resulted in installation of 364 sprinkler systems, 600 miles of pipeline and concrete ditches, and land leveling on 571 projects. All of this investment has helped New Mexicans save precious water while raising the agriculture products upon which this nation depends.

Seventeen percent of the Farm Bill funds in New Mexico have gone to livestock water development, amounting to an investment of $5,098,856. With these funds, ranchers have installed 450 wells, 1,179 miles of pipeline, and 1,314 watering tanks.

Another $6,632,204 has been expended to alleviate brush that sucks water from the state's rangelands. Ranchers have treated 363,996 acres for brush, and accounted for 21 percent of the state's total EQIP funds to do this.

Polls have shown that water is one of New Mexico's top issues. It continues to garner much attention throughout the state. NRCS's response to the drought in New Mexico has been multifaceted and extensive. From irrigated crop lands to range lands, the NRCS response has been felt.

Drought in Las Vegas, New Mexico - Spring 2003

2002 Farm Bill Celebrates First Anniversary
Much More Is To Come

Rosendo Trevino III
State Conservationist

May 13, 2003 marked the first anniversary of the 2002 Farm Bill. The 2002 Farm Bill has already invested $6,267,457 in 151 projects in New Mexico, and much more is to come.

As NRCS Chief Bruce I. Knight said, "This is ... a great time to thank the landowners who have and will participate, to thank NRCS personnel, conservation districts, agricultural organizations, wildlife organizations, environmental organizations and all others who are all working to optimize the opportunities before us."

Chief Knight said another thing that gets to the core of the magnitude of this legislation.

He said, "Most agricultural producers can't quote the 600-page 2002 Farm Bill by line and verse. But they know one thing: It's helping them become better stewards. By this time next year, tens of thousands of additional farmers and ranchers will be receiving the assistance they need to conserve, maintain and improve our soil, air, water, and plant resources. That's because the Farm Bill provides an unprecedented investment in conservation - ranging from the Wetlands Reserve Program, to the Environmental Quality Improvement Program, to the Wildlife Habitat Incentives Program, all of which build upon our base Conservation Technical Assistance programs."

The 2002 Farm Bill is a very positive step in the stewardship of our treasured New Mexican land, water, wildlife, and other natural resources. It is always encouraging to me as I travel this state to meet and know New Mexicans who can envision the positive, even during tough times. In my experience it is those who see the positive and strive for it that really help us progress in the field of natural resources.

While NRCS is making great strides with the Farm Bill, our partners are setting precedents that other states are watching. Conservation Districts are realizing major accomplishments with their salt cedar projects. In addition, the New Mexico State Legislature appropriated significant funding for technical assistance through the Soil and Water Conservation Commission.

I, also, want to take this opportunity to recognize some personal achievements of our partners. Debbie Hughes, executive director of the New Mexico Association of Conservation Districts, was recently honored by Congresswoman Heather Wilson as an outstanding leader at Women's History Month Recognition in Albuquerque. And Levi Newkirk, New Mexico's High School Youth Forum winner, placed second at the International High School Forum sponsored by the Society for Range Management. The High School Youth Forum judges student papers that address any aspect of range management.

It is with deep appreciation that I live and work in a state with such doers. Thank you, New Mexico, for a good year and the opportunity to be of service to you.

Natural Resources Reporter

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Teams work to Improve Forest Health

by Duston L. Hunt Jr.

Recently the smoke from five controlled burns could be seen near Silver City. These burns were conducted to reduce the threat of dangerous wild fire, improve wildlife habitat, and improve watershed conditions. Though the reason for these burns was the same, the process required to conduct them was different.

Usually the Forest Service addresses forest health issues on forest land with their own dollars and their own personnel. Two of the recent burns, however, were collaborative efforts made possible by a Memorandum of Understanding between Grant Soil & Water Conservation District and the Gila National Forest.

