



United States Department of Agriculture
Natural Resources Conservation Service

Water Management Enhancement Activity – Drainage Water Management

Drainage Water Management

Drainage water management is the practice of elevating the water table in a field by restricting the outflow from surface or from subsurface drains. NRCS encourages restricting outflows from agricultural drainage systems during periods in which the resultant elevated water table will not damage crops, interfere with farming operations, nor adversely affect neighboring properties. Water table elevations may be maintained by elevating the outflow elevation of the drain, or by pumping. The managed area is that portion of the field in which the water table is elevated to the design elevation. The effectiveness is based on the length of time and the season during which the water table is elevated at or near the soil surface.

Benefits

Agricultural drainage water contains constituents, nitrates in particular, that can affect downstream water quality. Research shows that under drainage water management, reductions in nitrate loading are proportional to the reduced volume of drainage outflow. Additional benefits include: increased time for break-down of constituents such as pesticides; reduced oxidation of soil organic matter; and, improved seasonal habitat for waterfowl where surface ponding results.

Criteria for Drainage Water Management Enhancement Activity

This enhancement requires implementation of a drainage management plan which includes, for each water control structure:

- A map showing influenced area at each control elevation.
- Record of planned and actual water table control elevations.

Reference:

1. USDA, NRCS, National Engineering Handbook, Part 650; Engineering Field Handbook, Chapter 14, Water Management (Drainage), 4/01
2. USDA, NRCS, National Engineering Handbook, Part 624; Chapter 10 Water Table Control, 04/01
3. DRAINMOD, Users Guide Version 4.0, 06/94
4. USDA, NRCS, National Engineering Handbook Section 16, Drainage of Agricultural Land, 06/71
5. USDA, NRCS Conservation Practice Standard 554, Drainage Water Management, Electronic Field Office Technical Guide
6. Agricultural Drainage Management (ADMS) Task Force Fact Sheet, Agricultural Drainage Water Management Systems for Improving Water Quality and Increasing Crop Production, 10/03
7. Natural Resources Conservation Service, Drainage Water Management (DWM) Index Assessment Tool, 2006