

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Conservation Cover 327

### What is it?

**Conservation Cover** - Perennial vegetation cover that protects soil and water resources on land retired from agricultural production.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Tilt
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

After harvest, a cover crop such as rye, oats or a legume is planted. The cover crop not only reduces erosion, but it also provides organic matter and nutrients, such as nitrogen to the soil. The cover is kept on the ground until the main crop is planted.

### Where it Works Best

Conservation cover works best on land retired from agricultural production, including land entered into retirement programs.

### Benefits

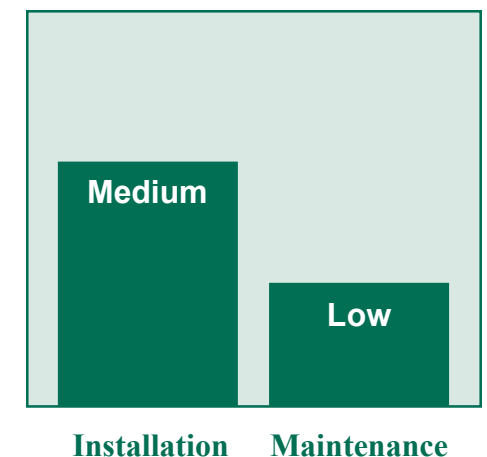
Conservation cover provides the following benefits:

- Reduces soil erosion.
- Reduces nutrients and pesticides in runoff.
- Reduces soil compaction.
- Increases aeration when deep rooted crops are planted.
- Increases organic matter in the soil.
- Stores moisture that is needed for the following crop.
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Conservation Cover - Conservation Practice Standard 327 - will cost approximately \$95 per acre for cool season grasses, \$118 per acre for cool season Garrison grass, and \$145 per acre for warm season grasses without the chemical "Plateau" and \$195 per acre with "Plateau".

The following graphic depicts a relative cost for installing and maintaining the practice. (*Contact your County NRCS office for county specific cost information.*)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Conservation Crop Rotation 328

### What is it?

**Conservation Crop Rotation** - Changing crops year by year in planned sequence.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Tilt
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

A different crop is used in the same field for each new planting. Crop rotation improves crop yields and makes it easier to control insects and weeds. Grass and legumes in a rotation protect water quality by preventing excess nutrients or chemicals from entering surface or groundwater.

### Where it Works Best

Conservation crop rotation works best on land where crops are grown. *(This conservation practice does not apply to pastureland, hayland, orchards, or vineyards.)*

### Benefits

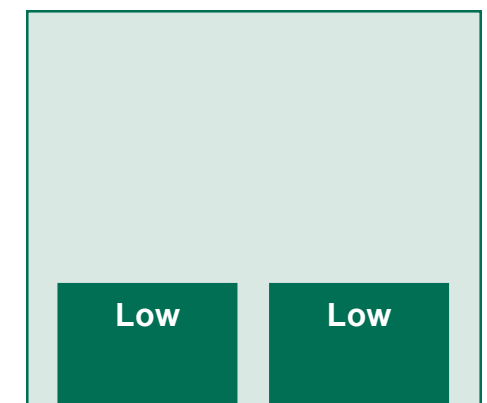
Conservation crop rotation provides the following benefits:

- Reduces soil erosion.
- Improves soil condition.
- Manages deficient/excess nutrients.
- Manages weeds, insects and diseases.
- Reduces pesticide costs by naturally breaking the cycles of weeds, insects and diseases.

### Cost

According to estimates prepared by USDA-NRCS, Conservation Crop Rotation - Conservation Practice Standard 328 - will cost approximately \$5.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Contour Buffer Strips 332

### What is it?

**Contour Buffer Strips** - A series of narrow strips of perennial vegetation alternated with wider cultivated strips that are farmed on the contour (i.e. across the slope).

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Concentrated Flow

#### Soil Condition

- Tilt
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

The alternating strips of grass or other permanent vegetation slows runoff, traps sediment from crop strips above and increases water infiltration. Because the buffer strip is established on the contour, surface runoff flows evenly across the entire surface of the grass strip, reducing sheet and rill erosion.

### Where it Works Best

Contour buffer strips work best on fields with uniform slopes ranging from 4 to 10%. *(This conservation practice does not apply to situations where the width of the buffer strips will be equal to or exceed the width of the adjoining crop strips.)*

### Benefits

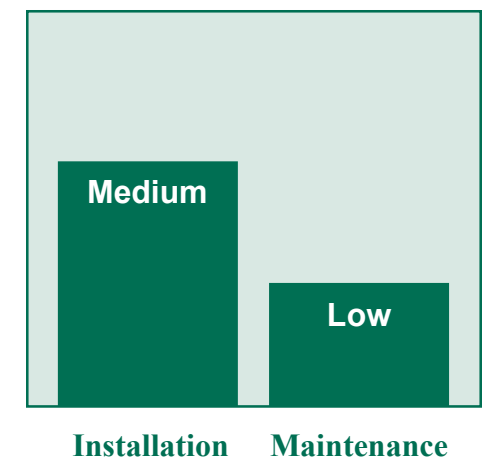
Contour buffer strips provide the following benefits:

- Reduces sediment, nutrients, and pesticides in runoff.
- Increases water infiltration.
- Minimizes gully erosion.
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Contour Buffer Strips - Conservation Practice Standard 332 - will cost approximately \$12.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Contour Farming 330

### What is it?

**Contour Farming** - Farming of sloping land in such a way that preparing, planting and cultivating the land are done on the nearly level contours.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

Planting and cultivating crops across the slope slows water flow, which reduces erosion by creating miniature dams across the slope. In turn, this increases water, nutrient and pesticide infiltration.

### Where it Works Best

Contour farming works best on cropland areas with a uniform slope. It is most effective on slopes of 2 – 10 percent, but can reduce erosion on steeper slopes. *(This conservation practice does not apply to land treated with contour buffer strips, contour stripcropping or field stripcropping.)*

### Benefits

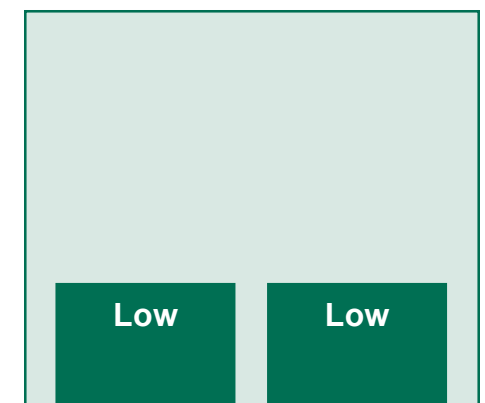
Contour farming provides the following benefits:

- Reduces soil erosion by as much as 50 percent over planting up and down the hill.
- Reduces nutrient and pesticide runoff.
- Improves water quality.
- Requires less fuel than planting up and down the hill.

### Cost

According to estimates prepared by USDA-NRCS, Contour Farming - Conservation Practice Standard 330 - will cost approximately \$12.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Cover and Green Manure Crop 340

### What is it?

**Cover and Green Manure Crop** - A crop of close growing grasses, legumes, forbs, or other herbaceous plants grown for seasonal cover, erosion control and soil improvement. Cover and green manure crops are usually grown for one year or less, except where there is permanent cover as in orchards.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Organic Matter

#### Water Quality

- Surface Water
- Ground Water

### How it Works

Cover and green manure crops are established in between field rows to accommodate the primary crop being grown and on fields during non-cropping periods. They are used to protect the soil surface from erosion by wind and water, filter runoff and increase water infiltration. The taller and denser the crop, the better the degree of protection that will be provided to the soil. Cover crops reduce the destructive nature of rain by intercepting the droplet before it comes in contact with the soil. Cover and green manure crops also add soil nutrients and organic matter.

### Where it Works Best

Cover and green manure crops work best on cropland, orchards, vineyards, small fruit areas and conservation use areas that require vegetative cover for natural resource protection.

