NRCS

Alabama NRCS

Tech News

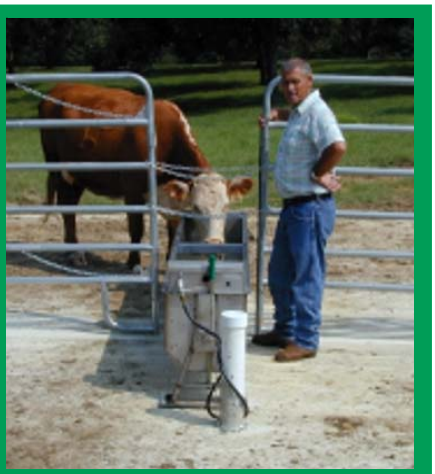
January 2004

Clean, Fresh Water for the Cows

by Renea Dyer, Soil Conservationist, USDA-NRCS, Andalusia, AL

Leray Berry, a Covington County cattle farmer, came to the local NRCS office seeking assistance to establish a rotational grazing system for his purebred Hereford cows. He signed up for the Environmental Quality Incentives Program (EQIP), and was approved. Mr. Berry has installed more than 3,000 feet of new fence to better use his forages, and to fence his cows out of the nearby streams.

NRCS Soil Conservation Technician Leon Wages visited the Berry farm to discuss the installation of watering troughs and pads for the heavy use area. Mr. Berry told Leon, "I want clean, fresh water for my cows. I do not like to see them drinking dirty water with trash floating in it." He had seen a stainless steel dump tank at a nearby farm and had found some information on it from the manufacturer. The specification of the tank met the requirements for a watering facility through the EQIP program, but the cost of the tank did not fit within the price specifications. Mr. Berry was willing to pay the difference to get these special tanks. The tanks can be dumped simply by lifting a handle and pushing the tank over. Mr. Berry can dump and clean out the tanks daily when he checks on his cows and they will always have fresh water.



Leray Berry is proud of the recently installed watering facility. Gates split the water trough so it can be used in two separate pastures.

The tank comes with an automatic control valve to help eliminate flooding and water loss, and may also be purchased with a thermostat controlled heater to keep the water from freezing.

Many cattle producers agree that rotational grazing has many benefits. An adequate watering facility is an important component of the grazing management system. Additional water sources in pastures serve to better distribute grazing, resulting in better forage utilization. Mr. Berry says, "I'm proud to get the cattle out of the stream. The water troughs provide clean water right in the pastures."

In this Issue:

From the State Conservationist

Welcome to the first *Alabama NRCS Tech News*, a quarterly newsletter to share new technologies, landowner successes, and innovative ideas with landowners/users and our partners. This issue features articles by several of our field office personnel recognizing the good work of Alabama farmers. We hope you enjoy the articles and learn new techniques of conservation management from this information. Our goal is that others landowners may in turn implement similar conservation practices on their land.

We are using the Internet as our primary source of distribution, but encourage field offices, organizations, and other agencies to feel free to print copies and distribute as they see fit. Our primary audience includes landowners and agriculture and environmental agencies and organizations. We are coordinating with these agencies and organizations to distribute the notice of publication to their members. With just a click of the mouse, the newsletter can be read on the screen or printed to be read and passed on to others. I commend our field employees for their good work in getting conservation practices implemented and my staff for utilizing this new format for sharing information.

Bob Jones

Innovative Waste Management Practice

by Joyce Nicholas, Soil Conservation Technician, Mobile, AL, and Randall East, Resource Engineer, Grove Hill, AL

Ching Dairy, located in Mobile County, sits adjacent to Juniper Creek which is on the 303d stream list for pathogens, nonpoint source grazing cattle.

The dairy is locally owned and operated by three brothers who are third generation dairy farmers. The Natural Resources Conservation Service (NRCS), along with other stakeholders within the watershed and throughout the state, has provided technical advice and financial assistance for innovative best management practices (BMPs). The BMPs are addressed in a Comprehensive Nutrient Management Plan developed by the local NRCS office. Planned and installed practices will address a waste storage lagoon, a unique solid separator and proper fencing for safety, heavy use areas, critical planting areas, cross fencing, and wastewater irrigation application. The goal is to provide a conservation system that will allow the brothers to continue their work in a growing neighborhood while conserving valuable natural resources.

