



The Beauty Of Buffers

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The Continuous Signup of the Conservation Reserve Program includes options that increase farm profits, reduce erosion, and benefit wildlife, especially upland birds.

It isn't often that something this terrific comes along. In fact, some may think it's too good to be true. But it is true, and the opportunities shouldn't be passed up.

What am I talking about? A relatively new part of the federal Conservation Reserve Program offers the chance to improve Kansas farmland for conservation, crop production, and

wildlife all at the same time. What's more, it can improve farmers' financial bottom lines. The Continuous Signup of the Conservation Reserve Program, or CCRP, is considered by many to be one of the best conservation programs to come out of the U.S. Department of Agriculture (USDA) in a very long time — except maybe for the name.

The often-misunderstood

name Continuous Signup doesn't mean that once in the program, you're in it continuously, forever. Most contracts are for 10 years, just like regular CRP. All the "continuous" part means is that farmers and landowners can visit their local USDA Service Center any time to sign up for CCRP buffers. This distinguishes it from the regular CRP which has typically been

open for enrollment during short signup periods.

The most obvious difference between regular CRP and CCRP buffers is the scale at which they're applied. Regular CRP was created in 1985 and provided incentives to landowners and farmers to take less-productive soils out of production and to seed them to permanent cover, usually native grasses in Kansas. Generally, all or a significant part of a field was enrolled for 10 years, creating blocks of grasslands that, with few excep-

tions, were not grazed or hayed. While the primary purposes of both regular CRP and CCRP are to control soil erosion and improve water quality, CCRP takes a more directed approach. Most CCRP buffers are installed in or around working crop fields on sites targeted to their specified purpose. Just the critical portions of the field are normally treated.

A major difference between regular CRP and CCRP is the relative ease of enrolling land. In regular CRP, farm operators or

owners must offer a bid of what they would accept as an annual payment. The land offered is then evaluated with a series of criteria producing a score that, along with the rental bid, determines whether or not the offer will be accepted. Only fields, or parts of fields, with highly erodible land (HEL) are eligible for regular CRP. None of this matters for CCRP. As long as the proposed CCRP buffer suits the land offered and serves the purpose specified for that practice, it's eligible for the program. The conservation benefits of buffers are so outstanding, USDA will accept just about any offer to install them on appropriate sites — no bids, no scores, no HEL limitations.

Just what are these wonders of conservation? Basically, buffers are just common sense. In fact, Common Sense Conservation is one of the catch phrases of the program. There's nothing complicated about buffers. Mostly, they're grass strips. Some CCRP buffers involve tree and shrub planting, but the practices with the greatest potential coverage in Kansas involve grass.

CCRP grass strips are broadly referred to as buffers, because that's exactly what they do — they buffer or minimize problems that can be associated with cropping. Grassing terraces, for example, stabilizes terrace structure and effectively buffers against further loss of terrace function, particularly by preventing washouts during thunderstorms. Grass filter strips placed along perennial and intermittent streams buffer our water resources against degradation by filtering out sediment, nutrients, and farm chemicals from field runoff. Grass wind strips buffer against wind erosion that can steal precious top-



Pheasants poured out of this Scott County cross wind trap strip shortly after this photo was taken. Contour grass strips can be seeded on terraces or on unterraced land

soil and reduce the quality of the air we breathe.

Of course, the most obvious benefit to the landowner and/or farm operator are the dollars. All CCRP buffer practices come with annual payments though USDA. These will vary across Kansas, depending on the soil type involved and the average land rental rates in that county. Annual payments decrease on a per-acre basis from east to west, ranging roughly from around \$100 in easternmost Kansas to about \$30 in the far west. USDA also provides 50 percent cost sharing for installation, an added 40 percent practice incentive payment for certain buffers, and some even carry a onetime signup incentive payment of \$100 per acre.

The beauty of buffers is that they provide so many and varied benefits — benefits that accrue not just to the farmer, but to everyone. Perhaps the best way to illustrate this is with the example of grassed terraces. Keep in mind that each CCRP practice has its own unique set of benefits.