### Benefits

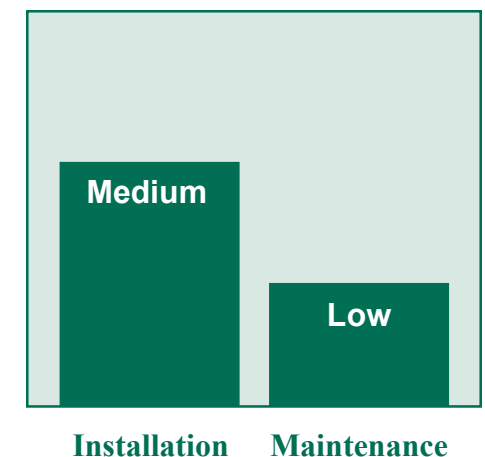
Cover and green manure crops provide the following benefits:

- Reduces erosion from wind and water.
- Increases soil organic matter.
- Reduces nutrient leaching and runoff.
- Reduces pesticide leaching and runoff.
- Promotes biological nitrogen fixation.
- Increases biodiversity.
- Suppress weeds.
- Provides supplemental forage.
- Manages soil moisture.

### Cost

According to estimates prepared by USDA-NRCS, Cover and Green Manure Crop – Conservation Practice Standard 340 – will cost approximately \$15 per acre to establish.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Critical Area Planting 342

### What is it?

**Critical Area Planting** - The planting of grass or other vegetation on highly erodible or critically eroding areas.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow
- Streambank

#### Soil Condition

- Tilt
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water

### How it Works

Grass, legumes, trees or shrubs are established in small, isolated areas of excessive erosion. The vegetation provides surface cover to stop the rain drop splash and slow water flow.

### Where it Works Best

Critical area planting works best on highly erodible or critically eroding areas. Critical area planting also applies to small concentrated flow areas where the drainage area is 5 acres or less and where adequate capacity exists without earthmoving.

### Benefits

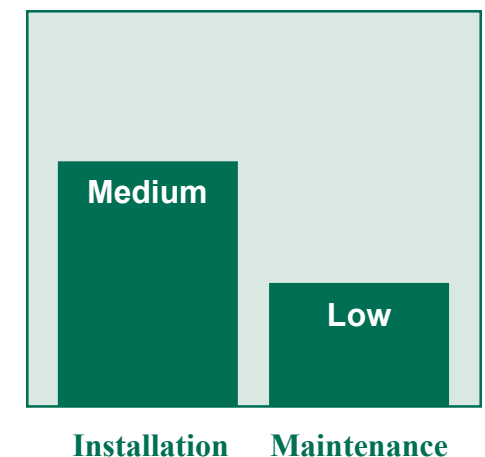
Critical area planting provides the following benefits:

- Stabilizes sheet, rill and gully erosion.
- Minimizes offsite movement of sediment.
- Protects areas such as dams, terrace backslopes or gullies where vegetation may be difficult to establish.

### Cost

According to estimates prepared by USDA-NRCS, Critical Area Planting - Conservation Practice Standard 342 - will cost approximately \$300 per acre (without earthmoving) and \$480 per acre (with earthmoving).

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Diversion 362

### What is it?

**Diversion** - An earthen embankment similar to a terrace that controls water and directs it across the slope.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill

#### Water Quality

- Surface Water

### How it Works

The purpose of a diversion is to direct or divert runoff from an area. It is often built at the base of a slope to divert runoff away from bottom ground. A diversion may also be used to divert runoff away from a feedlot, or to collect and direct water to a pond.

### Where it Works Best

Diversions work best when installed at field edges, especially crop fields. Diversions are most commonly used in conjunction with contour farming, terraces, buffer strips and contour stripcropping systems.

### Benefits

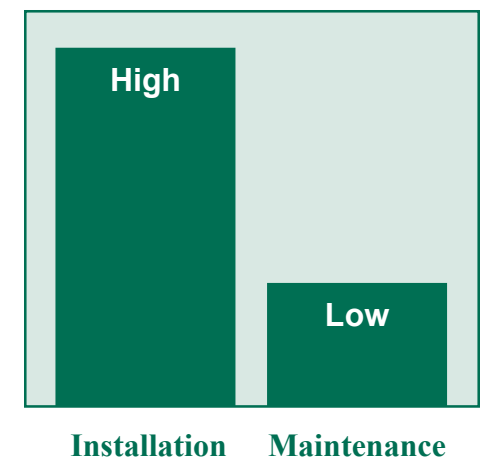
Diversions provide the following benefits:

- Reduces sheet, rill and gully erosion.
- Reduces nutrients and pesticides in runoff.
- Traps sediment.
- Increases infiltration.
- Reduces flooding.
- Improves surface water quality.
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Diversion - Conservation Practice Standard 362 - will cost approximately \$2.50 per foot.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Field Border 386

### What is it?

**Field Border** - A strip of permanent vegetation (grasses or legumes) established at or around the edge of a field. Field borders are often used in place of crop end rows.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Wind

#### Water Quality

- Surface Water
- Ground Water

### How it Works

Strips of perennial vegetation are established at the outside edges of a field where excessive erosion is occurring. The grass or legume strips replace crop end rows, which would be planted along the slope and be highly erosive. The grass or legume strips protect steep field edges from soil erosion and provide turning and travel lanes around the field. This practice provides erosion protection by stabilizing and buffering the field edge(s).

### Where it Works Best

Field borders work best at the edges of cropland fields and to connect other buffer practices within the field. A field border is most commonly used in conjunction with contour farming, terracing, buffer strips, and contour stripcropping systems.

### Benefits

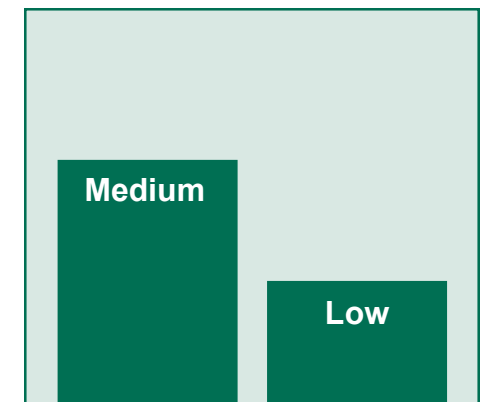
Field borders provide the following benefits:

- Reduces erosion by slowing runoff.
- Filters nutrients runoff.
- Filters pesticide runoff.
- Protects soil quality and water quality.
- Helps to manage harmful insect populations.
- Provides wildlife food and cover.
- Improves the overall appearance of the operation.

### Cost

According to estimates prepared by USDA-NRCS, a Field Border – Conservation Practice Standard 386 – will cost approximately \$95 per acre to establish cool season grasses or legumes, \$195 per acre for warm season grasses with the chemical “Plateau”, and \$145 per acre for warm season grasses without “Plateau”.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Filter Strips 393A

### What is it?

**Filter Strip** - A strip of grass or other permanent vegetation (e.g. trees or shrubs) used to reduce/filter sediment, nutrients, and pesticides in runoff before they reach surface water.

### How it Works

A filter strip slows the velocity of runoff and causes suspended sediment and dissolved nutrients and pesticides to settle and collect in vegetation. Infiltration is increased. Pollutants are taken up by vegetation and filtered runoff proceeds to surface water.

### Benefits

Filter strips provide the following benefits:

- Reduces soil erosion.
- Reduces sediment, nutrients and pesticides in runoff.
- Slows runoff and enhances infiltration.
- Enhances wildlife habitat.
- Enhances farm beauty.

### Cost

According to estimates prepared by USDA – NRCS the construction of a Filter Strip according to Conservation Practice Standard 393 can range from \$100 per acre for cool season grasses (e.g. tall fescue) and legumes to \$150 per acre for warm season grasses (e.g. switch grass).

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Wind
- Streambank

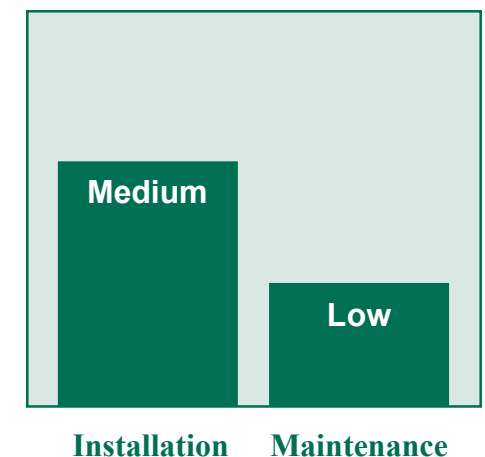
#### Water Quality

- Surface Water
- Groundwater

### Where it Works Best

Filter Strips are most effective when installed on areas with slopes of 5 percent or less. They should be applied in areas where sediment, nutrients and pesticides leave the land and enter surface water. Filter strips are also effective in areas where permanent vegetative establishment is needed to enhance wildlife.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Forest Trails and Landings 655

### What is it?

*Forest Trails and Landings* - A route, travel-way or cleared area within a forest.

