



PROFILES IN soil health

Terry Chandler
Danielsville, GA
200 acres
Crops: Pastures
Planting and Cover: Cereal rye, annual ryegrass,
hairy vetch, chicory, and red clover.



Good Pasture Management Leads to Good Soil Health

In 1987, Terry and Deborah Chandler purchased a farm outside of Danielsville in Madison County, GA, that was owned by a family for over 100 years but was abandoned about 1983. This old cotton farm was highly eroded, the top soil was absent and the farm was in need of a lot of care. Today the Chandlers do livestock production - poultry and cattle. They also operated a swine finishing operation for 16 years, but in 2003 decided to stick strictly to poultry and cattle; beef cattle. The farm consists of 200 acres total - 165 pasture, 30 wooded, and five acres of facility management area.

The Chandlers needed all the help they could get, so they recruited the help of the Natural Resources Conservation Service (NRCS). Using the Environmental Quality Incentive Program (EQIP), the Chandlers began the process of improving the existing resources to improve forage health, productivity and the vigor of their farm.



Multi-species forage planting. A total of five forage species were planted in two of Chandler's five-acre-paddocks - cereal rye, annual ryegrass, hairy vetch, chicory, and red clover.

Help Arrives

Since recruiting the NRCS's help they have learned a lot. "We learned about intensive rotational grazing in the early 1990s as we began to move the farm away from row crop production into pasture production. Once we implemented intensive rotational grazing, we immediately began to see improvements in forage production, soil health, and animal handling. We actually began re-building soil from the practices we began



USDA is an equal opportunity provider and employer.

using. Philip Brown (NRCS grazing land specialist) has helped us with trying some of the multi-species establishment as we do our inter-seeding in the fall. It's been pretty impressive so far," said Terry Chandler.

Building Soil Health

Due to the lack of top soil they are trying to utilize what's there and trying to rebuild what should be there. They don't over graze the pastures because they want a good part of the forage to go back into the soil to help rebuild it. "We feel like that's actually what we have to do to be productive and stay productive and have a productive pasture operation here when we leave, whenever we retire or whenever we turn it over to somebody else," said Chandler.

Brown said that building soil health doesn't come quickly. "It's a long term effort. Soil health isn't something that we see change in a day, but it's a 3-5 year project of changing your management style."

Chandler was very impressed with not only the amount of forage yield but the better soil moisture retention also. "We have measured surprising forage yields in the mixed-species plantings we tested. The number of grazing days has been very impressive. I expect there are going to be a lot of other benefits with the residue we are leaving. We already see better soil moisture retention and a moderating of soil surface temperatures. I expect there will be a lot of positives in microbial activity as well."

"We have a more diverse forage mix than just annual rye grass or cereal grain. We've added in five species in this mix. We have cereal rye, rye grass, hairy vetch, chicory, and red clover in this mix. But the hairy vetch has done the best. What we wanted was a strong legume content for high quality grazing, bio-mass production and also nitrogen fixation back into the system," said Brown, who works throughout Georgia helping producers and NRCS staff with grazing land related resource concerns and developing grazing systems for managing the intensity and frequency of grazing.

Through the use of Conservation Technical Assistance the NRCS was able to assist the Chandlers in the start of im-

"I think that the technical part is where the real value is.... -- that technical support has been invaluable."

- Terry Chandler, landowner



Some of Chandler's cattle. Chandler moves his cattle from one paddock to a new paddock each day to give the grasses time to regrow.

proving the soil base of the farm. By adding the multi-species mix, the land is getting more organic carbon back into the soil, which will help feed a diverse microbial population and create better cycling of nutrients throughout the system. In the long run this will lead to more profitability and less purchased fertility for the producer.

Brown's catch phrase for this is "Soil health is about having a functioning soil."

The Chandlers realize that in order to make money down the road they must first establish a healthy soil base now. "From a financial standpoint, one of the things we know we have to do to be profitable is to reduce the amount of supplemental feed we provide to the cattle. The more time that they can spend doing their own harvesting of the forage without us having to bring it to them will improve our profitability."

