Spring 2012

Conservation Conversation

Official Newsletter of the Barber County Conservation District

Volume 25, Issue 1

Outstanding Conservationists - Calvin & Carla Boyd

Calvin & Carla Boyd with their son Christopher

This year's outstanding conservationists were the recipients of the Bankers Award in 1991. At that time they stated their management philosophy in this way: "Conservation goes back to stewardship whether you are talking about the land or whatever you do". By the success of their operation, it is apparent that they still live by that philosophy. The people we are talking about are Calvin and Carla Boyd. The Boyd's live on the farm southwest of Isabel and farm with their son Christopher. The farm consists of both cropland and rangeland and has been in the family for several generations.

Calvin's father, Ivan, and his grandfather both were good conservationists and protected the land as good as they could with the equipment of the time. The Boyd's have improved the cropland with rotations their predecessors would never have dreamed of. One of the rotation crops Calvin uses is cotton. Cotton used to be planted only in the south, but has moved north with improved varieties for our climate.

Another change Calvin has made is to no-till. During his father's and grandfather's time, equipment and chemicals were not available to allow this type of enterprise. Calvin has done a good job of maintaining and improving conservation practices such as terraces and waterways. Most of the Boyd's fields are hilly and making sure terraces and waterways are in place has proven beneficial in preventing the loss of valuable top-soil. They work every year to keep the waterways in good working order. The waterways need to be fertilized and mowed to maintain a good stand of grass that will allow flood water to pass over the grass without causing erosion.

Sunflowers are another rotational crop Calvin uses with no-till to plant into wheat stubble. This gives him another crop for the year and protects the soil from evaporation of moisture. The crop rotation includes wheat, milo, soybeans, corn, sunflowers, and cotton.

Cover crops are being used to keep the ground covered and to produce nitrogen for the next crop. Calvin uses strip cropping on fields that are very sandy to assure there will not be any wind erosion even when the crop is short from lack of moisture. He has several center pivot irrigation systems to allow him to have good crops even when the weather does not cooperate.

Calvin and Carla also run a small feedlot to utilize some of the crops they raise and to diversify the operation.

Wildlife are benefitted too when good conservation is practiced. The no-till allows for food and shelter for many kinds of wildlife like geese, ducks, pheasants, quail, and many ground nesting song birds, reptiles, and rodents.

In 1993, Calvin won the Goodyear Conservation Award for his good stewardship. The Goodyear Conservation Award is a previous Banker's Awards recipient who shows exemplary continuation of good stewardship.

Calvin, Carla and Chris worked hard to renovate an old windbreak that was planted back in the WPA days. They cleared out 6 rows of old trees and replaced them with 4 rows of cedars or pines. They established a drip irrigation system to water them and placed weed barrier fabric around the new trees to control weeds that would rob the trees of moisture and sunlight. This effort rewarded them with the Windbreak Award in 2001. The windbreak continues to grow bigger every year and is doing a good job of protecting the farmstead.

As you can tell, the Boyd's have worked hard over the years to practice good stewardship of the land and the environment. Congratulations Calvin and Carla.

Bankers Award Winner - Brook Ranch

Congratulations to the Brook Ranch, recipients of the Banker's Award this year in recognition of their efforts in grasslands conservation. The Brook Ranch property, located about 11 miles west of Medicine Lodge on Highway 160, was originally purchased by John Brook, around 1921. John was a farmer and stockman in Illinois, and started out by utilizing the Kansas grass to producer calves on, then finish fattening them up on his farm, and put them on a rail car to Chicago. This went on for some time and then eventually the Ranch was leased out. John died in 1946, and the Ranch has been passed down from generation to generation, and now resides in the care of 3 cousins – Susan Brook, and sisters Anne Burket and Margaret Boyce.

When they originally took the Ranch over, their goals boiled down to being responsible custodians of the acreage, and when the timing was right, to be able to pass in along to the next generation and preserve the heritage and roots that were established over 90 years ago. Those fundamental goals have been added to over the years and the focus also includes harvesting more and more sunlight with the plants, capturing and utilizing more of what precious-little rainfall does fall on the Ranch, while still keeping things financially sustainable. Susan also mentioned that a personal goal of hers is to be able to check fence on horseback without the need of a chainsaw!