Grant SWCD recognizes that the hazards created by 80 years of fire control are just as real on private and state land as they are on the National Forest. Roughly 50 percent of the land in Grant County is private or state owned, and 50 percent is federal. These different lands are randomly intermingled. It doesn't make much sense to address the wildlife and watershed problems on one side of the fence if you can't fix them on the other side. Thanks to the MOU and a grant from the Environmental Protection Agency the forest health of the Mangas Creek watershed is being addressed in a comprehensive manner.

First efforts to implement what is known as the Mangas Water Quality Project were represented by the Schoolhouse and Cain prescribed burns. The 5,000-acre Schoolhouse burn was conducted by Forest Service fire managers on Forest Service land with the Grant SWCD constructing numerous erosion control structures within the burn area. These structures will begin the process of healing gullies. The 500-acre Cain burn was conducted entirely on private land and truly represents a cooperative effort. The Natural Resources Conservation Service did the initial studies and wrote the burn plan, while the work of conducting the burn was accomplished by the Cliff-Gila Volunteer Fire Department and New Mexico State Forestry. The effort was directed by Ricky Sedillo and Mike Head, both experienced USDA Forest Service fire managers.

These two burns, represent the first steps of the Mangas Water Quality Project, and as a result, the waters of Mangas Creek and the Gila River will eventually run clearer. The habitat of wildlife such as mule deer will be greatly enhanced. It is also important to consider that collaborative efforts like the Mangas Water Quality Project provide local property owners a certain amount ownership in the success or failure of forest restoration efforts.

A long-term goal of the Mangas Water Quality Project is to heal the deep erosion channel that runs the length of Mangas Valley. Not much can be done with the channel until the overgrown forest condition in the uplands is addressed. Grant SWCD sees this as a long-term project, which must include the needs of Mangas Valley residents without threatening those who depend on this land for their livelihood. These residents know they will be the ones to gain the most from a successful watershed restoration project or have the most to lose if no management is undertaken.

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Natural Resources Reporter

Holistic Irrigation Technology Provides Answers

Drought Response Heralded As Hard Work But Doable

These efficient irrigation systems reduce evaporation of water.

At a time when New Mexico farmers, cities, and other interests face extreme water shortages and the press anticipates water wars, calmer heads in agriculture are quietly advancing solutions that will require hard work but are doable.

Mike Sporcic, NRCS agronomist, is one of these conservation advocates with ideas.

"Some of the solutions require a huge commitment to management, but the effort is worth it," Sporcic said.

The program that Sporcic sees as a solution for drought beleaguered New Mexicans is the Holistic Irrigation Technology (HIT) program first prepared by Rudy Garcia, Linda Scheffe, John Allen, and R. David Fischer, all of the New Mexico Natural Resources Conservation Service.

The Holistic Irrigation Technology has some 22 points that can guide irrigation districts and producers to the benefits of irrigation water management.

First, the program notes the installation of high flow structures can help improve irrigation efficiency from less than 25% to over 60% due to greater uniformity of application with less water. High flow structures take less time to put water to the end of the check, thus avoiding excessive soaking of water into the ground. Because high flow structures take less time to irrigate there is also a savings in labor. The time to irrigate a field can be cut in half.

Laser leveling increases irrigation application uniformity and overall irrigation efficiency. It is possible to apply 2 - 3 inches of water when the producer has access to a large head of water and fields are laser leveled and irrigated with high flow turnouts.

Water metering devices enable producers to evaluate and implement alternative practices which will increase his/her irrigation efficiency. This amounts to a significant saving in irrigation water. For example, water metered on fields that are laser leveled and which also have high flow turnouts and lined ditches, has resulted in farmers being charged as much as 40% less per irrigation.

"Putting all the hardware and management into place can realize this kind of savings," Sporcic said. "The Elephant Butte Irrigation District does a good job and is showing the benefits of all their work. We have others that are learning and working on this."

"There is still tons of work out there to do. I just can't emphasize that enough."