The waste from the milking parlor pad will flow into a pit, which includes a 400-gallon "sand trap" adjacent to a 3,000 gallon collection tank. Two pumps will transport the waste through a four-inch pipe to a Geotube, solid separator.

Geotubes at this particular site are two 50 feet long by 45 feet circumference Geotextile bags. The bags will be housed on a concrete pad adjacent to the waste lagoon. The pad will slope to ensure proper drainage of the leachate and is large enough to hold two bags. The bags will dewater and leachate will drain into the lagoon. The lagoon measures 220 feet by 200 feet by 10 feet and is composed of a two foot clay compacted liner and a one foot protective soil cover. Odor will be reduced, pest will be controlled, and the solids contained within the bags will be dryed. The dry matter will be analyzed and applied on site according to soil test recommendations, which will reduce the amount and cost of purchased fertilizers. It is believed the solids will reduce soluble Phosphorous. Tests will be run to confirm the reduction.

Every conservation planner knows that each land unit is unique and can or will present the conservation planner with specific site limitations, which make each plan specific to that location. The Ching Dairy has provided several challenging factors: property lines and location of the milking barn, rolling hills and sandy soils, limited resources, high voltage power lines, and encroaching neighbors.

Innovative practices are attempts to provide solutions through unique applications that could prove to be cost effective, user friendly, and beneficial to farmers who are faced with waste management situations. The site in Mobile County will be one of the first "on-farm" applications, if not the first, in Alabama where the animal waste is being put into bags before the leachate empties into a lagoon or holding pond.

A hanging bag test of the Geotube waste management process.

Preserving Alabama Family Farm Land

by Julie A. Best, Public Affairs Specialist, USDA-NRCS, Auburn, AL

Tommy Swearingen is excited about the possibility of permanently preserving the family farm for agricultural purposes. Beebe Farm is located in Baldwin County, Alabama. Tommy's grandfather, William Craig Beebe, established the farm in 1937. The farm eventually grew to 1,125 acres. His parents' generation inherited the land in the 1960's, but all the heirs left the state to pursue careers. Several parties owned the land, and since no one was in control, the farm declined.

Tommy earned a Ph.D. in Forestry and, unlike many of his siblings, he kept returning to Alabama and the family farm. He had a real interest in preserving the land and wanted to see it remain a working farm. Since Alabama doesn't have a statewide mechanism for the preservation of farmland, Dr. Swearingen faced many difficulties in attempting to preserve the farm. Baldwin County is the fastest growing county in the state, and that growth had an impact on the Beebe Farm. "How do you hang on to the farm when the soil and its real estate development potential is worth more than the trees grown on it?" was the predicament that Tommy faced. He found himself in the classic "land poor" family dilemma, that is, all the family assets were tied up in the farm, and income from it was substantially less than what the land would have generated if it were sold.

Swearingen's desire to preserve the farm led him to study similar situations in other regions of the country. After years of research, he has a plan. Dr. Swearingen intends to create a conservation community.

"A Little Touch of Country" is an alternative form of agriculture at Beebe Farm that provides educational farm tours, pony rides, and activities for children of all ages.

Beebe Farm raises and boards horses. Their brood horses are Registered Racking and Tennessee Walking Horses. Year round grazing is available and there are over 23 miles of equestrian trails for pleasure riding.

Ownership of the farm was consolidated in a family Limited Liability Company (LLC), and Dr. Swearingen eventually became the majority owner of the company. The LLC created a management entity where none had previously existed. Then the family became creative in the utilization of the land. Using the farm and local outdoor resources, they are involved in various alternative agriculture enterprises. They offer horse boarding, farm tours and educational programs, hay and other farm products, canoe and kayak rentals in the Gulf and the Mobile-Tensaw River Delta, and cabin rentals. A unique farm conservation community consisting of 17 lots is a part of the plan. These lots will be established on land that is not suitable for agriculture.