### How it Works

Forest trails and landings are configured to minimize adverse onsite and off-site impacts such as accelerated erosion, riparian zone degradation, stream channel and streambank damage, and hydrology modification.

### Benefits

Forest trails and landings provide the following benefits:

- Provides erosion control.
- Reduces soil compaction.
- Improves soil drainage.

### Cost

Due to the high degree variability associated with the use of Forest Trails and Landings – Conservation Practice Standard 655, generalized costs for this practice were not available from USDA-NRCS.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Concentrated Flow

#### Soil Condition

- Infiltration

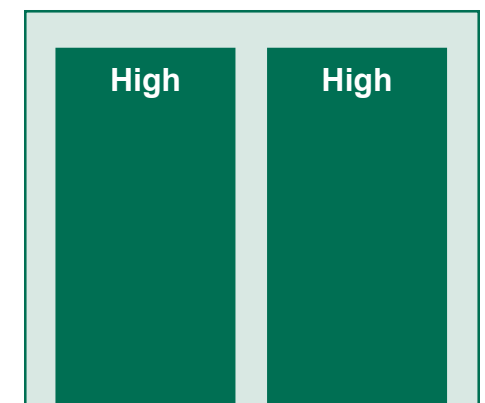
#### Water Quality

- Surface Water

### Where it Works Best

Forest trails and landings work best in heavily forested areas. They provide access to forest stands for management and the removal and collection of forest products.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Forest Site Preparation 490

### What is it?

**Forest Site Preparation** - A practice of treating areas to encourage natural regeneration of desirable trees and shrubs or to accelerate reforestation by providing optimum site conditions for planting or direct seeding of desirable woody species.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

The purpose of this practice is to prepare the land for establishing a stand of desirable woody vegetation by controlling undesirable vegetation, removing slash and debris, or altering site conditions. It works by providing a good supply of seeds or seedlings, a suitable seedbed, and minimum competition from undesirable vegetation.

### Where it Works Best

Forest site preparation works best in understocked (thin tree stand) areas, areas planned for tree planting following harvest, areas where a land cover change to forest is desired, or areas having undesirable vegetation that inhibits or competes with preferred woody species.

### Benefits

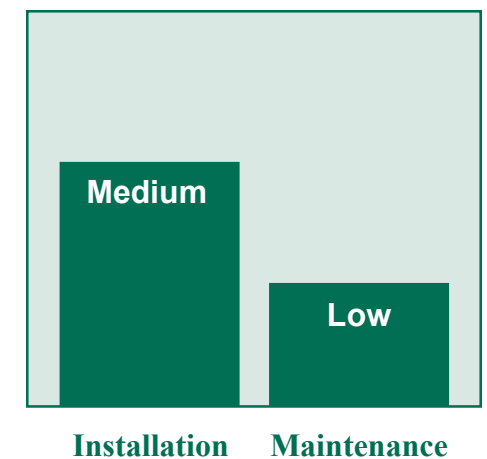
Forest site preparation provides the following benefits:

- Reduces soil erosion.
- Conserves water.
- Improves water quality.
- Produces a wood crop.

### Cost

According to estimates prepared by USDA-NRCS, Forest Site Preparation – Conservation Practice Standard 490 – will cost approximately \$120 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Grade Stabilization Structure 410

### What is it?

**Grade Stabilization Structure** - Structure used to control the grade and head cutting in natural or artificial channels. There are four basic types of structures: Embankment Structure, Full Flow Open Structure, Island-Type Structure and Side Inlet Drainage Structure.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Streambank

#### Water Quality

- Surface Water

### How it Works

Grade stabilization structures are installed to stabilize the channel grade and control erosion to prevent the formation or advance of gullies and headcuts. The practice is not designed to regulate flow or water levels in a channel. An intensive site investigation is required to plan and design an appropriate type of grade stabilization structure for a specific site.

### Where it Works Best

Grade stabilization structures work best in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Grade stabilization structures are located so that the elevation of the inlet of the spillway is set at an elevation that will control upstream headcutting.

### Benefits

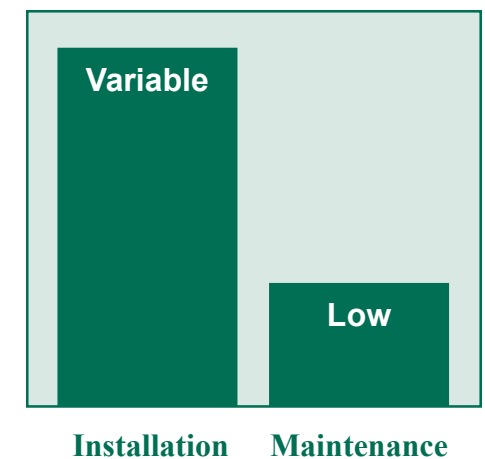
Grade stabilization structures provide the following benefits:

- Stabilizes the grade and controls erosion in natural or artificial channels.
- Prevents the formation or advance of gullies.
- Enhances environmental quality and reduces pollution hazards.
- Enhances fish and wildlife habitat.

### Cost

According to estimates prepared by USDA-NRCS, a Grade Stabilization Structure – Conservation Practice Standard 410 – will vary in cost from \$400 to \$5,400 (each) depending on the type of structure and the materials used in construction.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Grassed Waterway 412

### What is it?

Shaping and establishing grass in a natural drainageway to prevent gully erosion. A grassed waterway is shaped and graded to carry surface water at a non-erosive velocity to a stable outlet that spreads the flow of water before it enters a vegetated filter strip.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

A natural or constructed drainageway is graded and shaped to form a smooth, bowl shaped channel. This area is seeded to sod-forming grasses. Runoff flows down the grassed waterway and across the grass rather than tearing away soil and forming a larger gully. A stable outlet is often installed at the base of the grassed waterway to slow and spread the flow and to prevent a new gully from forming.

### Where it Works Best

Grassed waterways work best in natural or constructed channels where water concentrates and gully erosion is a problem.

### Benefits

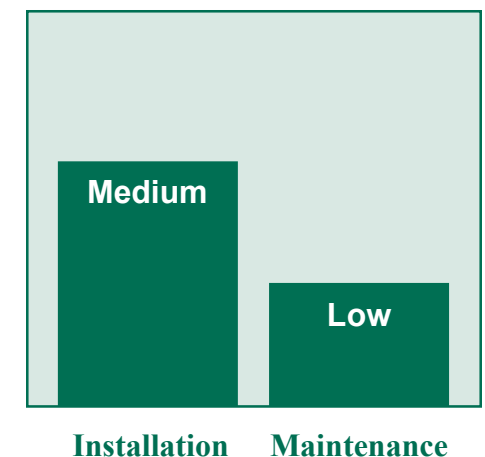
Grassed waterways provide the following benefits:

- Reduces gully erosion.
- Slows runoff and traps sediment.
- Reduces nutrient and pesticide runoff
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Grassed Waterway - Conservation Practice Standard 412 - will cost approximately \$1.60 per lineal foot (< 30 feet wide with no tile), \$2.20 per lineal foot (30 – 40 feet wide with no tile) and \$2.80 per lineal foot (> 40 feet wide with no tile).

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Heavy Use Area Protection 561

### What is it?

**Heavy Use Area Protection** - Protecting heavily used areas by establishing vegetative cover, surfacing with suitable materials, or installing needed structures.

### How it Works

The prescribed surface treatment is designed to accommodate the specific type of traffic that is expected to occur. Surface treatment may involve pavement for vehicle traffic or vegetation and/or geo-textile materials for people and animal traffic. Impermeable surfaces such as pavement increase runoff. Therefore, provisions for drainage should always be considered when planning this practice. Selected vegetative species should be able to tolerate and persist under heavy use conditions. If practical, consider increasing the size of the area and/or establishing a non-use (rest) period to allow plant recovery.

### Where it Works Best

Heavy use area protection is a practice used primarily in urban areas and on recreational land. However, the practice may be used on any land area frequently and intensively used by people, animals or vehicles.

