Conservation Choices

Your guide to conservation and environmental farming practices.

NRCS

Natural Resources Conservation Service

Conservation Choices

We will guide you through a variety of conservation and environmental farming practices and explain how each practice helps improve your land.

Conservation Choices
Total Resource Management:

The key to a successful total resource management system takes careful and complete planning, patience, organization, and teamwork.

Like pieces of a jigsaw puzzle, each practice fits together with others to create a complete system that protects resources found on your land.

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Total Resource Management:

When designing a total resource management plan, remember to...

- take an inventory; think about every field, pasture, pond, stream, and wooded area
- consider which conservation practices would contribute to an environmentally and economically sound farm

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Total Resource Management Checklist:

- What are the natural resources on my farm?
- What crops do I plan to plant?
- Have I minimized runoff?
- Am I using crop rotations to reduce disease and pest problems?
- What type of wildlife would I like on my farm?

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Total Resource Management Checklist: *(continued)*

- Does any practice interfere with or cancel out another practice?
- Can I use wetlands or filter strips to filter nutrients from runoff water?
- Am I making the best use of animal manure as nutrients for plants?

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These five icons will show the benefits each practice offers...

The practice reduces soil erosion and sediment runoff, or may add organic matter to the soil.

The practice protects or improves water quality.

Use this practice to increase profits by reducing costs, increasing production, or both.

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You’re thinking of wildlife by providing habitat or food sources with this practice.

This practice improves air quality by reducing odor and other problems.

Woodland Management

Woodland management improves the quality and quantity of woodland growing stock and maintains ground cover and litter for soil and water conservation.

Soil Erosion
Water Quality
Profits
Wildlife
Air Quality


Soil Erosion


Water Quality


Profits


Wildlife


Air Quality

Conservation Practices

Woodland Management

How it helps...

- Adds income to your farm
- Adds beauty to your farm
- Ground cover provides wildlife habitat, reduces soil erosion, and improves water quality

Planned Grazing System

Planned grazing systems use forage plantings and grazing rotations to maximize production and reduce sediment and nutrient runoff. Remember to consider food, water, and herd size.


Soil Erosion


Water Quality


Profits


Wildlife

Conservation Practices

Planned Grazing System

How it helps...

- Improves vegetative cover, reducing erosion and improving water quality
- Increases harvest efficiency and helps ensure adequate forage throughout grazing season
- Increases forage quality and production which helps increase feed efficiency and can improve profits
- Rotating also evenly distributes manure nutrient resources

Water Quality

Profits

Air Quality

Conservation Practices

Manure Storage

Manure storage structures protect water bodies from manure runoff by storing manure until conditions are appropriate for field application.

Water Quality

Profits

Air Quality

Conservation Practices

Manure Storage

How it helps...

- Protects water quality by preventing runoff from feedlots
- Cuts fertilizer costs and reduces nutrient losses
- Allows for field application when conditions are right

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Farm Pond

A farm pond is a pool of water formed by a dam or pit that supplies water for livestock, recreation, wildlife, and helps control gully erosion.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Farm Pond

How it helps...

- Prevents soil erosion and protects water quality by collecting and storing runoff water
- Provides water for livestock, fish, wildlife, and recreational activities
- Adds value and beauty to a farm or farmstead
- Provides a water supply for emergencies

Wildlife Upland Habitat

Wildlife upland habitat is designed to create, maintain, or improve food and cover for a variety of upland wildlife.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Wildlife Upland Habitat

How it helps...

- Ground cover reduces soil erosion, adds organic matter to the soil, filters runoff, and increases infiltration
- It can add value to your farmstead
- Planned wildlife habitat provides food and cover for wildlife.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Wildlife Food Plot

Wildlife food plots establishe a variety of plants that furnish food for wildlife.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Wildlife Food Plot

How it helps...

- Standing crops with unharvested grain provide food to wildlife that may otherwise not be accessible after heavy snows or ice
- A food plot helps maintain wildlife on your farm by providing a reliable food source


Soil Erosion


Water Quality


Wildlife

Conservation Practices

Filter Strip

Filter strips are strips of grass, trees, or shrubs that filter or clean runoff and remove contaminants before they reach water bodies or water sources, such as wells.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Filter Strip

How it helps...