In addition to high flow turnouts, laser leveling, and metering - measuring soil moisture can help identify appropriate times to irrigate thus preventing plant stress conditions. The result is higher crop yields and better quality products that translate into a better profit margin for the producer. Tensiometers, probes, or the feel method can be used.

Tensiometer are filled with water

and measure the suction of the soil on that water. Coupled with a gauge, the tensiometer can show when the moisture in the soil has reached such a level that it is time to water again. Soil texture, porosity, and crop type can determine the total amount of water that is needed. Lettuce, for example, uses a soil zone of one foot while alfalfa uses four feet of soil.

The Natural Resources Conservation Service (NRCS) has developed a spread sheet that can determine the amount of water needed for any field. Farmers interested in this kind of assistance should contact their local NRCS office.

"This kind of assessment can be tailored to the conditions of any given farm," Sporcic said. "It should go in every conservation plan in New Mexico. There just is no need to do without this valuable tool."

Using a probe for a soil moisture measurement entails a device that has electrodes and measures conductivity across two rods. The more moisture in the soil, the greater conductivity.

Finally, the simplest method of checking soil moisture is by feel. This can be a learned skill.

All of these soil moisture testing systems inherently rely on an "on-demand" irrigation system where the farmer can call up the ditch rider and get irrigation water when needed, rather than on a rotational system.

Installation of pipelines, where appropriate, can be used to both conserve and convey water very efficiently. Use of pipelines depends upon the objectives of the farmer and the irrigation district. If the main objective is to get water to the farm, pipelines are effective. If an objective is to recharge the aquifer in the process, the alternative transport systems are used.

Another important component of a well managed operation is properly maintaining drains to keep the root zone dewatered and provides for a health growing environment. Roots do not grow in water saturated soil. They need air to grow. Farmers need five to six feet of soil to grow crops.

Record keeping has proven to be an invaluable decision making tool for farmers in their efforts to irrigate more efficiently and effectively. NRCS has created the 449 Irrigation Management Job Sheet for this task. This is available at your local NRCS office.

Reduced tillage in orchards shows an improvement of the soil surface structure and tilth (organic matter content) which translates into water conservation.

The development of nutrient budgets has resulted in significant reductions in inputs of fertilizers, soil amendments, and other chemicals. Nutrient management is a part of Holistic Irrigation Technology that integrates all aspects of farm operations. NRCS staff can develop a nutrient budget for cropland and uses New Mexico State University fertilizer recommendations which can be used alone or in conjunction with dealer recommendations.

There is a need to check preplant nitrates in the spring because nitrates move with water and a farmer does not want to get nitrates into shallow wells. The goal is to keep nitrate reserves to a minimum for this reason, and the cropland may not need more. This is an inexpensive test, $30 per field plus time, and could cut fertilizer costs by 20 percent.

Finally, there are a variety of drip irrigation systems on the market today that allow for the application of very small amounts of water which is particularly important during early growth stages. Such systems enable a grower to maintain optimum moisture conditions for best production, apply precise amounts of nutrients, and increase yields. They are 95 percent efficient.

"They require a huge commitment of resources and management," Sporcic said, "but the effort is worth it. Yields are up and diseases down."

"If you want to know what you can do in drought, the Holistic Irrigation Technology Program is it. It calls for some tough decisions, but it could drop our water use in this state by 30 percent."

For further information contact Mike Sporcic at 761-4424.

Plant Materials Center Important to Park Service

Mutton Grass and San Juan Pestemon Mark Spring

Mutton grass seed, falling to the blades of the harvester, recently marked springtime at the Los Lunas Plant Materials Center. Dan Goodson, agronomist, was harvesting the seed for National Parks throughout the southwest.

The National Park Service relies on the Los Lunas Plant Materials Center for the production of plant species in which they are particularly interested. The seed the National Park Service uses must meet extremely rigorous standards to prevent contamination.

