

Effects of NRCS Conservation Practices - National

Mole Drain

An underground conduit constructed by pulling a bullet-shaped cylinder through the soil.

Code: 482

Units: ft.

Typical Landuse:

AL-Aso Land
 O-Other
 W-Water
 D-Developed
 FS-Farmstead
 P-Protected
 R-Range
 F-Forest
 C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	1	Subsurface earthen channels increase infiltration by improving drainage and therefore decrease water runoff.
Soil Erosion - Wind Erosion	0	Subsurface earthen channels improve drainage and may increase surface soil drying.
Soil Erosion - Ephemeral Gully Erosion	1	Subsurface earthen channels increase infiltration by improving drainage and therefore decrease water runoff.
Soil Erosion - Classic Gully Erosion	0	Runoff reduction will do little to impact the classic gully.
Soil Erosion - Streambank, Shoreline, Water Conveyance C	-1	Mole drains outlet at stream bank and will tend to increase surface erosion on streambanks.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	-2	Mole drains tend to dry surface soils promoting oxidation of organic material.
Compaction	1	Water is removed from the profile creating a drier less compactable soil surface.
Subsidence	-2	Drying of soil profile promotes oxidation of organic material and subsidence. The degree of subsidence depends on the amount of organic material in the soil.
Concentration of Salts or Other Chemicals	2	Infiltrating water leaches salts from the soil profile.
<u>Excess Water</u>		
Excess Water - Seeps	2	Infiltrating waters are intercepted and removed from the site, thus reducing the water available for seeps.
Excess Water - Runoff, Flooding, or Ponding	2	Drier soil profile promotes infiltration that decreases runoff peaks.
Excess Water - Seasonal High Water Table	2	Water is intercepted and removed from the site, thus reducing subsurface water.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Mole drains will tend to dry the soil profile near surface accentuating any water shortages. Does not affect water use efficiency.
Insufficient Water - Inefficient Moisture Management	0	Mole drains will tend to dry the soil profile near surface accentuating any water shortages. Does not affect water use efficiency.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	1	The action decreases runoff and promotes aerobic degradation of pesticide residues. Avoid direct outlet to surface water.
Pesticides in Groundwater	1	The action decreases deep percolation and promotes aerobic degradation of pesticide residues.
Nutrients in Surface water	-4	Water conveyed by these drains can transport dissolved nutrients to surface water.
Nutrients in Groundwater	2	The action collects and removes water and soluble nutrients from the site.
Salts in Surface Water	-2	Infiltrating water and soluble salts are collected and conveyed to an outlet.
Salts in Groundwater	2	Infiltrating water and soluble salts are removed through the drainage system.
Excess Pathogens and Chemicals from Manure, Bio-solic	0	There could be a slight reduction of pathogens in surface waters because runoff will be reduced; however this is expected to be offset by increased pathogen levels in the water from the drains.
Excess Pathogens and Chemicals from Manure, Bio-solic	2	The action will intercept and move Infiltrating water off site or to an outlet.

Excessive Sediment in Surface Water	1	Reduced runoff and erosion will reduce the concern about sediment and turbidity in surface water														
Elevated Water Temperature	0	Water from mole drains will tend to be cooler than that exposed to sunlight, but not appreciably so.														
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable														
Petroleum, Heavy Metals and Other Pollutants Transport	2	The action will intercept and move Infiltrating water off site or to an outlet.														
<u>Air Quality Impacts</u>																
Emissions of Particulate Matter (PM) and PM Precursors	0	Not Applicable														
Emissions of Ozone Precursors	0	Not Applicable														
Emissions of Greenhouse Gases (GHGs)	0	Not Applicable														
Objectionable Odors	0	Not Applicable														
<u>Degraded Plant Condition</u>																
Undesirable Plant Productivity and Health	2	Improved drainage enhances growing environment for non-hydrophytes. If hydrophytes are desired, drainage will increase the problem.														
Inadequate Structure and Composition	0	Not Applicable														
Excessive Plant Pest Pressure	0	Not Applicable														
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable														
<u>Fish and Wildlife - Inadequate Habitat</u>																
Inadequate Habitat - Food	0	Not Applicable														
Inadequate Habitat - Cover/Shelter	0	Not Applicable														
Inadequate Habitat - Water	1	Not Applicable														
Inadequate Habitat - Habitat Continuity (Space)	0	Impact could be negligible to substantial worsening or improvement depending on species of concern.														
<u>Livestock Production Limitation</u>																
Inadequate Feed and Forage	4	Quantity and quality of forage species will be improved if drainage is installed to enhance their production.														
Inadequate Shelter	0	Not Applicable														
Inadequate Water	0	Not Applicable														
<u>Inefficient Energy Use</u>																
Equipment and Facilities	0	Not Applicable														
Farming/Ranching Practices and Field Operations	0	Not Applicable														
		<table border="1"> <thead> <tr> <th colspan="2"><u>CPPE Practice Effects:</u></th> </tr> </thead> <tbody> <tr> <td>5 Substantial Improvement</td> <td>0 No Effect</td> </tr> <tr> <td>4 Moderate to Substantial Improvement</td> <td>-1 Slight Worsening</td> </tr> <tr> <td>3 Moderate Improvement</td> <td>-2 Slight to Moderate Worsening</td> </tr> <tr> <td>2 Slight to Moderate Improvement</td> <td>-3 Moderate Worsening</td> </tr> <tr> <td>1 Slight Improvement</td> <td>-4 Moderate to Substantial Worsening</td> </tr> <tr> <td></td> <td>-5 Substantial Worsening</td> </tr> </tbody> </table>	<u>CPPE Practice Effects:</u>		5 Substantial Improvement	0 No Effect	4 Moderate to Substantial Improvement	-1 Slight Worsening	3 Moderate Improvement	-2 Slight to Moderate Worsening	2 Slight to Moderate Improvement	-3 Moderate Worsening	1 Slight Improvement	-4 Moderate to Substantial Worsening		-5 Substantial Worsening
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