

Expiring CRP Options – Conservation Buffers 1

Riparian Forest Buffers, Windbreaks/Shelterbelts, and Herbaceous Wind Barriers

USDA Natural Resources Conservation Service - North Dakota

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North Dakota landowners and producers have enrolled over 3 million acres into the Conservation Reserve Program (CRP). Establishment of CRP cover (grass, legumes, trees, and shrubs) has resulted in tremendous environmental benefits to our landscape. CRP has greatly reduced sediment, nutrients, and pesticides in our water resources while providing benefits to resident and migratory wildlife.

As your CRP contract nears its end, you will be making decisions on what to do next with your land. While much of the CRP land in North Dakota is productive and likely will go back into crop or hay production, many acres of CRP land are environmentally sensitive and are not recommended for annual crop production. There are areas in most CRP fields that if maintained and managed as permanent cover will provide both protection to our rivers, lakes and wetlands, while reducing input costs on lower productivity land.

Consider maintaining or establishing areas of permanent vegetation on these critical parts of the landscape. Known as conservation buffers, these patches of vegetation have the potential to:

- Reduce the amount of sediment reaching a stream by up to 80%
- Reduce nitrogen in near surface ground water by up to 90%
- Increase crop yields by 10-30%, depending upon the crop and the buffer
- Reduce snow removal costs by thousands of dollars per mile of road
- Protect fields from flood damage and flood debris
- Reduce drain and road ditch maintenance costs
- Reduce nutrients and pesticides in runoff water
- Squaring up fields for ease of crop production
- Diversify wildlife habitat opportunities

Consider re-enrolling your eligible acres of expiring CRP contract cover into one or more of the following CRP practices to protect soil and water quality. The existing vegetation will likely meet CRP requirements. In most cases, the buffer practices are already established as part of a CRP contract. NRCS is ready to assist landowners with the location and management of buffers. CRP fields tend to be rough, due to the activity of burrowing animals. Keeping these areas in a grass buffer may require a leveling operation(s) to smooth the areas for subsequent equipment traffic, field operations, and maintenance.

Following is a brief discussion of available buffer practices in North Dakota. For more details concerning what practices qualify for Continuous CRP and what incentives apply, refer to "Continuous CRP and SAFE Practice Summary, revised 2-27-08."

Riparian Forest Buffer

Riparian forest buffers consist of trees and shrubs planted next to streams and other water bodies that were forested prior to crop production. When combined with a narrow band of dense grass (filter strip) on the upper edge of the buffer, they



Riparian forest buffer protecting a stream

effectively reduce sediment, nutrient and pesticide concentrations moving into the adjacent water body. Additionally, the deep roots of the trees and shrubs can anchor stream banks and pull nutrients from deep in the soil profile, reducing leaching into ground or surface water.

Other benefits of riparian forest buffers include woody wildlife habitat and wood product production. When along major streams, healthy mature trees can effectively strain flood debris, leaving less debris to clutter adjacent fields.

Windbreaks/Shelterbelts



Ash windbreak protecting crops

Windbreaks are one of the most recognized conservation practices in North Dakota. Windbreaks consist of single or multiple rows of trees and shrubs designed to protect soils from wind erosion, livestock from chilling winds, crops from water sapping summer winds, and keep areas snow free.

As acres are brought into production, the temptation is to remove existing field windbreaks. For many of the crops growing in North Dakota, especially some of those seeing large acreage increases (corn, soybeans), healthy windbreaks can substantially increase crop yields. Studies from around the Great Plains and Canada indicate yield increases up to 25 percent in the protected areas. Those calculated yield increases include the windbreak acreage not planted to crop and the yield reduction immediately adjacent to the windbreak. At today's prices, that yield increase could be substantial. If windbreaks already exist, those yield increases can be realized immediately. Existing windbreaks that have been "let go" for years, may need some management to realize maximum returns from yield increases.

Herbaceous Wind Barriers

Where field tillage is used to prepare soils for planting, herbaceous wind barriers reduce erosion, manage moisture and protect crops. Herbaceous wind barriers are narrow strips of tall perennial grasses or annual crops established to protect soils and crops. They improve snow distribution with subsequent crop moisture responses. If the expiring CRP field has a tall wheat grass component, the tall perennial grass is already established. If the existing stand contains only short grasses and legumes, the existing vegetation should be terminated and new herbaceous wind barriers will need to be established.



Wind barriers spreading snow evenly

Conservation buffers are not the entire answer to protecting soil and water resources. When applied in correct locations and maintained properly they return conservation benefits far in excess of the small foot print of land taken from traditional production. Buffers are most effective when combined with residue management, such as no-till, crop rotations, nutrient management and pest management practices.

For more information on management options with expiring CRP contracts or if interested in installing one more of these buffer practices, please contact your local NRCS office.