

Ann Bleed

From: Roger Patterson [rpatterson@dnr.state.ne.us]
Sent: Monday, August 25, 2003 12:02 PM
To: David Cookson (E-mail); Ann Bleed (E-mail); Jim Cook (E-mail); Derrel Martin (E-mail); Mike Thompson (E-mail); Gayle Starr (E-mail); Bob Hipple (E-mail); Brad Edgerton (E-mail)
Subject: FW: Friday Message August 23, 2003

You may find item 3 interesting. Looks like Steve may be drawing conclusions before we even start the study.

-----Original Message-----

From: Steve Chick [mailto:steve.chick@ne.usda.gov]
Sent: Saturday, August 23, 2003 11:17 AM
To: 'fridaymessage1@ne.usda.gov'; 'fridaymessage2@ne.usda.gov'
Subject: Friday Message August 23, 2003

To: All Employees & Conservation Partners

Worms and viruses have made quite an effort to paralyze our modern day mode of communications, but our outstanding cadre of IT specialists have proven once again to be up to the challenge. The inconvenience of these electronic pests has resulted in me sending the Saturday version of the Friday Message.

There is another reason this is a Saturday message. This may be hard to believe, but I do place family over my work and yesterday I am proud to say that we were in Omaha for the University of Nebraska Medical Center's "White Coat Day" celebration to see our oldest son, Adam, enter into medical school. It is amazing that 3 former hockey player teammates all entered medical school together, which says something for the importance of maintaining mind and body. Among those three hockey players was Land Improvement Contractor Association's (LICA) member Darrel Stromer's grandson, Brent Timperley. Darrel and I were both popping buttons off our shirts yesterday.

1. Three Selections Made In The Field
2. Karen Ott's Weekly Message
3. What Impact Does On-Farm Conservation Have On Flows In The Republican River?

1. Three Selections Made In The Field - I am pleased to announce the following three selections to key positions in the field.

Chadron Resource Conservationist - We feel extremely fortunate to have selected Terril Heilman who is coming to us from the District Conservationist position in Wessington Springs, SD. Terril has been the District Conservationist in Wessington Springs since 1991. Prior to that Terril held positions as Area Resource Conservationist in Great Falls, MT and Conservation Agronomist in Roosevelt, UT. Terril has a two bachelor of science degrees for South Dakota State University in General AG and AG Education and an Master's Degree also for South Dakota State University in Agronomy. Terril is excited about the prospect of focusing on conservation planning dealing with the variety of natural resources issues in the Upper Niobrara White NRD. Robin Foulk is equally excited about getting someone with Terril's experience and skills. Congratulations Terril!!

Ogallala Rangeland Management Specialist - I am very pleased to announce the selection of Kristin Miller for the position of Rangeland Management Specialist in Ogallala replacing Jeff Nichols who earlier moved to the North Platte office. Kristin is currently a Rangeland Management Specialist in the North Platte Field Office where she is been since 1998. Prior to that she served as a Student Trainee Range Conservationist in Imperial and a Soil

Conservation Aid in Sidney. Kristin graduated from Chadron State College in 1997 with a major in Range Management. She also attended the University of Wyoming. Kristin is originally from Dalton, NE, which I had to look up on the map to see that it is north of Sidney. Congratulations Kristin!!

Ogallala Soil Conservationist - I am also very pleased to announce the selection of Carol Eakins as Soil Conservationist for the Ogallala Field Office. Carol has served as a Rangeland Management Specialist in Grant since 1997. Prior to that she served as a Student Trainee in Range Management in Imperial and Ord. Carol also worked as a seasonal employee for the USFS in Chadron and Big Piney, WY. Carol attended both Chadron State College and the University of Nebraska resulting in a Bachelors degree from Chadron State in Range Management. Carol is originally from Seward, NE. Congratulations Carol!!

2. Karen Ott's Weekly Update - Karen addresses how much farmers depend on luck. For the most part it seems that luck has not been on their side for several years, but despite that trend she always manages to find the silver lining.