### Cost

According to estimates prepared by USDA-NRCS, Heavy Use Area Protection – Conservation Practice Standard 561 – will cost approximately \$1.50 per square foot for a gravel pad surface and \$3 per square foot for a concrete pad surface.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Water Quality

- Surface Water

### Benefits

Heavy use area protection provides the following benefits:

- Reduces soil erosion.
- Improves water quality.
- Improves aesthetics.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Livestock Use Area Protection 757i

### What is it?

**Livestock Use Area Protection** - Protection of areas used for livestock production (e.g. feeding, watering, loafing, exercising or confinement) by surfacing with suitable materials and installing control structures.

### How it Works

This practice protects soil and water quality and stabilizes pastures, feeding areas, loafing areas, exercise corrals, livestock traffic lanes or facility areas frequently or intensely used by livestock.

### Benefits

Livestock use area protection provides the following benefits:

- Protects surface water quality.
- Provides easier access for feeding and watering.
- Reduces soil erosion.
- Beautifies areas of livestock production.

### Cost

According to estimates prepared by USDA-NRCS, Livestock Use Area Protection - Conservation Practice Standard 757i - will cost approximately \$1.00 per square foot (gravel) and \$1.50 per square foot (concrete).

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Streambank

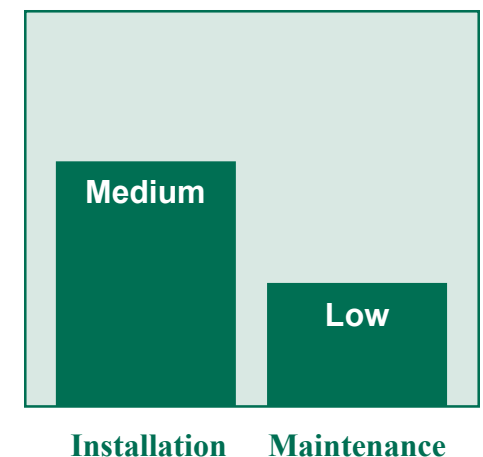
#### Water Quality

- Surface Water

### Where it Works Best

Livestock use area protection works best on areas where soil requires special protection from compaction, erosion or other deterioration caused by livestock use.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Mulching 484

### What is it?

**Mulching** - Applying plant residues, by-products or other suitable materials produced off-site, to the land surface.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Tillth

#### Water Quality

- Surface Water
- Ground Water

### How it Works

The selection of mulching materials will depend primarily on site conditions and the material's availability. They might consist of natural and/or artificial materials such as plant residue, wood bark or chips, by-products, animal manure, or other materials of sufficient dimension (depth and thickness) and durability to achieve the intended purpose for the required time period. Mulching is generally performed after grading, soil surface preparation and seeding and plantings are complete.

### Where it Works Best

Mulching works best on soils subject to erosion on which low residue producing crops are grown, on critical areas, on soils that have a low infiltration rate, where needed for control of weeds, and where needed to establish seedlings, trees and shrubs.

### Benefits

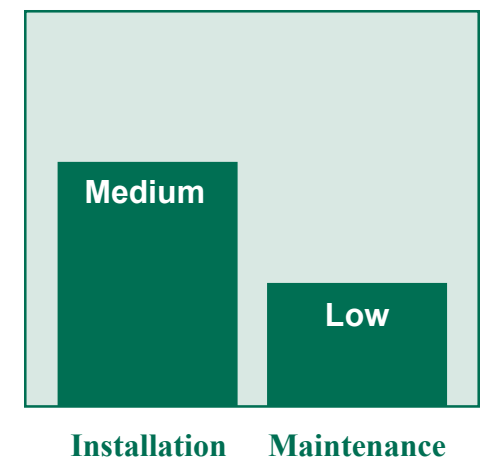
Mulching provides the following benefits:

- Provides erosion control.
- Conserves soil moisture.
- Improves soil condition and increases soil fertility.
- Controls weeds.
- Conserves soil temperature.
- Help establish plant cover.

### Cost

Due to the high degree variability associated with the use of Mulching – Conservation Practice Standard 484, generalized costs for this practice were not available from USDA-NRCS.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)





## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Pasture and Hayland Planting 512

### What is it?

*Pasture and Hayland Planting* - Planting of grass and legumes to reduce soil erosion and improve production.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water

### How it Works

Grass and/or legumes are drilled or broadcast into low-producing pastures or steep, eroding fields. The enhanced vegetation slows water flow, increases infiltration, improves forage production and provides wildlife habitat.

### Where it Works Best

Pasture and hayland planting works best on existing pasture and hayland or on land that is converted from other uses.

### Benefits

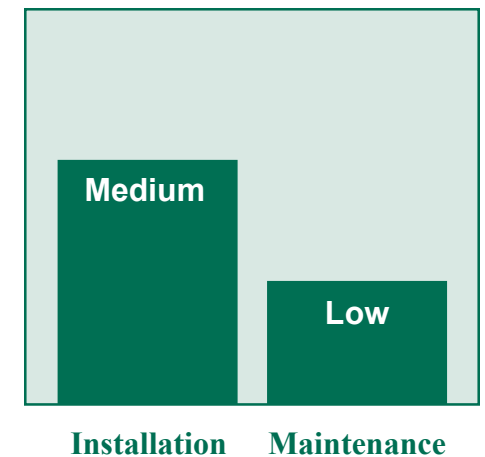
Pasture and hayland planting provides the following benefits:

- Reduces soil erosion.
- Filters runoff.
- Increases infiltration.
- Improves forage production.
- Improves soil organic matter.

### Cost

According to estimates prepared by USDA-NRCS, Pasture and Hayland Planting - Conservation Practice Standard 512 - will cost approximately \$95 per acre for cool season grasses, \$145 per acre for warm season grasses without the chemical "Plateau" and \$195 per acre for warm season grasses with the chemical "Plateau".

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

# Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Prescribed Grazing 528A

### What is it?

**Prescribed Grazing** - Planting forage and using grazing rotations to maximize production and reduce sediment and nutrient runoff.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Condition

- Tilt
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

Pasture is divided into two or more pastures or paddocks with fencing. Cattle are moved from paddock to paddock on a pre-planned schedule based on forage availability and livestock nutritional needs.

### Where it Works Best

Prescribed grazing works best where there is a need to maximize forage and grazing efficiency throughout the growing season. There should be enough water of good quality available in all pastures to meet the needs of the livestock.

### Benefits

Prescribed grazing provides the following benefits:

- Improves vegetative cover.
- Reduces soil erosion.
- Increases harvest efficiency.
- Protects surface and groundwater quality.
- Evenly distributes manure nutrient resources.
- Provides fertility for crop production.
- Improves soil condition.

### Cost

According to estimates prepared by USDA-NRCS, Prescribed Grazing - Conservation Practice Standard 528A - will cost approximately \$15 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

# Conservation Practice

## Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

# Residue Management No Till & Strip Till 329A

### What is it?

**Residue Management - No Till and Strip Till** - Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round, while growing crops in narrow slots or tilled strips in previously untilled soil and residue. This practice includes tillage and planting methods commonly referred to as no till, zero till, slot planting, row till, zone till, strip till or aerial-broadcast seeding.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

Leaving last year's crop residue on the surface before and during planting operations provides cover for the soil at a critical time of the year. The residue is left on the surface by eliminating or minimizing tillage operation and turning the soil less. Pieces of crop residue shield soil particles from rain and wind until plants can produce a protective canopy.

### Where it Works Best

Residue management - no till and strip till works best on cropland where annual and perennial crops are grown.

### Benefits

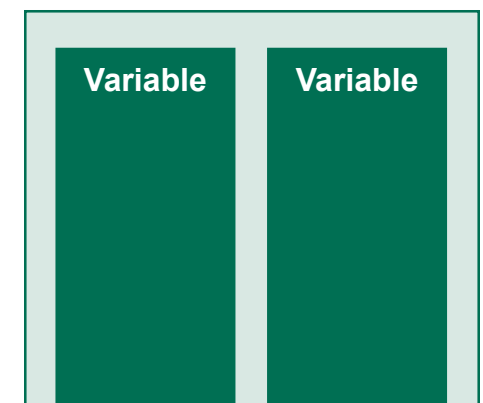
Residue management - no till and strip till provides the following benefits:

- Reduces soil erosion.
- Maintains or improves soil organic matter and tilth.
- Conserves soil moisture.
- Reduces soil compaction.
- Reduces nutrients and pesticides in surface and groundwater.

