

## FACTSHEET: Contour Buffer Strips

### 1. Definition

Contour buffer strips are strips of perennial vegetation alternated down the slope with wider cultivated strips that are farmed on the contour. Contour buffers strips are usually narrower than the cultivated strips. Vegetation in strips consists of adapted species of grasses or a mixture of grasses and legumes.

### 2. Purpose

Contour buffer strips established on the contour can significantly reduce sheet and rill erosion. Strips slow runoff and trap sediment. Sediment, nutrients, pesticides, and other contaminants are removed from the runoff as they pass through the buffer strip. Buffer strips may also provide food and nesting cover for wildlife.

### 3. How contour buffer strips work

Farming on the contour creates small ridges that slow runoff water, and it increases the rate of water infiltration, reduces the hazard of erosion, and redirects runoff from a path directly downslope to a path around the hillslope. Farming on the contour rather than up and down the slope reduces fuel consumption and is easier on equipment.

- Contour farming is often used in combination with other practices, such as terraces, water- and sediment-control basins, and stripcropping.
- Longer, steeper slopes may require stripcropping rather than just contour farming, which is less effective in preventing excessive erosion on the steeper or longer slopes.
- Irregular slopes may require more than one key contour line. Some fields may be too steep and/or irregularly shaped for contour farming.
- Strips of row crops should be roughly the same width as strips of hay or small grain crops. The desirable acreage of row crops should be considered. Hay strips will rotate to row crops over time. The width of the strip depends on slope, equipment, and management.
- A hand level or contour gauge can be used to establish a key line around the hill.
- All tillage and planting operations should be parallel to the key contour line.
- Rotating strips from corn to legumes allows corn to use the nitrogen added to the soil by the legumes.
- Herbicide carryover may be a problem.
- Replacing end rows with grasses or legumes reduces the hazard of erosion and makes turning equipment easier.
- Grassed waterways are needed where runoff concentrates.
- The grade of the contour key line generally should not exceed 2 percent. Within 100 feet of an outlet (i.e., a waterway), however, the grade can be 3 percent.
- Where curves in contour lines are too sharp for farm equipment, grass strips may serve as sites where the equipment can turn.

### 4. Advantages

- Reduced sheet, rill and gully erosion
- Reduced runoff and flooding

- Increased moisture retention
- Improved irrigation distribution uniformity
- Can reduce size and cost of downstream runoff management

## 5. Disadvantages

- Not suitable for lands with heavy overland flows unless these flows can be diverted to safe outlets
- Curved rows impractical for some farm machinery or for drip tape installation

## 6. Where used

Contour buffer strips are used on cropland subject to sheet and rill erosion. They are most suitable on uniform slopes ranging from 4 to 8 percent but can be used on steeper sloping land. These narrow strips of permanent vegetation are not part of the normal crop rotation. Contour buffer strips are also an excellent filter for runoff and will help improve surface water quality. The practice is more difficult to establish on undulating to rolling topography because of the difficulty of maintaining parallel strip boundaries across the hill slope or staying within row grade limits. Design and layout of variable width contour buffer strips eliminates point rows between buffer strips.

## 7. Resource management system

Contour buffer strips are normally established as part of a resource management system for a conservation management unit. They are concurrently applied with other practices, such as residue management, conservation crop rotation, and contour farming. Contour buffer strip widths are determined by such variables as slope, soil type, field conditions, climate, and erosion potential. Species to use for contour buffer strips depend on soil types, climate, and use by wildlife.

## 8. Wildlife

When planning for wildlife, adjust contour buffer strip widths and plant species to meet the needs of the target wildlife species. Increase widths to 30 feet or wider depending on the requirements for nesting and escape cover of the target wildlife species. Avoid mowing during nesting periods.

## 9. Operation and maintenance

Mow buffer strips to maintain appropriate vegetative density and height for trapping sediment. Do not mow buffer strips during critical erosion periods. Fertilize buffer strips according to soil test results. Spot seed or renovate buffer strip areas damaged by herbicides, equipment, or unusual rainfall events. Redistribute sediment accumulations as needed to maintain uniform sheet flow along the crop-strip boundary. Cultivated strips and buffer strips shall be rotated so that a mature stand of protective cover is achieved in a newly established buffer strip immediately below or above the old buffer strip before removing the old buffer to plant an erosion-prone crop.

## 10. Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Contour Buffer Strips, code 332.

### **11. Practice Costs**

Costs for this practice vary widely with location according to costs for surveying the contours, and potentially for increased time in planting. Consult your local resources for costs for this practice.