"No rain this week. The weather continues hot, windy, and dry with afternoon temps reaching the high nineties. July 2003 was our driest on record and with the 'not a drop of rain August' we are experiencing we could be in for another record breaker. Since last Sunday morning the skies have been hazy with smoke from burning Wyoming forests. At times visibility has been cut to 1 ½ miles and the sunrises and sunsets have turned the color of blood. Every conversation starts with "Did you see the sunrise/sunset yesterday?" A side effect of the smoke is that I have had to give up hanging freshly washed clothes outdoors on the clothesline. Dale didn't buy my suggestion that smoky bed linens were as close to a vacation in the Great Smoky Mountains as he would ever get. I guess I'll be using the clothes dryer until the fires are out.

The 2003 irrigation season is entering its final stages and even though it is a month shy of a normal season we are grateful for the water we did receive. We all learned a lot last year and put the 2002 experience to good use. What has 2003 taught us? We will be planting a larger percentage of our land in 2004 to wheat or other small grains. Hopefully next year we will have better luck with our wheat crop. Have you ever noticed that farmers throw the word 'luck' around a lot; "If we're lucky it won't freeze.", "If we're lucky prices will go up", "If we're lucky we'll get some snow this winter". If we are lucky. If we are lucky. If we are lucky. No matter how I look at it though, it just doesn't seem prudent to base a life's work on the same principle that drives a Las Vegas gambler. But I guess farming has always been a game of chance. Place a bet in spring, roll the dice in summer, and, if you're lucky, rake in the money come fall.

We sold our 2002 crop of pinto beans this week. The price hadn't budged since last fall so we finally decided to cut the storage fees and our losses. Poor prices are being blamed on a NAFTA dispute with Mexico that closed the border most of the spring and summer to U.S.A. beans. The border is now open but only to 'new-crop' pintos. I guess we are just unlucky.

And what's new with area wildlife? The turtles have hatched and the little guys are on their own in a big wide dangerous world. We rescue them from the oddest places, caught in the gate of irrigation pipe or swimming in an old tire filled with water. We have a doe with twin fawns 'nesting' along Horse Creek. The spotted babies are as cute as they can be and I have named them Bambi 1 and Bambi 2. Not very original I know but I don't think they mind. I found 4 prairie dog holes last week in our home pasture and the residents have been 'strongly cautioned' that they would do better to move on. Blackbirds are migrating through the valley. Like a meandering stream they fly overhead, thousands upon thousands of birds moving southeast for hours on end. I'm not partial to blackbirds, at least not the year-round yard birds that foul my birdbaths, dirty my car windows, and build untidy nests in my trees. They are certainly the bad boys of the bird world.

Bright and early Friday morning my mother and I will be butchering chickens. I spent the afternoon lugging tubs, tables, chicken plucker, kettles, bowls, knives, water hoses, garbage containers, two burner stove, rubber gloves and more to the shop. Dale is in charge of the 'off with the head' part of the process as I prefer to be the accomplice and not the actual murderer.

Yep, it is surely life in the fast lane out here in the panhandle."

3. What Impact Does On-Farm Conservation Have On Flows In The Republican River? - Thursday the Republican River Conservation Committee Met in Holdrege with the Republican River Compact Administration (RRCA) Committee to update the RRCA on the progress and plans we have for attempting to address the impact of terraces and farm ponds on flows in the Republican River. Why is what seems like a simple assignment so complex?

Terrace Impacts On Flows - Terraces are primarily installed to reduce soil erosion by slowing water runoff. This keeps sediment, pesticides and fertilizer on the land instead of in the river and reservoirs. Terraces allow tractors, planters and combines to traverse the land without breaking axles in deep rills and gullies.

Terraces impact water flows in the river by primarily changing the timing of water reaching the river. Instead of the quick release of water off the land, terraces capture water and slowly allow it to infiltrate into the soil and back to the river via ground water flow. Terraces will result in some increase in evaporation loss of water to the air and will also likely allow for increase in evapotranspiration (ET) increase use of water by the growing crop. However, the ET increase will mostly be limited to the relatively small area of where the water ponds behind the terraces.