By stabilizing the structure,



Buffers could have stopped this snow on the field where it would have provided valuable soil moisture; instead, it's just causing problems.

grassed terraces reduce sediment, nutrients, and pesticides in field runoff. Establishing stiff-stemmed grasses on terrace ridges creates a windbreak that slows the wind and prevents it from stealing topsoil. Slowing the wind leads to many other benefits, including keeping snow on the field where this important

moisture can significantly enhance crop yields. Retaining snow is especially critical in western Kansas where soil moisture is limited. Holding snow on crop fields also helps keep it from creating problems.

Consider the October 1997 blizzard that hit western Kansas. That storm dumped up to 2 feet of snow with 60 mph winds. Of course, snow blew off most croplands and huge drifts accumulated behind any kind of barrier. The storm caused serious losses of livestock in feedlots, much of which came after the blizzard. As the drifts melted, livestock were wading around in cold mud for months. The resulting stress, added to earlier losses, reduced weight gains, and caused further economic hardship. If the fields around those feedlots had been treated with grassed terraces or grass wind strips, chances are that much less snow would have blown into stock pens, cutting losses significantly. And snow kept on crop



Little bluestem (left) and switchgrass (right) stand up well through wind-driven rain or snow, making the grasses ideal for buffers and for wildlife habitat.

fields is snow that doesn't end up stranding travelers and drifting shut county roads.

By slowing the wind, grass strips also shelter adjacent crops. Persistent winds on the Great Plains increase evaporation from the soil and steal moisture directly from crop leaves. By reducing air movement across the crops, moisture that would have been lost can be channeled into additional growth, including stronger roots that let crops tap deeper soil moisture. In-field grass strips can also reduce the battering young plants take from high winds and wind-borne soil particles.

Although it defies conventional thinking, studies have shown that grass strips can enhance crop production by harboring increased numbers of beneficial arthropods. The best research on this has come from England where scientists have shown that aphid predators, particularly beetles and spiders, increase dramatically in permanent grass strips spaced across wheat fields. They call these grass strips Beetle Banks.



Greg and Mary Andersen are pleased with their grassed terraces, here dividing wheat from wheat stubble.

In Kansas, the best known aphid predator is the lady beetle, what every kid knows as the "ladybug." Greg and Mary Andersen, who farm in western Gove County, have an interesting story about the greenbug infestation that hit parts of northwest Kansas in the spring of 2000. They had seeded native grasses on 14 acres of terraces in the field northwest of their farmstead in 1996. When the greenbugs hit, the field with the grassed terraces was the only

one they didn't have to spray. The Andersens credit the increased numbers of ladybug nymphs and adults they saw in that field with keeping the greenbugs in check.

Typically, folks suspect that grass strips might harbor grasshoppers. Every time I've heard that, I've asked if anyone knew of a situation where grasshoppers had been a problem for crops next to CRP grass. After several years of asking, not one farmer or ag professional has said "yes." Now I can't say that no grasshopper ever hid out in CRP grass, but as far as I know, grasshoppers haven't been a problem after 15 years of the Conservation Reserve Program. Even the Andersens, with 5 miles of grassed terraces next to their farmstead, haven't seen it.

Farmed terraces, as we have in Kansas, wear down over time. One way to keep them functional is to rebuild them, either with a moldboard plow or more expensive specialized earth-moving equipment. But once a terrace is grassed, this rebuilding work and expense can be avoided. If anything, grassed terrace ridges may increase a little in height over time as trapped dust particles and organic matter slowly accumulate.

When it comes to grassed terraces, another CCRP catch phrase, "Farm the Best and Buffer the Rest," clearly applies. In many cases, terrace construction has excavated less productive subsoils that now comprise much of the terrace ridge. Consider also that rains run off terrace ridges, snow blows off them, and their elevation exposes them to desiccating winds during the growing season. Particularly where moisture is limited, these factors



A filter strip helps keep sediment and farm chemicals out of this small stream.



Lighter soils, often seen in terrace ridges, are less productive for crops but offer ideal sites for grass buffers.

mean terrace ridges may yield less, so farming them may be unprofitable. In most cases, terrace ridges would yield more benefits and profit as CCRP grass strips.

Terrace ridges aren't the only sites where farming can be unprofitable. Osage County farmer Keith Thompson realized this after he installed a yield monitor on his combine. The yield information showed he was losing money by farming some field borders and areas of poorer soils. The return on those sites simply didn't pay back the

input costs. By seeding those places to buffers, Thompson increased his farm profitability. Where the buffers qualified, CRP payments have provided an added financial bonus.

