

## LATERAL EFFECTS

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### **What is the lateral effect distance?**

The lateral effect distance is the distance on either side of a ditch or tile over which the water in the soil is affected by the presence of the ditch or tile within a given period of time (see Figure 1).

### **What requirements do I have to meet in connection with installing a new or improving an existing drainage system (ditch or tile)?**

For participants in the Farm Bill, an AD-1026 (Highly Erodible Land Conservation (HELIC) and Wetland Conservation (WC) Certification) describing the proposed drainage system must be completed and provided to the Farm Service Agency (FSA). The FSA will contact the Natural Resources Conservation Service (NRCS) in your county and request that the NRCS investigate if wetlands are impacted by the drainage. If no previous certified wetland determination has been done in the project area, the NRCS will need to do a certified wetland determination. If the drainage system involves “Other Waters of the U.S.”, the U.S. Corps of Engineers also will have to be contacted to possibly request a permit. Note that the landowner and/or operator may become ineligible for USDA program benefits if a wetland is impacted by the drainage system. Also, non-Farm Bill participants who impact wetlands may be ineligible for future USDA program benefits if they decide later that they want to participate in the Farm Bill.

### **How close can my drainage system come to the wetlands?**

The NRCS has calculated the lateral effect distances (setback distances) for all soils in South Dakota using drainage equations. These lateral effect distances are based on the effective depth of a 5-inch diameter tile and the soil types between the drain and the wetland. The effective depth is the elevation at the edge of the wetland minus the elevation of the tile invert (see Figure 1). Since water moves easily in sandy and lighter textured soils, the lateral effect distances will be larger than the lateral effect distances for clayey soils. The lateral effect distances for your site will be provided to you by the NRCS county office.

There are additional wetland restrictions for tile drainage systems that have surface inlets and for wetlands that receive substantial groundwater (groundwater discharge wetlands and slope wetlands). These restrictions may include requiring increased lateral effect distances, outletting the tile system into the wetland, and/or allowing no tiling in the upstream or lateral land area where the groundwater is coming from unless the tiling system outlets on the upstream end of the wetland.

### **Why do I have to stay so far away from the wetland?**

The Food Security Act requires that the hydrology of wetlands is not impacted by new drainage systems or by improvements to pre-December 23, 1985 drainage systems. The wetland hydrology criteria are 7 or more consecutive days inundation or 14 or more consecutive days saturation within the top 12 inches of the soil. New or improved drainage systems must be located so that the inundation or saturation periods are not shortened. When drainage systems are installed to improve crop production, the ditch or

tile is sized and spaced to remove water from the root zone quickly enough to prevent crop damage, often in 2 or 3 days. If the system had been designed for 14 days, the drainage system spacing would be significantly greater. That is why the lateral effect distances usually are significantly greater than the drainage design.

### What is encirclement?

Encirclement is the cutting off of the water supply to a wetland by interrupting flow of subsurface water to the wetland. If a tile or ditch completely encircles a wetland, it can cut off the subsurface water that keeps a wetland wet, similar to a diversion above ground diverting surface water away from a wetland. Encirclement is not an issue with wetlands where the groundwater component is zero or negligible.

Figure 1.