### Cost

According to estimates prepared by USDA-NRCS, Residue Management – No Till and Strip Till - Conservation Practice Standard 329A - will cost approximately \$8.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

# Conservation Practice

## Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

# Residue Management Mulch Till 329B

### What is it?

**Residue Management - Mulch Till** - Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round, while growing crops where the entire field surface is tilled prior to planting. This practice is referred to as mulch tillage or chiseling and disking.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

Leaving last year's crop residue on the surface before and during planting operations provides cover for the soil at a critical time of the year. The residue is left on the surface by reducing tillage operation and turning the soil less. Pieces of crop residue shield soil particles from rain and wind until plants can produce a protective canopy.

### Where it Works Best

Residue management - mulch till works best on cropland where annual and perennial crops are grown.

### Benefits

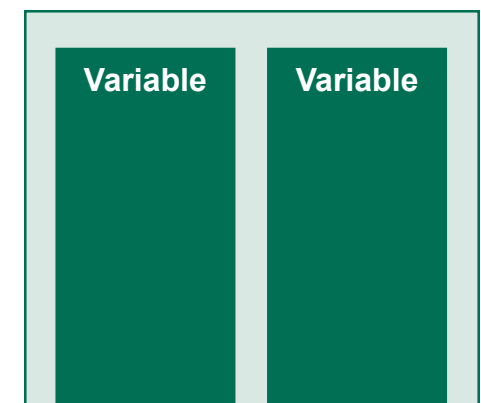
Residue management - mulch till provides the following benefits:

- Reduces soil erosion.
- Maintains or improves soil organic matter and tilth.
- Conserves soil moisture.
- Reduces soil compaction.
- Reduces nutrients and pesticides in surface water and groundwater.

### Cost

According to estimates prepared by USDA-NRCS, Residue Management – Mulch Till - Conservation Practice Standard 329B - will cost approximately \$8.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

# Conservation Practice

## Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

# Residue Management Ridge Till 329C

### What is it?

**Residue Management - Ridge Till** - Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round, while growing crops on pre-formed ridges alternated with furrows protected by crop residue. This practice includes tillage and planting techniques commonly referred to as ridge till or ridge planting.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water
- Groundwater

### How it Works

Leaving last year's crop residue on the surface before and during planting operations provides cover for the soil at a critical time of the year. The residue is left on the surface by reducing tillage operation and turning the soil less. Pieces of crop residue shield soil particles from rain and wind until plants can produce a protective canopy.

### Where it Works Best

Residue management - ridge till works best on cropland where annual and perennial crops are grown.

### Benefits

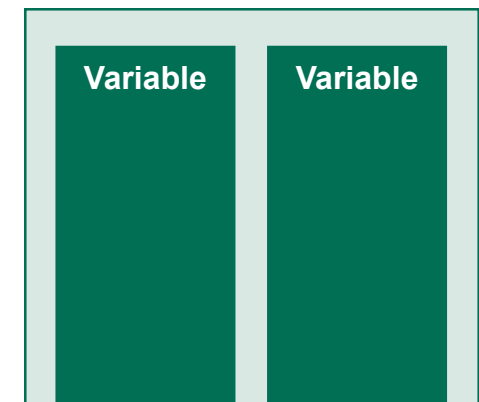
Residue management - ridge till provides the following benefits:

- Reduces soil erosion.
- Maintains or improves soil organic matter and tilth.
- Conserves soil moisture.
- Reduces soil compaction.
- Allows water, nutrients and pesticides to infiltrate the soil, which reduces surface runoff.

### Cost

According to estimates prepared by USDA-NRCS, Residue Management – Ridge Till - Conservation Practice Standard 329C - will cost approximately \$8.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Residue Management Seasonal 344

### What is it?

**Residue Management - Seasonal** - Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface during part of the year, while growing crops in a clean tilled seedbed. This practice includes residue management techniques carried out during part of the year from harvest until residue is buried by tillage for seedbed preparation.

### How it Works

Leaving last year's crop residue on the surface before and during planting operations provides cover for the soil at a critical time of the year. The residue is left on the surface by reducing tillage operation and turning the soil less. Pieces of crop residue shield soil particles from rain and wind until plants can produce a protective canopy.

### Benefits

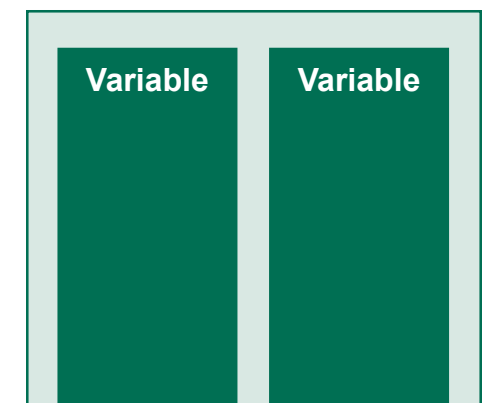
Residue management - seasonal provides the following benefits:

- Reduces soil erosion.
- Conserves soil moisture.
- Provides food and escape cover for wildlife.
- Reduces nutrients and pesticides in surface and groundwater.

### Cost

According to estimates prepared by USDA-NRCS, Residue Management – Seasonal - Conservation Practice Standard 344 - will cost approximately \$5.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind

### Where it Works Best

Residue management - seasonal works best on cropland where annual and perennial crops are grown.

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Restoration and Management of Declining Habitats - 643

### What is it?

*Restoration and Management of Declining Habitats* - Restoring and conserving rare or declining native vegetation and associated wildlife species.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

All habitat manipulations will be planned and managed according to soil capabilities and recommendations for management will avoid excessive soil loss. Vegetative manipulations to restore plant and/or animal diversity can be accomplished by prescribed burning, mowing, grazing or applying herbicides.

### Where it Works Best

This practice applies to areas which once supported or currently support the habitat to be restored or managed.

### Benefits

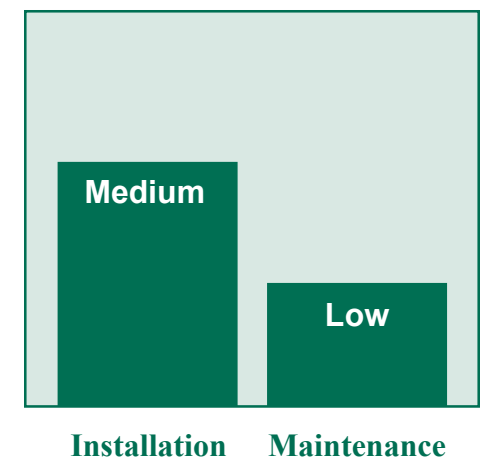
Restoration and management of declining habitats provide the following benefits:

- Protects soil from erosion.
- Restores land or aquatic habitats degraded by human activity.
- Provides habitat for rare and declining wildlife species.
- Increases native plant diversity.

### Cost

Due to the high degree variability associated with the use of Restoration and Management of Declining Habitats – Conservation Practice Standard 643, generalized costs for this practice were not available from USDA-NRCS.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Riparian Forest Buffer 391

### What is it?

**Riparian Forest Buffer** - An area of trees and/or shrubs located adjacent to streams, lakes, ponds and wetland.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Wind
- Streambank

#### Water Quality

- Surface Water
- Groundwater

### How it Works

A riparian forest buffer creates shade and lowers water temperatures, which improves habitat for fish and other aquatic organisms. The vegetative growth also provides a source of large woody debris (cover) and small organic particles (food) for fish and aquatic insects as well as habitat and corridors for wildlife. This practice reduces sediment, nutrients and pesticides in surface runoff and reduces nutrients and pesticides in shallow groundwater flow.

### Where it Works Best

Riparian forest buffers work best on areas adjacent to streams, lakes, ponds, wetlands, and areas with groundwater recharge.