With low grain prices and high input costs, farm profit margins today are slim. Farming odd areas that produce lots of point rows

and double application of seed, fertilizer, and chemicals may not be a good idea. In many cases, buffers can be designed to even out farmed areas so over application of inputs is minimized, and profitability increased. This can be done with riparian filter strips along meandering streams. Grassed terrace width can be varied a bit to better accommodate farm equipment. Contour grass strips on unteraced land can be laid out to produce even-width cropped areas between them. Even the width of cross wind trap strips can be

varied to straighten out farming patterns. In some situations, a side benefit of a buffer is to create a permanent property boundary.

By working together with the producer, the USDA district conservationist (NRCS) and county executive director (FSA) can set up a system of buffers that will fit into the desired farming pattern. If, for example, terraces pinch together in places where grassing them would make farming tricky, those terraces need not be grassed. The farmer can choose to install as few or as many grass strips as desired. Just consider, at a minimum, that grassed terraces or wind strips can fit perfectly with existing farming patterns when placed at margins that normally separate different crops in the rotation.

I have encountered a few cases in which interested farmers were talked out of applying buffers by local chemical applicators. To be sure, it's preferable not to spray pesticides directly on buffers. But the native warm-season grasses best suited for buffers are actually fairly tolerant of herbicides, so a little accidental drift is not a big deal.



Elevated just above the rest of the field, terrace ridges tend to be dry since snow blows off, rains run off, and evaporation rates are greater. Farmed terraces sometimes wash out during heavy thunderstorms. These aging, but still functional, terraces could easily be grassed to create parallel cropping between them.

Perhaps some chemical applicators are concerned with a perceived inconvenience in spraying around buffers. This concern is easily addressed by properly designing the buffer system to facilitate chemical application.

When production benefits are factored in with the payments offered by USDA, the economics look pretty good. Farmers and landowners can justifiably lament the poor return that farming has recently provided. But those who take time to pencil out costs and returns, may discover that few if any cropping systems will consistently provide as much per-acre annual

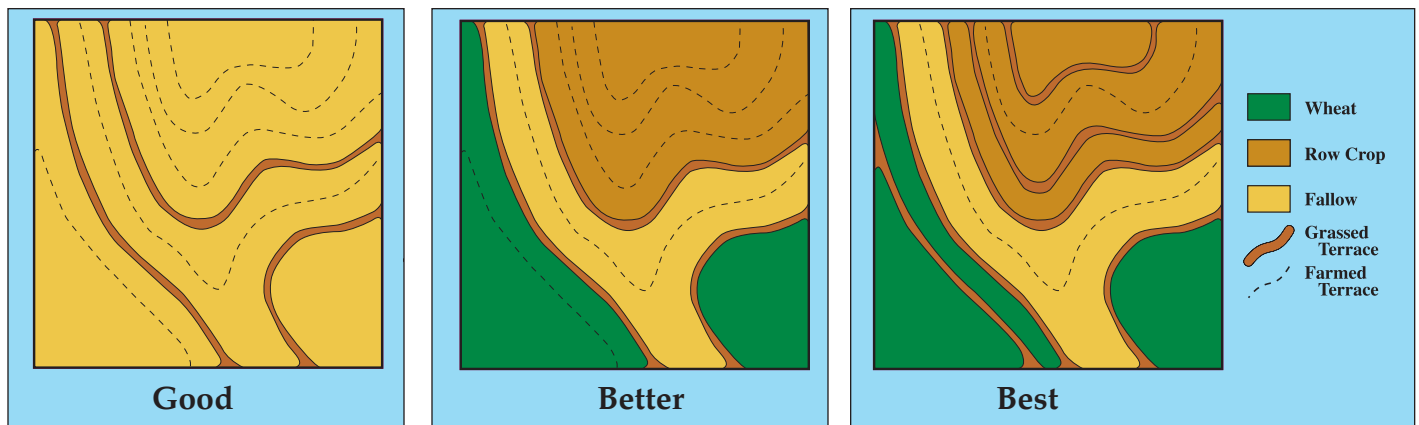
income as installing buffers.