- Grass, trees and shrubs provide cover for small birds and animals
- Ground cover reduces soil erosion
- The vegetative strip moves rowcrop operations farther from a stream.
- Vegetation prevents contaminants from entering water bodies, protecting water quality

Grade Control Structure

A grade control structure is an earthen, wooden, concrete, or other type of structure built across a drainageway that prevents gully erosion.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Grade Control Structure

How it helps...

- Grade control structures are often used at the outlet of a grassed waterway to stabilize the waterway outlet, preventing gully erosion
- Grassed, non-eroding waterways made possible with a grade control structure provide better water quality, can be easily crossed with equipment, and look better than non-stabilized gullies
- If designed to store water, a grade control structure may provide a water source and habitat for wildlife

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Critical Area Planting

Critical area plantings consist of grass or other vegetation that protects badly eroding areas from soil erosion.


Soil Erosion


Water Quality


Wildlife

Conservation Practices

Critical Area Planting

How it helps...

- It reduces soil erosion
- A vegetated area improves water quality by reducing the amount of sediment, nutrients, and chemicals running off farmland
- Protects areas such as dams, terrace back slopes, or gullied areas when vegetation may be difficult to establish
- Vegetation can be planted to provide small areas of nesting cover for birds and small animals

Contour Stripcropping

Contour stripcropping is crop rotation and contouring combined in equal-width strips of corn or soybeans planted on the contour and alternated with strips of oats, grass, or legumes.

Soil Erosion
Water Quality
Profits
Wildlife

Soil Erosion

Water Quality

Profits

Wildlife

Conservation Practices

Contour Stripcropping

How it helps...

- Contour stripcropping reduces soil erosion and protects water quality
- Contour stripcropping may help reduce fertilizer costs by providing nutrient inputs naturally

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Diversion

Diversion is an earthen embankment similar to a terrace that directs runoff water from a specific area.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Diversion

How it helps...

- Reduces soil erosion on lowlands by catching runoff water and preventing it from reaching farmland below
- Vegetation in the diversion channel filters runoff water, improving water quality
- Vegetation provides cover for small birds and animals
- Allows better crop growth on bottomland soils

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Water Quality

Wildlife

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Grassed Waterway

Grassed waterways are shaped to establish a natural drainageway that prevent gullies from forming by safely conveying water flows off the field.

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Water Quality

Wildlife

Conservation Practices

Grassed Waterway

How it helps...

- Grass cover protects the drainageway from gully erosion
- Vegetation may act as a filter, absorbing some of the chemicals and nutrients in runoff water
- Vegetation provides cover for small birds and animals

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Contour Buffer Strips

A contour buffer strips are strips of grass or legumes in a contoured field, which help trap sediment and nutrients. Similar to stripcropping, buffers have more narrow grass/legume strips.


Soil Erosion


Water Quality


Wildlife

Conservation Practices

Contour Buffer Strips

How it helps...

- Vegetation provides cover and habitat for small birds and animals
- The strips reduce erosion by slowing water flow and increasing water infiltration into soil
- By reducing siltation and filtering nutrients and chemicals from runoff, grass strips improve water quality

Soil Erosion

Water Quality

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Contour Farming

Contour farming is farming with row patterns that run nearly level around the hill--not up and down the hill.

Soil Erosion

Water Quality

Contour Farming

How it helps...

- Contouring can reduce soil erosion by as much as 50% from up and down hill farming
- By reducing sediment and runoff, and increasing water infiltration, contouring promotes better water quality

Soil Erosion

Water Quality

Profits

Wildlife

Conservation Practices

Field Border

A field border is a strip of grass or legumes established at the edge of a field used in place of end rows.


Soil Erosion


Water Quality


Profits


Wildlife

Conservation Practices

Field Border

How it helps...