### Benefits

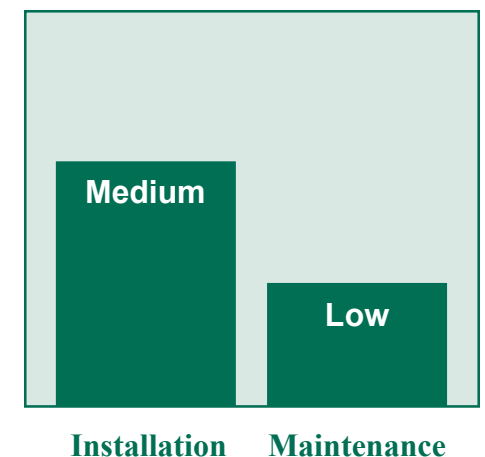
Riparian forest buffers provide the following benefits:

- Reduces soil erosion.
- Filters runoff.
- Increases infiltration.
- Provides food and cover for fish and wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Riparian Forest Buffer - Conservation Practice Standard 391 - will cost approximately \$400 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)





## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Sediment Basin 350

### What is it?

**Sediment Basin** - A basin constructed to collect and store debris or sediment.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

Sediment basins trap and store sediment. In doing so, they prevent excessive soil deposition in bottom lands and help to preserve the capacity of reservoirs, ditches, canals, diversions, waterways, and streams. Sediment basins are flow through type structures and are designed to detain, not store, runoff. Therefore, they will not decrease the amount of surface runoff water delivered downstream. They will however, delay the time it takes runoff to reach downstream areas. There may be an increased recharge to groundwater, depending on the time of detention, the permeability of the bottom of the basin, and the age of the structure.

### Where it Works Best

Sediment basins work best in areas where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion control measures. Many times sediment basins offer the most practical solution to the problem. They are often installed on construction or mining sites to protect the soil resource until vegetation can be established.

### Benefits

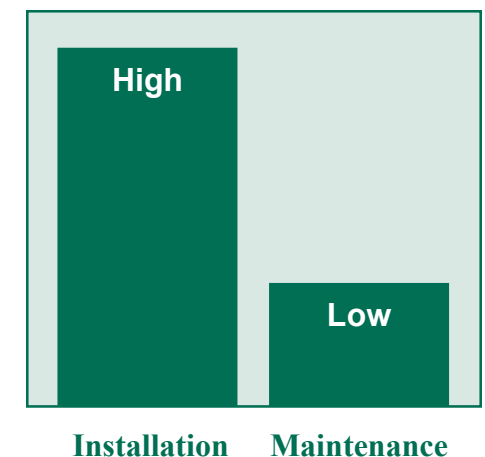
Sediment basins provide the following benefits:

- Prevents undesirable soil deposition.
- Traps sediment.
- Reduces or abates water pollution by providing areas for the deposition and storage of silt, sand or gravel.

### Cost

According to estimates prepared by USDA-NRCS, a Sediment Basin – Conservation Practice Standard 350 – will cost approximately \$5,000 (each) to install.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Streambank and Shoreline Protection 580

### What is it?

**Streambank and Shoreline Protection** - Vegetative or structural treatment(s) used to stabilize and protect banks of streams, or constructed channels and shorelines of lakes or reservoirs against scour and erosion.

### How it Works

Streambank and shoreline protection works by applying natural (vegetation) or engineered (rip-rap) techniques to stabilize and protect at-risk areas.

### Benefits

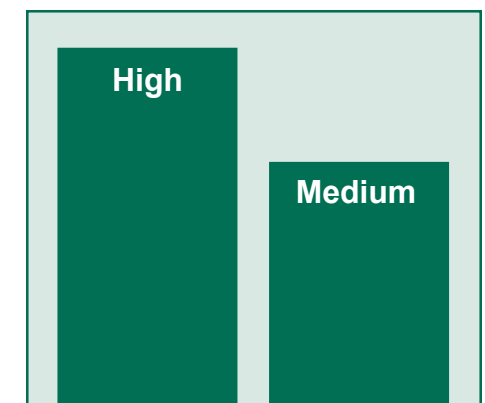
Streambank and shoreline protection provides the following benefits:

- Prevents the loss of land or damage to land uses.
- Maintains the capacity of the channel.
- Reduces sediment loads downstream.
- Enhances the stream corridor for fish and wildlife habitat.

### Cost

According to estimates prepared by USDA-NRCS, Streambank and Shoreline Protection – Conservation Practice Standard 580 – will cost approximately \$20 per linear foot for riprap or bioengineering treatment and \$600 per acre for seeding establishment only.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Streambank

#### Water Quality

- Surface Water

### Where it Works Best

Streambank and shoreline protection works best on streambanks of natural or constructed channels and shorelines of lakes and reservoirs that are susceptible to erosion from the action of water or to damage from livestock or vehicles. It also applies to controlling erosion on shorelines where the problem can be solved with relatively simple structural measures or vegetation.

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Stripcropping Contour 585

### What is it?

**Contour Stripcropping** - Growing crops in a systematic arrangement of strips or bands on the contour to reduce soil erosion.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

Crops are arranged so that a strip of meadow or small grain is alternated with a strip of row crop. Meadow slows runoff, increases infiltration, traps sediment and provides surface cover. This practice combines the beneficial effects of contouring and crop rotation.

### Where it Works Best

Contour stripcropping works best on sloping cropland.

### Benefits

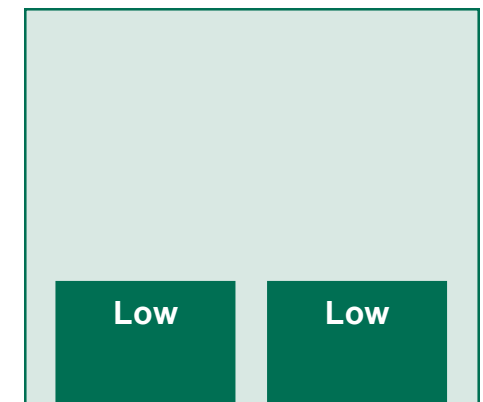
Contour stripcropping provides the following benefits:

- Reduces soil erosion.
- Reduces nutrient and pesticide runoff.
- Controls pests by breaking the cycle of weeds, diseases and insects.
- Improves soil quality by increasing organic matter from grassed areas.
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Contour Stripcropping - Conservation Practice Standard 585 - will cost approximately \$15.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Stripcropping Field 586

### What is it?

**Field Stripcropping** - Growing crops in a systematic arrangement of strips or bands across the general slope (not on contour) to reduce erosion from water flow.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Wind
- Concentrated Flow

#### Soil Condition

- Tilth
- Crusting
- Infiltration
- Organic Matter

#### Water Quality

- Surface Water

### How it Works

Crops are arranged so that a strip of grass or close-growing crop is alternated with a strip of clean tilled crop or fallow or a strip of small grain is alternated with a strip of a tilled annual crop or fallow.

### Where it Works Best

Field stripcropping works best on sloping cropland where contour stripcropping is not practical due to the difficulty in maintaining parallel strip boundaries across the slope.

### Benefits

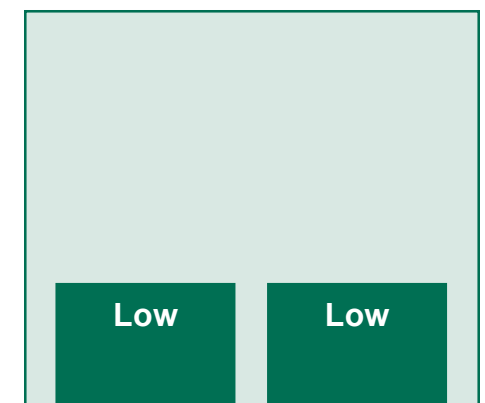
Field stripcropping provides the following benefits:

- Reduces soil erosion.
- Reduces runoff.
- Reduces transport of sediment, nutrients and pesticides down-slope.
- Provides food and cover for wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Field Stripcropping - Conservation Practice Standard 586 - will cost approximately \$10.00 per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Subsurface Drain 606

### What is it?

**Subsurface Drain** - A conduit, such as corrugated plastic tubing, tile or pipe installed beneath the ground surface to collect and/or convey drainage water.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill

#### Water Quality

- Surface Water

### How it Works

A subsurface drain improves the soil environment for vegetative growth and reduces erosion by regulating water table and groundwater flows, intercepting and preventing water movement into a wet area, relieving artesian pressures, removing surface runoff, and serving as an outlet for other subsurface drains.

### Where it Works Best

Subsurface drains work best on areas having a high water table where the benefits of lowering the water table or controlling ground water or surface runoff are worth the expense of installing the practice. Subsurface drains also work on areas that will benefit from controlling groundwater and/or surface runoff. The soil must meet certain suitability requirements and an adequate outlet must be available to assure the drain will function properly.

### Benefits

Subsurface drains provide the following benefits:

- Improves vegetative growth.
- Reduces soil erosion.
- Improves water quality.
- Collects ground water.
- Removes water from heavy use areas.