One of the many beauties of buffers is simply that — beauty. Flying over fields with grassed buffers offers a vision of well-managed working land in harmony with nature. The graceful curves of grassed terraces or filter strips, or even the straight lines of wind strips, break up the monotony of large crop fields. The same is true at ground level. In summer, the greens of native grass buffers offer a welcome accent to golden ripe wheat and harvested stubble. If made part of the buffer's seed mix, bright sprays of Maximilian sunflower will highlight the onset of fall and attract migrating monarch

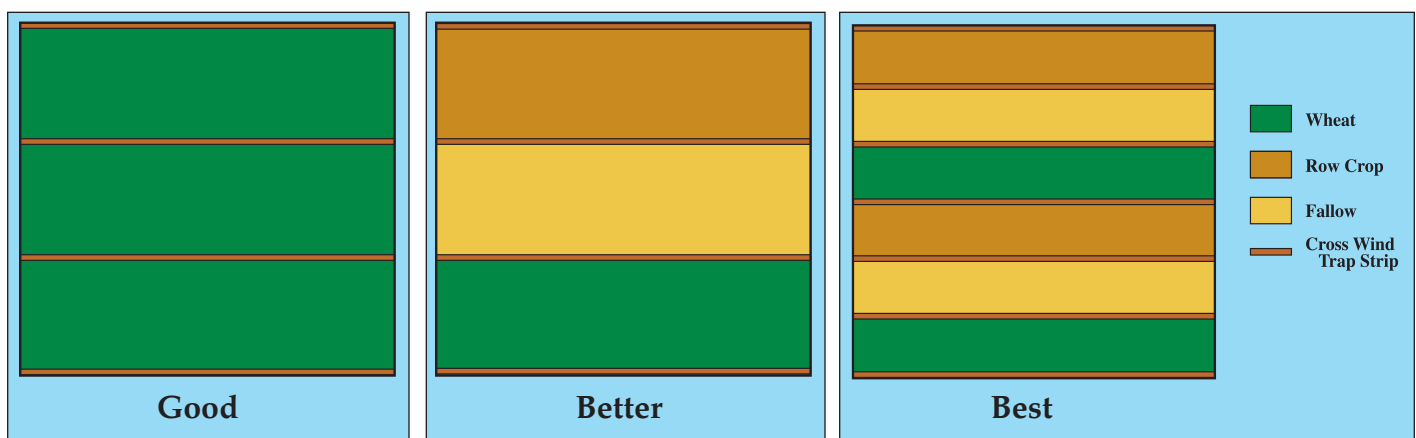
butterflies. Other wildflowers offer their own dashes of color. The subtle pinks, rusts, and yellows of dormant native grasses lend visual character to the drab grays and browns of the winter agricultural landscape.

And, of course, there's the wildlife. It's no secret that pheasants and quail, Kansas' most popular game birds, are in decline on our nation's farmlands. Kansas has fared better than most, but we are not immune. Economic pressures have driven agriculture toward intensification, with negative wildlife consequences. But no matter the cropping system, buffers can offer quality, func-

Grassed Terrace Systems



Cross Wind Trap Strip Systems



tional habitat where little might otherwise exist. Grass strips hold great potential to increase habitat edge — the places where different habitats come together. In the Andersens' field, fully 10 miles of edge were created by their grassed terraces. And the birds have responded. Pheasant numbers have increased several fold and quail are present now where none existed before. They still see weather-related ups and downs, but the ups are higher, the downs aren't so low, and recovery is quicker.

I can't recall how many times I've heard farmers express concern over watching hawks kill pheasants when they're tilling a large stubble field. Blame usually goes to the hawks — not the scarcity of habitat. When fields are large and the stubble represents the only cover around, a bird flushed this way has a poor chance of escape. Grass buffer strips can provide enough escape cover to make the difference between life and death. Even as few as two grass buffers,

spaced over a quarter-section, would generally put quality escape cover within 200 yards of a pheasant in need. That's far better than the too-common reality where the closest escape cover can be a mile or more distant.

Will grassed buffers become predator travel lanes, potentially reducing nesting success? Most such concern originates in the corn belt. There, narrow strips like the now rare fenceline, are surrounded by soybean or corn stubble, or just black dirt. That makes a skinny fencerow stand out like a black Lab's hair on a white wedding dress. In such cases, nests may have a reduced chance of success. But I think it's unlikely Kansas will suffer this problem. Buffers offer greater width, better cover quality, and probably greater frequency of occurrence on any given field, all of which should diminish predator impact. What's more, in Kansas we are fortunate to have wheat as our major crop. Green wheat usually provides vast

areas of cover at just the right time for successful nesting of many species. Grass buffers in our wheat-abundant cropping systems will become part of much larger nesting blocks, effectively eliminating the strip effect at nesting. What buffers can offer as brood habitat, escape cover, and even winter cover, in my opinion, far outweighs this minor concern, particularly given the alternative.