In order to work towards accomplishing these goals, and in addition to their own research, they also sought advice from outside sources. When they visited with Harold Kline, NRCS District Conservationist at the time, he drew up a plan that helped address their goals for improving both the condition of the pasture as well as developing additional water sources, and encouraged them to utilize some of the cost-share assistance available through an EQIP contract, which they did. The work that the Brook Ranch has accomplished with assistance from their EQIP contract over the last 6 years includes: brush management on over 600 acres of trees (which you can see numerous examples of in the pictures), the construction of a pond (which allowed water to be pumped from and distributed throughout the property), the completion of a couple of prescribed burns, and the implementation of a rotational grazing system. With the commitment to improving the Ranch, all of these conservation items would have been done eventually, but with a little help from the programs available, the process was allowed to be sped up to a few short years. The tree removal, which focused mainly on controlling the vast amount of eastern red cedars on the property, opened up large areas in which the sunlight (and water) could be captured by the desirable grasses, and recovered around 160 acres that were ungrazeable previously. They have also utilized aid from the Kansas Department of Wildlife, Parks and Transportation, through their State Wildlife Grant Private Landowner Program, in which they also helped with clearing a large portion of the trees. As with any good brush management plan, burning has been utilized, and will continue to be a tool moving forward to not only maintain the brush work that has been accomplished so far, but also to help improve the health and vigor of the desirable grasses and forbs. Another burn is planned just as soon as the soil moisture and weather conditions will allow. The pond was constructed in late 2007/early 2008, and is located approximately in the middle of the property. The water captured by the pond is then pumped 205 feet uphill and through nearly 3-miles of pipeline in order to provide a clean and reliable source of water to the 5 large tanks located around the Ranch. This is all powered from a solar pump, which has worked perfectly, despite the high demands on the system. With the watering system now in place, their operator, Allan Maze, was able to divide the place up with electric fencing and begin a rotational grazing system. Previously, the lack of water precluded any sort of rest/rotation grazing system, but now Allan is able to graze the Ranch with an increased stock density, allowing for more even utilization of the grasses as well as providing more rest and recovery time. The system also maintains flexibility, which is important to Allan so that he can change the size or layout of a paddock as he sees a need for it. As with many places in Barber County, the Brook Ranch demonstrates numerous different range-sites that have their own characteristics and levels of production. Allan is diligent in monitoring these, which help him to decide when it is time to move on to the next cell, and monitor the recovery of previously-grazed paddocks. While it is still early in this method of management, there are noticeable improvements in the condition of the grass already, and it is apparent that the overall health of the Ranch is headed in a positive direction.

Moving forward, the plans are to continue to improve the condition of the Ranch by increasing the management-level of the grazing system, to install wildlife-escape ladders in each of the new watering tanks, and to work on addressing the erosion issues on the Ranch, which are linked to older problem with cattle trailing and lease roads, and possibly to completely fence-off the pond. By continuing the build-up of plant productivity and rotation of cattle, those cattle-trails should become stabilized and eventually heal-over. They are also looking to install some soil-erosion structures in order to help address issues on the lease roads, and have demonstrated their commitment to improving their Ranch by hiring a consultant to assist on these issues as well. Allan has been a very important partner in seeing these improvements through, looking at the big-picture in regards to future benefits that these practices will help his operation as well, and stated that the three owners have been very supportive. It is for their collective efforts in what has been accomplished and the improvements that are on-going that the Brook Ranch is a well-deserved recipient of the Banker's Conservation Award and example of

Bankers Award Winner - Robert Schrock

Bob was raised in a farming family, his grandfather and father both farmed. Growing up running tractors and equipment were a part of being part of farming family. It seemed like a natural fit even though he didn't really plan to return to the farm after graduating. He was just an equipment operator. He didn't feel a real attachment to the farming.