### Cost

According to estimates prepared by USDA-NRCS, a Subsurface Drain – Conservation Practice Standard 606 – will cost approximately \$0.80 per foot for 4” tile, \$1.40 per foot for 6” tile, \$2 per foot for 8” tile, \$3.50 per foot for 10” tile and \$4 per foot for 12” tile to install.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Surface Drainage Field Ditch 607

### What is it?

**Surface Drainage - Field Ditch** - A graded ditch installed for collecting excess water in a field.

### How it Works

Drainage field ditches are integral parts of a larger drainage system. They drain surface depressions, collect or intercept excess surface water, such as sheet flow or channel flow, and carry it to an outlet with continuity and without ponding.

### Benefits

Surface drains provide the following benefits:

- Reduces soil erosion.
- Removes excess surface water.

### Cost

Due to the high degree variability associated with the use of Surface Drainage – Field Ditch – Conservation Practice Standard 607, generalized costs for this practice were not available from USDA-NRCS.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

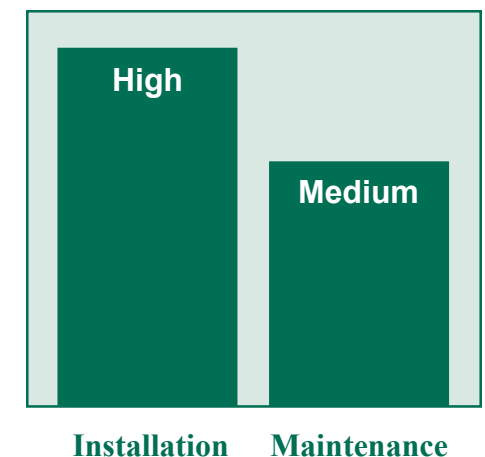
#### Soil Erosion

- Concentrated Flow

### Where it Works Best

Surface drainage field ditches work best on flat or nearly flat areas that have slowly permeable soils and surface depressions or barriers that trap rainfall and prevent natural surface drainage. These areas also receive offsite runoff, require control of the water table and have adequate outlets for drainage water. This practice applies to small drainage ditches within a field. It does not apply to main or lateral ditches or grassed waterways or outlets.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Surface Drainage Main or Lateral 608

### What is it?

*Surface Drainage - Main or Lateral* - An open drainage ditch constructed to a designed size and grade.

### How it Works

Surface drainage mains or laterals work by intercepting excess surface and subsurface water and conveying it to an outlet by either gravity or pumping.

### Benefits

Surface drains provide the following benefits:

- Reduces soil erosion.
- Removes excess surface and subsurface water.

### Cost

Due to the high degree variability associated with the use of Surface Drain – Main or Lateral – Conservation Practice Standard 608, generalized costs for this practice were not available from USDA-NRCS.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

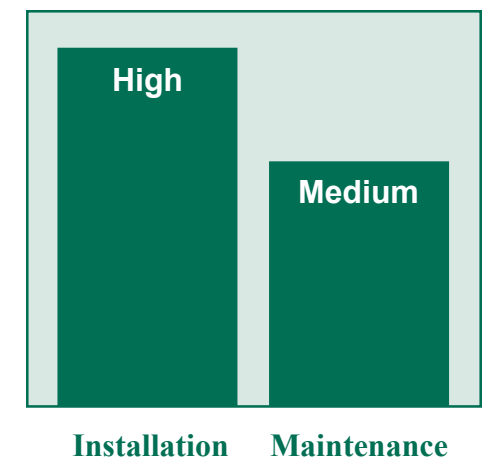
#### Soil Erosion

- Concentrated Flow

### Where it Works Best

Surface drainage mains or laterals work best in agricultural areas having a high water table where the benefits of lowering the water table or controlling ground water outweigh the costs. These areas must have an outlet for the drainage water by either gravity or pumping.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Terrace 600

### What is it?

**Terrace** - An earthen embankment, channel or combination ridge and channel constructed across the slope to intercept runoff.

### How it Works

This practice reduces slope length for erosion control. Four types of terraces include **broad-based** which are farmed on both sides and used on more uniform gently sloping fields, **flat channel** which are used to conserve moisture, **steep backslope** which result in a benching effect and **narrow based** which are planted with permanent cover on both sides of the ridge.

### Where it Works Best

Terraces work best when applied to cropland where soil erosion and runoff are problems and there is a need to conserve water. They may also be used on other areas such as wildlife areas or recreational lands.

### Cost

According to estimates prepared by USDA-NRCS, a Terrace – Conservation Practice Standard 600 – will cost approximately \$2 per linear foot to install.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Concentrated Flow

#### Water Quality

- Surface Water

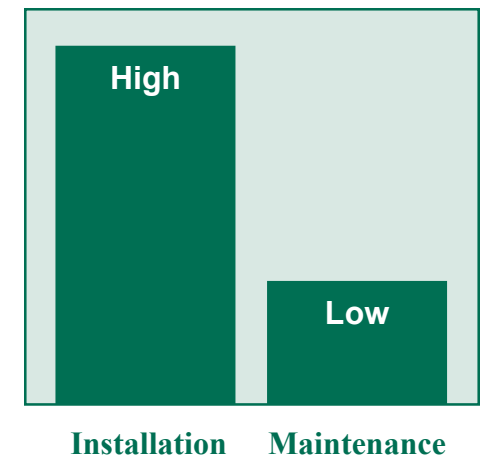
Terraces may be parallel on fairly uniform terrain or vary from parallel when the terrain is undulating. Since parallel channels are more acceptable, designs often provide for cuts and fills to improve terrace alignment and farmability. Channel grades may be uniform or variable as long as the water velocity is non-erosive. The runoff from terraces may be handled by grassed waterways or underground pipe outlets. Soil infiltration may also be used for disposal of runoff when level terraces are installed and the soil is sufficiently permeable.

### Benefits

Terraces provide the following benefits:

- Reduces soil erosion.
- Retains runoff for water conservation.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)





## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Tree and Shrub Establishment 612

### What is it?

**Tree and Shrub Establishment** - A practice of establishing woody plants by planting seedlings or cuttings, direct seeding or natural regeneration.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill Erosion
- Wind
- Concentrated Flow

#### Water Quality

- Surface Water
- Ground Water

### How it Works

Careful consideration should be given to site adaptation and the suitability of the selected species for the planned purpose and available space for growth. When underplanting, trees should be planted sufficiently in advance of overstory removal to ensure full establishment. Mixed species plantings and stand diversity should be encouraged by including hardwoods, conifer and shrubs. Monocultures should be avoided. Tree/shrub arrangement and spacing should allow for and anticipate the need for future access lanes for purposes of stand management.

### Where it Works Best

Tree and shrub establishment can be applied to any area where woody plants can be grown. It is best to use locally adapted seed, seedlings or cuttings when possible.

### Benefits

Tree and shrub establishment provide the following benefits:

- Provides forest products.
- Provides wildlife habitat.
- Reduces soil erosion.
- Improves water quality.
- Reduces air pollution.
- Sequesters carbon.

### Cost

According to estimates prepared by USDA-NRCS, Tree and Shrub Establishment – Conservation Practice Standard 612 – can cost approximately \$250 per acre for just planting costs (free trees), \$460 per acre for shrubs, \$460 per acre for conifer or softwood deciduous trees and \$660 per acre for hardwood trees.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Use Exclusion 472

### What is it?

**Use Exclusion** - A physical barrier designed to exclude animals, people or vehicles from an area.

### How it Works

Use exclusion barriers are usually fences, but they may also be natural or artificial structure such as logs, boulders or earth fill.

### Benefits

Use exclusion provides the following benefits:

- Prevents, restricts, or controls access to an area.
- Maintains or improves the quantity or quality of natural resources such as vegetation and surface water.
- Minimizes liability and human health concerns.

### Cost

According to estimates prepared by USDA-NRCS, Use Exclusion – Conservation Practice Standard 472 – will cost \$200 per 1,000 linear feet. This cost is the same whether the use exclusion is for a streambank or woodlot.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



Installation Maintenance

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Sheet and Rill
- Streambank

#### Water Quality

- Surface Water

### Where it Works Best

Use exclusion works best on those areas of an agricultural operation where a permanent or temporary exclusion is needed to establish or maintain vegetation. This is typically along a streambank or in a woodlot.

## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Water and Sediment Control Basin 638

### What is it?

**Water and Sediment Control Basin** - An earthen embankment or combination ridge and channel constructed across the slope and minor water courses to form a sediment trap and a water detention basin.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Concentrated Flow

#### Water Quality

- Surface Water

### How it Works

This practice improves the farmability of sloping land, reduces erosion, traps sediment, reduces and manages runoff, and improves water quality. Sheet and rill erosion may continue to be a problem following installation of a Water and Sediment Control Basin (WASCOB). For this reason, additional practices, such as crop rotation and residue management, are commonly used to reduce erosion on sloping upland areas of fields. On fields where contouring is not practical, fields are often farmed across the slope to help reduce the velocity of runoff. WASCOBs are generally spaced at terrace intervals.

### Where it Works Best

A WASCOB is generally installed on land that is relatively steep and undulating and past erosion has caused channels to form that have permanently altered the terrain. Therefore, contour farming, stripcropping, terraces and other practices based on contouring may not be acceptable on fields where this practice is used. In addition, this practice applies to areas where the topography is generally irregular, relatively steep, prone to gully erosion and has adequate outlets.

### Benefits

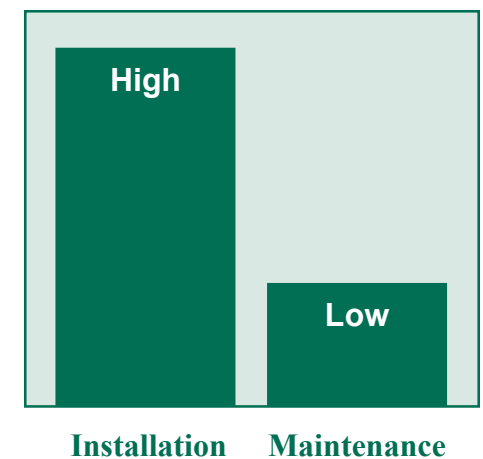
Water and Sediment Control Basins provide the following benefits:

- Reduces soil erosion.
- Improves farmability of sloping land.
- Traps sediment.
- Reduces runoff.
- Improves water quality.

### Cost

According to estimates prepared by USDA-NRCS, a Water and Sediment Control Basin – Conservation Practice Standard 638 – will cost approximately \$3,000 (each) to install.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Wetland Creation 658

### What is it?

**Wetland Creation** - The construction of a marsh-like area with saturated soils and water-loving plants.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Water Quality

- Surface Water
- Groundwater

### How it Works

A wetland may have standing water year-round or may hold surface water for only part of the year. Wetlands collect sediment and filters nutrients and pesticides from runoff. Wetlands also provide food and cover for all types of wildlife.

### Where it Works Best

Wetland creation works best on sites that have soils capable of storing water for the development of a wetland.

### Benefits

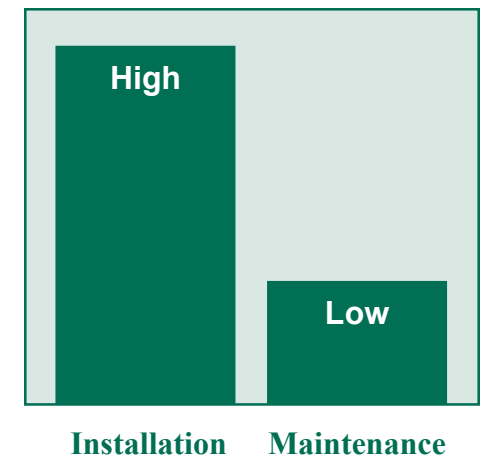
Wetland creation provides the following benefits:

- Traps sediment, nutrients, and pesticides.
- Denitrifies nitrogen-laden drainage water before it enters a stream.
- Filters runoff.
- Reduces flooding downstream.
- Recharges groundwater.
- Provides food and cover for both aquatic species and wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Wetland Creation - Conservation Practice Standard 658 will cost approximately \$400 per acre for trees and \$2 per cubic yard for excavation.

The following graphic depicts a relative cost for installing and maintaining the practice. *(Contact your County NRCS office for county specific cost information.)*



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Wetland Restoration 657

### What is it?

**Wetland Restoration** - The restoration of a marsh-like area with saturated soils and water-loving plants.

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Water Quality

- Surface Water
- Groundwater

### How it Works

A wetland may have standing water year-round or may hold surface water for only part of the year. Wetlands collect sediment and filters nutrients and pesticides from runoff. Wetlands also provide food and cover for all types of wildlife.

### Where it Works Best

Wetland restoration works best on sites where natural wetlands have been altered.

### Benefits

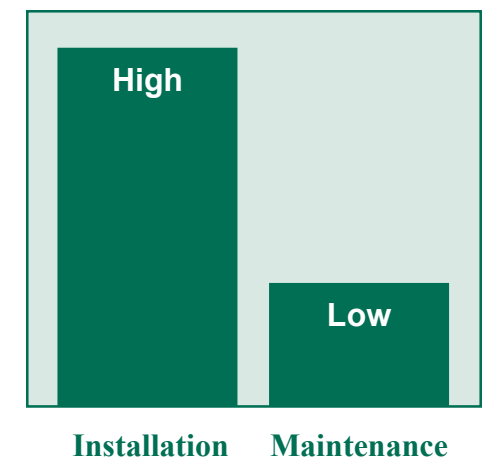
Wetland restoration provides the following benefits:

- Traps sediment, nutrients, and pesticides.
- Denitrifies nitrogen-laden drainage water before it enters a stream.
- Filters runoff.
- Reduces flooding downstream.
- Recharges groundwater.
- Provides food and cover for both aquatic species and wildlife.

### Cost

According to estimates prepared by USDA-NRCS, Wetland Restoration – Conservation Practice Standard 657 will cost approximately \$400 per acre for trees and \$2 per cubic yard for excavation.

The following graphic depicts a relative cost for installing and maintaining the practice. (Contact your County NRCS office for county specific cost information.)



## Conservation Practice

### Ohio Agricultural Environmental Assurance Alliance Self - Assessment Program

## Windbreak/Shelterbelt Establishment 380

### What is it?

**Windbreak/Shelterbelt Establishment** - A strip or belt of tree or shrubs established in or adjacent to a field, farmstead, or other building to provide protection from the wind and provide food and cover for wildlife.

### How it Works

An established windbreak slows wind on the downwind side of the windbreak for a distance of 10 times the height of the trees. The trees or shrubs also serve as a snow fence, trapping snow within the windbreak. Field windbreaks can also be planted to reduce wind speed in open fields.

### Benefits

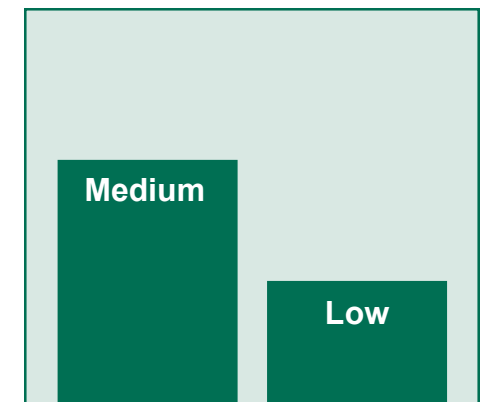
Windbreaks and shelterbelts provide the following benefits:

- Reduces wind erosion and airborne dust particles.
- Controls snow deposition.
- Protects crops for establishment and growth.
- Provides wildlife food and cover.
- Reduces chemical drift.

### Cost

According to estimates prepared by USDA-NRCS, Windbreak/Shelterbelt Establishment - Conservation Practice Standard 380 - will cost approximately \$500 per acre. Renovation of an existing windbreak/shelterbelt will cost between \$44 (farmstead) and \$63 (field) per acre.

The following graphic depicts a relative cost for installing and maintaining the practice. (*Contact your County NRCS office for county specific cost information.*)



Installation Maintenance

### Which Resource Concerns?

The following resource concerns are addressed by this conservation practice:

#### Soil Erosion

- Wind

#### Water Quality

- Surface Water

### Where it Works Best

Windbreaks and shelterbelts work best in or around open fields to protect against wind damage to soils, crops, or livestock, areas where trees or shrubs increase the natural beauty and/or provide food and cover for wildlife, areas next to roadways for living snow fences, and feedlots, farmsteads, and other buildings.