While the grass species best suited for buffers depends on the purpose, stiff-stemmed native grasses are ideal. Switchgrass and little bluestem not only have deep root systems that bind the soil, but their stems stand well even under the force of wind-driven snow or rain. This standability is critical to controlling erosion, enhancing production, and to habitat quality. Perennial forbs in the seed mixture add benefits like nitrogen fixation and improved habitat structure.

Other potential benefits of buffers are on the horizon. Since the native grasses used in buffers take carbon dioxide (CO₂) from the air and hold the carbon in their deep root systems, buffers can help in the effort to slow the effects of global warming. Farmers and landowners may soon be able to receive direct, private-sector payments for seeding and maintaining grasses through the process of selling "carbon credits" on the open market. Buffers may also prove critical in minimizing the effects of severe weather extremes predicted to accompany global warming. Researchers are even interested in studying the possibility that native grass buffers could act as barriers to some crop diseases. It is known is that diverse ecosystems, particularly diverse agricultural ecosystems, are more



Adding broad-leaved forbs to the seed mixture will greatly improve the buffer's habitat quality. Here alfalfa and Maximilian sunflower diversify the stand.

resistant to such problems.

To the skeptics, all this may seem like just too rosy of a picture. Sure, there are some limitations, some paperwork to deal with, and a little grass stand maintenance will be needed down the line. Buffers won't work in every situation. One glaring oversight in the current CCRP rules is that grazing buffers, incidental to pasturing cattle on wheat, is not permitted. Kansas Congressman Jerry Moran and his staff have recently inserted language in the 2002 Farm Bill intended to correct this oversight. But unlike the general grazing prohibition on regular CRP, grazing some types of buffers, incidental to fall or winter gleaning of stubble, is already permitted with permission from the Farm Service Agency county committee. A 25 percent reduction in the CCRP payment is currently required if such grazing is to occur. Where we have experience with winter grazing around grassed terraces,

for example, cattle have grazed the stubble and left the coarse, dry grass of the buffers virtually untouched. Efforts like Congressman Moran's hold promise to increase CCRP flexibility even more.

Lots of people have worked hard to develop and adjust the Continuous Signup to make it a practical, flexible program that can truly work on the land. I can think of no other case where so many agencies and organizations, often with diverse points of view, have pulled together to make a conservation program work. Senator Pat Roberts and his staff deserve tremendous credit for seeing to it that grass strips can be installed on terraces. It is true testament to the value of buffers that they are so broadly supported. Just recently, nine state and federal agencies, including Kansas Wildlife and Parks, have joined together to hire new part-time employees to work in 25 County Conservation Districts for the purpose of pro-

moting and installing buffers.

Ultimately, the success or failure of CCRP rests with the people who own or work the land. There are few, if any, farms in Kansas that couldn't benefit from some type of buffer. Buffers truly deserve some of your time and thought.

Consider that buffers can not only reduce the farmer's financial risk, but improve quality of life. They are a simple way for us to give back to the land, to future generations, and to each other. Consider too that buffers could moderate criticisms of agriculture in a social climate where most citizens believe in paying farmers for conservation, but are less supportive of subsidies. And consider that buffers could represent a partnership between producers and consumers, rural and urban, that might help us pull together, rather than apart. Something worthwhile for everyone — that's the real beauty of buffers. ♡

Buffers With the Most Potential for Kansas

Practice No.	Name	Maximum Width	Contract Length
CP5A	Field Windbreaks	Variable	10 - 15 Years
CP8A	Grassed Waterways	100 feet	10 Years
CP15A	Contour Grass Strips	30 feet	10 Years
CP15B	Contour Grass Strips on Terraces	60 feet	10 Years
CP16A	Shelter Belts	Variable	10 - 15 Years
CP21	Filter Strips	120 feet	10 - 15 Years
CP22	Riparian Forest Buffers	180 feet	10 - 15 Years
CP24	Cross Wind Trap Strips	25 feet	10 Years