As time passed he started noticing that the fields were different in soil type, slope, etc that the crops performed differently when treated the same way. As he got more involved with the operation Bob would recommend treating the fields in different ways. He indicated that at first his father didn't always understand why. Bob was curious as to why some of his neighbors were no-tilling; did it really make a difference? He took a shovel and dug into a no till field of theirs and then went to his conventional till field and dug in to compare what he saw. He saw a big difference. He wasn't getting the same moisture profile the no-till field had. He also realized that his fields were blowing after being worked while the no-till fields didn't. This convinced him to look into no-till. Could it work for him?

As Bob started to notice these differences he realized he needed to know more. His goal was to raise a good wheat crop while managing the inputs to help the farm become more profitable. By attending meetings and workshops, at Oklahoma State and listening to wheat expert, Phil Needham, he was able to pick up many ideas on how to improve yields.

Bob has been no-tilling for about 8 years now. He has been implementing several new and different improvements in their farming operation. One of the many items is terrace building, rebuilding and constructing waterways. They had the equipment and at times the man power to do this work themselves. He will tell you that waterways are a necessary evil. Hard to farm around with big equipment but needed in some fields, even when no tilling. He told me that in the past they would have taken on a project like this one themselves but he could see this was a horse of a different color. Very unusual topography made layout more difficult. This is why he called the Barber County NRCS office for assistance. He could see the need for a system designed for the entire field not just treating one area at a time.

After visiting the site with Bob it was apparent there were some concerns and yes it was an unusual field to lay out terraces and waterways. Water was exiting the field in 4 different spots. Water was entering the field from the north and east from neighboring crop ground. Many little high spots made terrace layout a real challenge. We could see why he was concerned about just a band aid approach. With the help of several NRCS staff and much head scratching we came up with a good answer for his concerns. Bobs crew was able to build the waterway and terraces that were a part of an EQIP contract with NRCS. While the equipment was there working, additional terraces were built and rebuilt.

The field for which the award was won represents just a small amount of the acres farmed by the Schrock family; several thousand acres would be more accurate. By implementing grid sampling, no-till planting, crop rotations and conservation practices like terraces and waterways, he learned several things. Grid sampling showed them where nutrients were needed so they could apply what was needed in those areas of the field instead of the entire field. Using a holistic approach for pest management prevents spraying just because your neighbor does and allows you to target the area of the field that needs it. No-till, improves the moisture profile of the soil and reduces the blowing. Conservation practices save soil.

Bob would tell you that 20 years ago he didn't think about the importance conservation or protecting the environment. Today he is kind of an environmentalist. He likes seeing clear water leave his fields instead of the muddy water like it was before. Technology allows for some of this to happen and he embraces that technology. The real story is in the individual who sees the need to protect the soil and environment, and is willing to implement the appropriate practices to achieve this goal. As Bob has found out, better yields and more profitable farming can be a result. He is excited about the future for farming.

When the Barber county Conservation District was putting on a no till tour, Bob was willing to share some of what he has learned with other producers during a field visit. This allowed many producers to see a little of what he does and ask questions about his results.

The NRCS vision is "Productive working lands in harmony with a healthy environment"; Bob Schrock's vision is very similar.

We salute Bob for his work in conservation and his willingness to share what he has learned with others.

Soil's Role in Effective Rainfall

by Jarred Kneisel

Photo of a functioning terrace and waterway system in Barber County. This was taken at the end of the 4.5" rain event in early February. While most of that rain came at a low intensity, a large amount of run-off was still generated.

So much of the business of agriculture in this part of the world is driven by precipitation. This last summer brought that point painfully into focus, and then, thankfully, some relief was realized late this fall/early winter. When we look back and summarize the year, we see that Barber County (as a whole) received 13.8 inches of precipitation from the period of January 1 thru December 31. That's a low number, make no mistake about it, but it may even be worse than that when you stop and think about how much of that rainfall was actually "effective." I hope you make it through this article in its entirety – a person can't jump straight into this subject without also laying some foundation in soil physics, so hang in there and you'll hopefully have some thoughts stimulated in the process!