Terrace impact on water flows is also further complicated by the type of terrace. Flat channel terraces, level terraces, gradient terraces and tile outlet terraces are all utilized within the Basin.

Terraces do impact water flows, but for the most part my guess is the primary impact is the change in timing of flows and not in depletion of water within the Republican Basin.

Farm Ponds - Farm ponds will have much the same effect of terraces. Instead of allowing for quick release of water to the River the ponds again act to change the timing of flow by slowly releasing the water through the soil to the groundwater and back to the river. Again they serve as filters preventing sediment, pesticides and fertilizer from reaching the river and reservoirs.

Ponds of course will increase evaporation to the atmosphere, but that increase may be offset by at least two factors. The vegetation that was on the site prior to the pond construction would have yielded water loss through ET. The Platte River Study we completed a few years ago showed that in many cases the increase in evaporation of a pond was indeed offset by what would have occurred through vegetative ET loss. The other offsetting factor is there would have been transmission evaporation loss from water that previously flowed down normally dry channels prior to pond installation.

Conservation Tillage Impacts - This conservation practice is not required to be studied for the Republican River settlement, but I often hear the blame for the impacts of conservation placed on this practice. However, again this is not as straight forward as it seems. Minimum and no-till slow water runoff and therefore do hold the water for possible ET increase use by the growing crop. However, like terraces and ponds, much of this water will deep percolate past the root zone and will end up in the River at a later time. Conservation tillage will improve soil structure over time (i.e. carbon sequestration) resulting in greater water holding capacity of the soil. On the flip side the mat of crop residue on the surface greatly reduces soil surface evaporation loss. Overall I suspect conservation tillage may have some impact on water flows in the Republican River, but

probably not to the degree that some believe.

What else may have impacted flows in the river perhaps more than conservation? There are some obvious impacts caused by increased pumping and irrigation, but how about some not so obvious.

Historians tell us that there were very few trees along the Republican River, but today much of the river is lined with a wide band of cottonwoods. The ET increase of this woodland must have significant impacts (I am not proposing elimination of the trees, however improved woodland management through a thinning harvest could greatly reduce water consumption, while also improving wildlife habitat).

During the 15 year period of 1982 to 1997 the Republican Basin experienced a conversion of over 500,000 acres of wheat to corn with most of that corn acreage increase under irrigation. The ET change of wheat versus corn is a huge impact.

Technology improvements have resulted in tremendous increases in crop yields over the past several decades. These yield increases can be attributed to improved hybrids, improved pesticides for weed and insect control, improved fertilizer and improved implements allowing for more efficient placement of fertilizers and pesticides. Higher yielding crops all result in the demand for more water.

What about common sense? There is no doubt that on-farm conservation practices have some impact on flows in the Republican River, an impact that for the reasons stated above I believe to be much less than what some believe. I would argue that what ever that impact is that it is well worth it. Without the terraces, ponds and conservation tillage the river and reservoirs would be choked with sediments, pesticides and fertilizers. Worse yet, the economic impact to the area would be devastating because many of the fields would be unfarmable due to gullies or nonproductive due to the loss of the topsoil. So, common sense says we must have the conservation practices on the watershed.

Finally common sense says that the virgin period used for the calculation of water runoff in the Republican River was the worst possible snapshot in history. It was at a time in the 1930s that land had reached its peak in being broken out and was farmed with virtually no conservation practices. The conservation applied over the past several decades has only moved us partially back toward what mother nature had in place for eons before the 1900s -- that being native prairie.

Conclusion - I had to get this off my chest in some venue and probably by now no one is reading this novel, but in conclusion there is definitely an impact of on-farm conservation on flows in the Republican River, however, I believe I have successfully made the case that this impact is not nearly what some believe it to be. And in the end what ever that impact may be is necessary both economically and environmentally for the Republican River Basin.

By the way, I welcome a research study that looks at this issue as long as that study gets its arms around all of the issues I raised above.

Go Huskers - 7 days to go!!

Steve Chick
State Conservationist