" The Park Service requires seeds that are descendant from ecosystems in their parks," said Greg Fenchel, Plant Materials Center manager. "By being so exacting, these land managers can assure that the plants grown from these seeds can, in the long run, tolerate the climate extremes of the sites where they are sown."

Mutton grass is important to the National Park Service and others because it is very palatable to elk and other grazing animals. It is the dominate grass component under Ponderosa pine. Like the Ponderosa pine it requires significant water, 16 - 20 inches per annum. In New Mexico it is typically found in 7000 - 9000 foot altitude areas. There is some debate about its use after fires, and there are arguments why mutton grass should be used and why small grains are preferred. Regardless of the debate, mutton grass is important in our National Parks and forestlands throughout the southwest.

Like the harvesting of mutton grass, the blooming of the San Juan pestemon recently signaled the return of warm weather at the Plant Materials Center. The pestemon is a wildflower, great for xerioscaping in yards, along highways, and anywhere where drought resistant flowers are needed.

"In the Albuquerque area, pestemon will thrive without any irrigation, and at the Plant Material Center in Los Lunas is grown without irrigation," said Fenchel. "It typically requires only 7 - 8 inches of water a year."

It is a busy time for the Plant Material Center as it enters its production season. If you wish additional information about mutton grass, San Juan pestemon, or the Plant Material Center contact Greg Fenchel at (505)865-4684.

Top: Dan Goodson harvesting mutton grass. Bottom: San Juan pestemon colors field in purple at the Los Lunas Plant Materials Center

Brooks Responds to Challenges of Urban Office

Complex Mosaic Thrives in Albuquerque Area

Drought management in New Mexico is a long term responsibility, not just an emergency situation, according to Corinne Brooks, Albuquerque Field Office District Conservationist. Brook's perspective results from managing a field office for the state's most urbanized conservation district.

"In general the healing or improving of land does not happen overnight, Brooks said. "Most of our traditional agriculture producers know this. The land is their livelihood and they know how to care for the land, and have the foresight to do the proper planning."

The urbanized Albuquerque district has many non-traditional agriculture producers however, including hobby farmers, first time irrigators, and small acreage landowners. Many of these individuals may be on the learning curve, and want instant results or are reacting to the dry conditions rather than anticipating them.

This complex mosaic of producers and land management skill levels make Brooks' job both challenging and rewarding as she helps individuals with varied backgrounds bring conservation to the land.

"I am not saying that other district conservationists don't also have challenging jobs. It is just that the variety of situations in an area bordering the largest urban center in the state keeps you on your toes," said Brooks.

Brooks also shared a perspective about the drought.

"This period of drier conditions may not really be a drought. Climate experts point to recent wet years as being above normal and what we have now may be closer to the norm."

Weather forecasters agree that this dry period for New Mexico may be extended. Planners and politicians alike are calling for the need for planning for extensive dry periods in New Mexico, and conservation and development of available water sources.

Brooks says she does have producers who are adjusting to the dry conditions.

"We do have producers who are adjusting crop rotations. By this I mean they may turn alfalfa into a crop that uses less water on the fifth year of the crop rather than let the alfalfa go another two or three years."

Land leveling and irrigation are among other measures Albuquerque producers are taking. Irrigation improvements concentrate on improvements such as pipelines instead of earthen ditches, ditch lining, and new turnouts.

"These are by far the majority of practices we are dealing with," Brooks said.

"Finally a concern of ours is the number of animals on the land whether it be irrigated pasture or rangeland."

Corinne Brooks, Albuquerque District Conservationist

In drought livestock producers cannot produce the forage for the animals they can during wet years.

"The same principles apply for the small producer on five acres with only three or four cows. That producer may need to get rid of one cow during dry spells, while the large rancher may need to get rid of a hundred. They still have to cut back on the number of animals they are carrying on the land."

For more information about an urbanized field office, contact Corinne Brooks at (505)761-5444.

NRCS Natural Resources Conservation Service

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