In my view, effective rainfall is water that infiltrates into the soil profile and percolates down into the plant-root zone, and that is the definition that I'll be using for this discussion. Now, certainly some of you may have a different definition of "effective rainfall" (especially those of you with ponds – you may be more interested in water that runs off, not necessarily infiltration). A number of factors play into how much of any rainfall event is effective. Much of what determines what is effective rain is the rate and intensity of the rainfall. This isn't earth-shattering news – an inch of rain that falls over the course of 24 hours is going to stand a much better chance of getting absorbed than if that same inch of rain fell in 10 minutes. This ties in directly to the very composition of the soils where the rain falls. The 3 different soil particles (sand, silt, and clay), have different-sized pore openings, and therefore, handle the absorption of precipitation at different rates. Sandy-soils, having the largest pore openings, will absorb rainfall much more rapidly than a tight clay soil (as much as 4 inches per hour as opposed to 0.6 inches per hour). So, on February 3rd, when we received that 4.5" rain event that fell nicely over a 24-hour period, probably both soil types were able to fill up to field capacity (at least in the upper portion of the soil). However, at times during that event when the rainfall was more intense, the heavier soils, with lower infiltration rates, were unable to keep up. There is a trade-off to the high infiltration rate of sandy soils, though, and that is that they can't store very much water in the soil's profile. In other words, even though a sandier soil may take in more of the rainfall initially, its low tension means that the soil can't hang on to that water very tightly, and it will percolate down through the soil profile and out of the plants' reach. A clay soil, which can hold on to water much more tightly, has the ability to store twice as much water as a sandy soil, although it is held so tightly that sometimes the plants have trouble retrieving it. In general, this means that our medium-textured (loamy) soils are the happy medium between rate of infiltration, water holding capacity, and the water that is available to plants.

I say all of this to establish the background for what I believe is an aspect that may not be fully understood – that is the water holding capacity of a given soil. The ability of a soil to hold water is driven largely by the texture of the soil, and how much organic matter is present. In order to figure how much water your particular soils have available to plants under optimum conditions, you'll need to have an idea of the type of soil and how deep that soil is for roots to grow in. Take for example, a silt-loam may hold 2.5 inches of water per foot of soil depth, whereas a sandy-loam soil may not even be able to store 1 inch of water per foot of soil. If in both cases, you have 5 feet of these soils for the plants to grow in, then the silt-loam could potentially have 12.5 inches of water available, whereas the sandy-loam may not even be able to hold 5 inches. Note that this would be the case if there were no root-restrictive layer. Now let's say that a couple of years ago you worked the field or had harvest when it was a little too muddy, or you've been doing conventional tillage for years; we are now dealing with a compacted zone (plow-pan) that is 20" deep, as an example. So now with this restrictive layer, that same profile of soil is only holding 3.8" in the silt-loam soil, while that sandy-loam now only has 1.5".

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In a wheat or sorghum field, that means that even starting with a full soil-profile of moisture, you are less than two rain-free weeks away from stressing your crops in the silty-soil, and only *6 days* away from crop stress on a sandy soil.