A portion of the Beebe Farm will be enrolled in the Farm and Ranch Land Protection Program (FRPP), a program of the USDA-Natural Resources Conservation Service (NRCS). According to Denise Coleman, National Program Director, "The emphasis of the FRPP is on working farm land. We work through non-profit organizations to purchase permanent conservation easements for the purpose of protecting topsoil by limiting non-agricultural use." FRPP provides matching funds to help purchase

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--Tommy Swearingen

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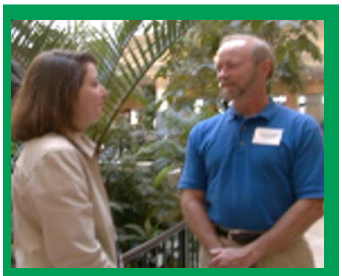


Denise Coleman and Tommy Swearingen talk about the options of the Farm and Ranch Land Protection Program.

development rights to keep productive farm and ranch land in agricultural uses. Working through existing programs, USDA partners with State, tribal, or local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market easement value.

According to Dr. Swearingen, "It's a win/win situation. The plan enables us to do some regional planning without massive outlay of capital. The conservation plan preserves the forest and allows the land to be used for agricultural purposes. The ecologists feel good and financially the shareholders are doing well. The 17 lots will be some of the most desirable in Baldwin County." Swearingen is all smiles—the majority of the farm will be preserved for agricultural purposes. That was his goal and he developed a plan to make it happen.

MO-15 Regional Soil Water Study

by Sandy Page, Soil Scientist, USDA-NRCS, Jackson, AL

The Southeast Coastal Plain Major Land Resource Area (MLRA) Soil Survey Region (MO-15) headquartered in Auburn, Alabama, recently received a grant from the Soil Survey Division of the Natural Resources Conservation Service (NRCS) to buy electronic monitoring devices to obtain data for a regional soil water study. The objective of this study is to collect soil water data for representative soils and landform positions throughout MO-15 in a comprehensive and uniform manner. Collected data will be used to assist in populating the National Soil Information System (NASIS) database and to refine interpretations affected by soil water data.

The study will monitor soil water levels in selected soils for three years. A total of 85 pedons representing 30 soil series will be observed in Alabama, Florida, Georgia, Mississippi, Tennessee, and the Caribbean Area. Most of the selected soil series are replicated three times and sited in different counties and states in an effort to capture ranges in rainfall and soil properties. Piezometer tubes, consisting of 2-inch PVC pipe that accommodate the soil moisture-monitoring device that consists of a pressure transducer, several feet of cable, the data logger, and Windows compatible software, are installed at the appropriate depths. The automated data loggers are set to take readings four times daily. Sites will be checked and data downloaded at 6-month intervals, in January and June of each year.

(l-r) Soil Conservation Technician and tribal liaison David Elliott, Soil Scientist Sandy Page, and Data Quality Specialist George Martin discuss installation procedures on an Escambia fine sandy loam. The site is located on land owned and operated by the Poarch Creek Indian Tribe in Escambia County, AL.

A second piezometer tube is installed on a gently sloping phase of Poarch fine sandy loam in Washington County, AL. Ralph Thornton, Project Leader, Wayne County, MS; George Martin, Data Quality Specialist from MO-15; and Ken Murphy, Soil Scientist, Jackson, MS, check the data logger to insure that it is functioning properly.

Soil moisture information is needed to:

- Improve interpretative capabilities for soil properties
- Enhance predictive potential for modeling of natural systems
- Insure consistent taxonomic classification of soils with respect to elements of soil climate

In addition, the data collected can be extrapolated to soils that have similar internal drainage characteristics in the same climatic regimes and on similar landform positions.

This study is a cooperative effort involving NRCS, landowners, and other National Cooperative Soil Survey partners.