They calve about 110 brood cows and have a replacement heifer development program as well.

Benefits of Pasture Management

Chandler feels that there are many benefits with the intensive rotational grazing system. "The practice is simply putting a lot of cattle in a small space for a short period of time then moving them and allowing the pasture to rest and recover." They have divided their farm into five-acre-paddocks. They will move all their cows daily, depending on the forage available, from one five-acre-paddock to another paddock close by. When the cows all have calves on them, that's over 200 animal units (One animal unit =1000 lbs) in a five-acre-paddock.

profiles in soil health

Terry Chandler, Georgia

"You would think that would sound relatively crowded but with forage available it's not. They expect to be moved daily depending on the forage available, it may take 2 days -- sometimes in the summer, it may be 3 days. We will move them into stockpiled forage that's been resting 30, 40 or 45 days. We'll move them all in and they will non-selectively graze. In other words, they'll graze everything in a rotational scheme like that. They won't have the chance to select what they want but they will graze everything," said Chandler.

He went on to say, "It has changed our perspective on weed control. A lot of the things we used to feel like we had to control chemically, we find that the cattle like. They're very palatable and the nutritional quality on those is very good as well. So, it's changed our concept on weed control."

"And, it's done a lot from a soil health standpoint. Dunging distribution which sounds like a silly concept but we get good even dunging distribution over the whole paddock when we put that many cattle in a small space for a short time. Grazing animals remove very little phosphorus and potassium, but if grazing is inconsistent cattle will re-locate those minerals to heavy trafficked zones. With heavy stocking rates and good dunging distribution we are keeping P (phosphorus) and K (potassium) in place, so those levels are staying consistent."

Chandler believes that the grazing days and overall forage utilization has improved considerably over open grazing. Although they don't exclusively try to manage for forage utilization, Chandler would like to think that they are getting somewhere around 50 percent forage utilization with the rest of it going back in to the soil.

The Value of Technical Conservation

The technical part is where Chandler placed most of the emphasis. "I think that the technical part is where the real value is. There's just so much that can be gained. I don't have the knowledge that they (NRCS) have but I can gain so much through our local technical people -- they have been so tremendous. The fencing scheme that we have is a result of what Carol and Glenn (Carol Boss, district conservationist and Glenn Head, soil conservationist (retired) in Commerce, GA) did with us with the GPS system, helping us design the paddocks so that they're very close to the same area in size and designing our water trough location -- that technical support has been invaluable.

The species selection that Philip has done and the soil health aspect that he has really introduced me to -- those are just the things that we lean heavily on, technical support. The financial part of it -- no question -- it made it

"We're getting a lot better soil moisture retention and I think there is going to be a lot of positive to go with the microbial activity as well."

- Terry Chandler, landowner

easier to do what we're doing, but I don't think it made us do anything different. It helped us do what we were going to do just a little sooner and maybe with a little more financial ease, but the technical support of it is the value for me."

The Wildlife Aspect

An indirect benefit of soil health and rotational grazing is the benefit to wildlife. "One of the huge values to the farm from a wildlife aspect, with the rotational grazing that we're doing, 90 percent of the farm is vacant at any given time. It has been a wildlife bonanza. Deer love it, turkey that we never saw the first 15 years we've been here on the farm -- we've actually counted a flock of as many as 50. But, it's because they're not having to compete with the cattle for an area," said Chandler.

He went on to say, "The areas that we feel are more wildlife sensitive, we still utilize. We may move the cattle down in there. They may be there for a day or 2 days and they're back out and the wildlife are back there again. Wildlife enhancement has been an added unexpected benefit. Couple that with soil improvement, forage improvement, grazing quality and consistency, animal gains, reduction in winter feeding, and a few others . . . there is a strong case for considering intensive rotational grazing and multi-species plantings!"

For more on Chandler's Soil Health story visit the Georgia NRCS YouTube channel at:

<http://youtu.be/0L-HwLwtXxw>

Want to unlock the secrets in YOUR soil?

Go to: www.nrcs.usda.gov


United States Department of Agriculture
Natural Resources Conservation Service