Whether you are a farmer or a rancher, the management decisions that you make can and do influence how much water is "effective." My point is that while we can't control when the rains come, we can use management practices in order to extend the effectiveness of the moisture in our soil profile. By parking the tillage equipment, you are averting the formation of a plow-pan, and in doing so, allowing the plant roots to grow further down into the soil profile and gaining access to more soil moisture. The same can be said for eliminating cattle trails and loafing areas, both of which will create compaction zones, and ultimately change or eliminate the plant community. By increasing the amount of ground cover, you are essentially reducing the intensity of a rain-storm – both by reducing the impact of the raindrops, and by slowing the water down, which will give your soil more opportunity to absorb and store the water Again, this goes for both farmers and ranchers. Ranchers: by not overgrazing a pasture, not only are you leaving more top-growth to slow down and capture rainfall, but your plants will have a much healthier root system; one that is able to grow down and get the deeper water and minerals (more on this in a future article). Farmers: by leaving crop residues on the surface, or using a rotation with high-residue crops, you'll also receive the same water-conserving benefits, as well as protecting your soil from eroding, and potentially building organic matter in the long-run under the right system. Obviously, more top growth or cover on the soil's surface means that there is less bare ground. Think about a windy mid-July day here, 3 days after a nice 1.5" rain. On your wheat fields that have already been worked, what is keeping that moisture in the soil when the sun is beating down on your bare soil and the surface temperature is 125 degrees with a drying wind to boot? On your pasture that has been overgrazed in the past and has bare ground, what would it be worth to minimize the 0.4" per day lost through evaporation? Having more cover will help to minimize these harsh conditions, and allow you to hang on to that valuable soil moisture for longer, and put it to work for you. (By the way, cedar trees don't count as desirable cover on rangeland – some data shows that as much as 40% of precipitation is caught by a cedar tree and never even reaches the ground – but that's a separate conversation.)

Even if we go into a year with an abnormally wet winter or wet spring, the amount of moisture in your soil will ultimately be fixed, based upon the factors that I mentioned – the water holding capacity of the soil, and how deep your soil is. You can't store water for any length of time in excess of field capacity – anything over this point is drained on down through the soil profile and not available to plants. So, even if we received our average 24-26 inches of precipitation last year, but 13 inches of it came in February and March, we still would have experienced drought last year due to: poor timing of the rains, high evaporation due to the extreme heat, and the very fact that our soils can't store that much water, meaning most of it would have been lost as "free water" down through the soil's profile.

We've discussed that intense showers aren't very effective in wetting a soil, as most of the water is lost via run-off; and so just relying on a given storm's total precipitation is a very misleading number. On the other side of the spectrum, how much good are we receiving from a 0.25" rain or less? These small rain events usually aren't very intense, so that solves the problem of losing water thru run-off, but that small of an event does very little to wet a soil profile. Assuming we're starting with a dry, sandy-loam soil, that quarter-inch rain would only wet the soil about a half-inch deep, just enough to get picked up by your boots, but not much more, and would quickly be gone. Again, evapotranspiration losses can easily exceed 0.3" per day, meaning that the 0.25" rain that you got will buy you about 24 hours. In order to wet that particular soil profile for a 3' depth, you'd need a 6" rain (where none of it was lost to run-off). On a heavier soil, you're talking more about a 7.5" rain, with no run-off. Now, I wouldn't recommend holding your breath for the next nice-and-easy 7.5" rain to occur; but rather, use your management decisions to not only preserve what moisture you do have, and increase the effectiveness of the next rain.

In summary, I'd like to be able to pick-and-choose when and how the rains come, but since that's out of the equation, I hope that you take steps to prepare your farm or ranch to utilize whatever rainfall we get. Reducing/eliminating compaction enables more root growth, healthier plants, and opportunity to harvest deeper water (no-till or controlling livestock traffic); having plenty of vegetative cover on the soil's surface to lessen raindrop impact and increase infiltration time (cover crops or prescribed grazing); and if necessary, have erosion structures in place, which would again slow down run-off and give more opportunity for infiltration. Having these items addressed will make those large rain events more effective, extend the benefits from the small rains, and will lead to many other benefits that go hand-in-hand with these practices. There's more information than what could fit onto one article, so please feel free to call or stop by if you want to discuss any of these thoughts further or cover any areas this article missed.

Wildflower Tour

Blue Spiderwort on the 2010 Wildflower Tour

Every year on Mother's Day weekend we meet at the Medicine Lodge High School to begin a fun filled day exploring nature's wonderful wildflowers. While enjoying a continental breakfast of cinnamon rolls, fresh fruit, juice, and coffee we will view a slide show of the glorious flora of Barber County. After breakfast, we're off to the first identification stop where our expert guides will educate tour goers on the splendor of Barber County's wildflowers. After a delicious lunch and a chance to relax a little, we head back out on the range for another gaze at natures wonders. This year's tour is scheduled for May 12. The price of the tour is $15 which includes a continental breakfast, lunch, an afternoon snack, and transportation to at least two sites. **Paid reservations are due by May 4, 2012.** For more information check out our website at www.barbercountyconservation district.com. Be sure to check out our Wildflower Tour T-Shirts! We have five different designs available for purchase. Also check out our various books for sale on the wildflowers of Kansas.