Twelve Digit (Smaller) Hydrologic Units Coming to Alabama and the Nation

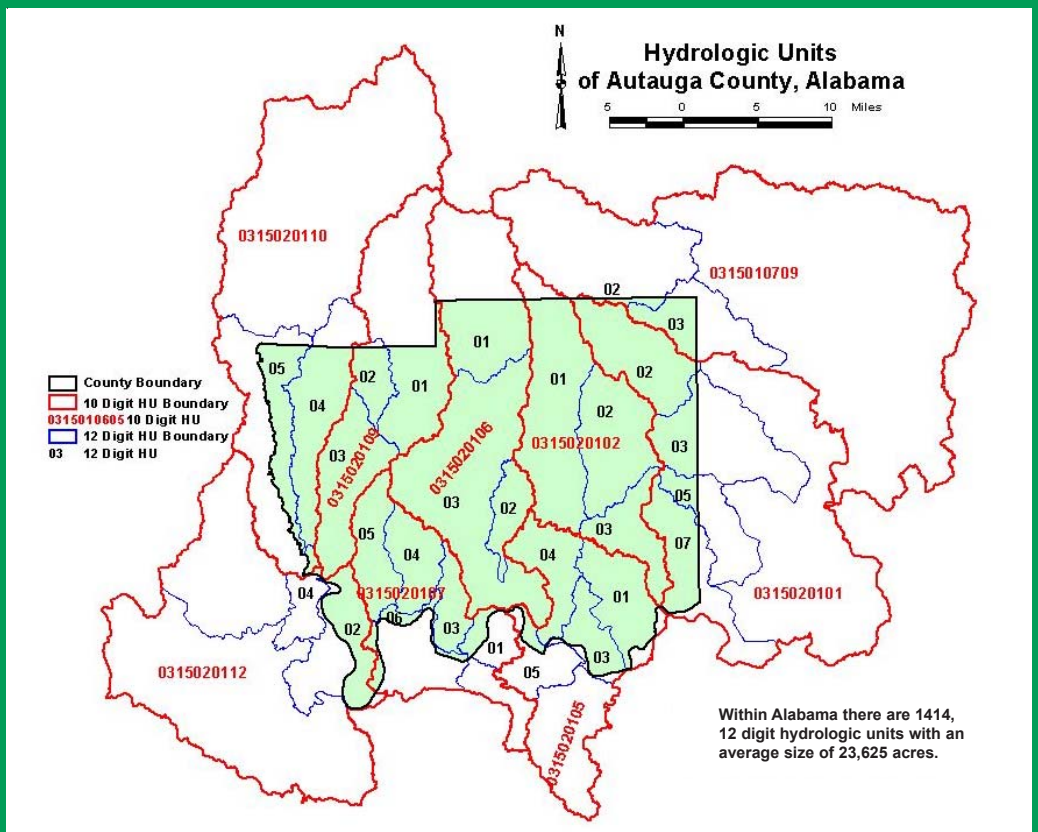
by Ken Aycock, Hydraulic Engineer, and Rick Zellmer, Geographic Information Specialist, NRCS, Auburn, AL

The term "hydrologic unit" refers to a drainage area delineated on a map or GIS layer to nest in a multilevel, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface waters. The delineation of hydrologic units into "watersheds" and "subwatersheds" is an opportunity to develop a consistent and common geospatial database for interagency sharing, and for improving federal, state, and local uses of hydrologic units. Hydrologic unit boundaries define the areal extent of surface water drainage to a point. The goal of this initiative is to provide a hydrologically correct, seamless and consistent national Geographic Information System (GIS) database at a scale of 1:24,000, that has been extensively reviewed and matches the U.S. Geological Survey (USGS) topographical 7.5 minute quads.

Alabama will soon have data available to the 12th digit hydrologic unit code (HUC). The new level is called subwatershed (6th level, 12-digit). The standards for these delineations have been developed by NRCS, USGS, US Forest Service, Bureau of Land Management, and the National Oceanic and Atmospheric Administration. The 12-digit HUCs developed by these standards will become a data layer in the "National Geospatial Data Set" which provides national data layers usable for planning.

After certification, Alabama's 12-digit HUCs will be available over the internet and on compact disk (CD).

Status of the HUCs and state contacts can be found for all states at: www.ftw.nrcs.usda.gov/huc_data.html



Delineation of the 12 digit hydrologic units for the state is almost complete. In this map for Autauga County, the 10 digit HUCs are in red and the 12 digit HUCs are in blue.