John Farney Memorial Scholarship

The John Farney Memorial Scholarship is a $1000 scholarship sponsored by the Barber County Conservation District. The scholarship is awarded annually to a student who is entering at least his/her second year of college. Applicants must be pursuing a college degree in a conservation-related field. The applicant must also be a resident of Barber County. The deadline for applications is March 31, 2012. Applications are available at the conservation office, 800 W. 3rd Avenue, Medicine Lodge, Kansas or on our website at www.barbercountyconservationdistrict.com on the youth & education tab. You may also call (620) 886-5311 ext. 3 for more information.

Cost Share Sign-Up

Applications for the FY 2013 Water Resources Cost-Share Program (WRCSP) and Non-Point Source Pollution Control Program (NPS) will be accepted April 1-30, 2012. Approved practices include waterway construction, grass seeding, pasture and hayland seeding, livestock water developments, ponds, terraces, pipe outlets, erosion control structures, and windbreaks. All applications will be ranked according to priority of the resource concern. Funding will become available July 1. Remember, all projects must be approved for funding prior to beginning. Applications for cost-share assistance through the Non-Point Source Pollution Control Program (NPS) will also be accepted during the April sign-up period. Approved practices for this program include repair of failed septic systems, abandoned water well plugging, and livestock waste management. As in all cost-share programs, a project must receive approval before it can be started.

Notice: When you call the Barber County USDA Service Center at (620) 886-5311 an auto attendant will answer the phone. You may enter any of the following numbers during the message:

2 - Farm Service Agency
3 - NRCS and Conservation District

If you have a rotary phone, please stay on the line and a person will assist you.

South Central Kansas Residue Alliance Soil Improvement Workshop

The South Central Kansas Residue Alliance will be holding a Soil Improvement Workshop on March 14, 2012 at the Kingman Christian Church in Kingman, Kansas. Special guest speakers include Dwayne Beck of Dakota Lakes Research Farm, Pierre, South Dakota, and James Hoorman, of Ohio State University Extension. A catered lunch is provided. **Please RSVP by March 12th** to Pam Stasa at pam.stasa@ks.nacdnet.net or call (620) 532-3116.

Winter Canola Risk Management School

A Winter Canola Risk Management School will be held on March 15, 2012 at the Bank of Kansas in Anthony, KS. Topics for the school include varieties, variety selection, and winter survival, winter canola establishment strategies for western Kansas, pest and disease update, harvest risk management, RMA update, Great Plains Canola Association update, and Marketing. For more information or to register please call (620) 842-5445 or email Brian ksuwally@ksu.edu or Kathy klamb@ksu.edu.

A number of conservation program sign-ups will be occurring this spring. Be sure to take note of these dates and call or stop by if you have any questions.

Conservation Reserve Program – General sign-up: March 12th – April 6th

Lesser Prairie Chicken Initiative sign up #2 – EQIP: March 30th

Lesser Prairie Chicken Initiative sign up #3 – EQIP: March June 1st

BE SURE AND VISIT US ON THE WEB @
WWW.BARBERCOUNTYCONSERVATIONDISTRICT.COM
AND
LIKE US ON FACEBOOK FOR UP-TO-DATE INFORMATION INCLUDING SCHOLARSHIPS, COST SHARE, AND EVENTS!

Barber County Conservation District Board of Supervisors

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Member .....Matt Cantrell
Member ..... Ted Alexander

The Board meets on the first Tuesday of each month at the Barber County USDA Service Center. If you have any questions or comments for the Board of Supervisors, or suggestions for this newsletter, please call (620) 886-5311.

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