- Vegetative cover reduces sheet and rill erosion by slowing water flow
- Vegetation filters runoff, improving water quality
- Grass and legume strips may be harvested in some cases and are easier to turn on than end rows
- Vegetation provides cover and habitat for small birds and animals

Soil Erosion

Profits

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Conservation Practices

Well Protection

Well protection is necessary when changing farming practices which occur on or near the farmstead in order to reduce the risk of contamination of water sources--mainly the well.

Soil Erosion

Profits

Wildlife

Well Protection

How it helps...

- Modifications in farming operations may improve your efficiency and reduce operation or production costs
- Soil conservation practices may be necessary to divert runoff from the well area


Soil Erosion


Profits


Wildlife


Air Quality

Conservation Practices

Windbreak

Windbreaks are rows of trees and shrubs that protect areas from wind and provide food and cover for wildlife.

Soil Erosion

Profits

Wildlife

Air Quality

Conservation Practices

Windbreak

How it helps...

- A windbreak reduces wind erosion, conserves energy, reduces heating bills and beautifies a farmstead
- Trees serve as a sound barrier, muffling road noise
- Trees and shrubs provide wildlife food and cover
- Improved livestock weight gains can be expected when livestock are protected from winter winds and snow

Pasture Planting

Pasture planting is used to plant grass and legumes that reduce soil erosion and improve production.


Soil Erosion


Water Quality


Profits


Wildlife

Conservation Practices

Pasture Planting

How it helps...

- Heavy grass cover slows water flow, reducing soil erosion
- Good pastures protect water quality by filtering runoff water and increasing infiltration
- Lush pastures offer wildlife cover and habitat
- As plants recycle and roots die, organic matter in the soil is improved

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Stream Protection

Stream protection is a practice that protects streams by excluding livestock and establishing buffer zones of vegetation to filter runoff.

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Water Quality

Wildlife

Conservation Practices

Stream Protection

How it helps...

- Streambanks are covered with rocks, grass, trees, or other cover to reduce erosion
- Better water quality results from reducing amounts of nutrients, chemicals, animal waste, and sediment entering the stream
- Buffer zones provide cover and habitat for birds and small animals

Water Quality

Profits

Conservation Practices

Manure Testing

Manure testing is used to sample and test manure to determine nutrient content. This promotes proper nutrient application to fields.

Water Quality

Profits

Conservation Practices

Manure Testing

How it helps...

- Manure testing and proper application to the land can reduce crop input costs
- Preventing over-application of manure to crop fields results in improved water quality


Soil Erosion


Water Quality


Profits


Wildlife


Air Quality

Conservation Practices

Tree Planting

Tree planting is used to establish trees in areas adapted to woodlands.


Soil Erosion


Water Quality


Profits


Wildlife


Air Quality

Conservation Practices

Tree Planting

How it helps...

- Improving stands of woodlands can increase profits
- Ground cover created by trees and associated debris protects soil for rill and sheet erosion
- Ground cover also protects water quality by filtering excess nutrients and chemicals from surface runoff and increasing infiltration rates
- Healthy, well-managed woodlands provide long-term wildlife habitat

Crop Residue Management

Crop residue management is leaving last year's crop residue on the soil surface by limiting tillage. Includes no-till, mulch till, ridge till, and strip till.


Soil Erosion


Water Quality


Profits


Wildlife


Air Quality

Conservation Practices

Crop Residue Management

How it helps...

- Ground cover prevents soil erosion and protects water quality
- Residue improves soil tilth and adds organic matter to the soil as it decomposes
- Fewer trips and less tillage reduces soil compaction
- Time, energy and labor savings are possible with fewer tillage trips

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Water Quality

Wildlife

Conservation Practices

Wetland Enhancement

Wetland enhancement is installing practices such as dikes into existing wetlands to manage water levels and improve habitat.

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Water Quality

Wildlife

Conservation Practices

Wetland Enhancement

How it helps...

- Wetlands filter nutrients, chemicals, and sediment before water infiltrates into ground water supplies
- Wetlands provide habitat for waterfowl and many other species of wildlife
- Wetlands add beauty and value to a farm

Crop Rotation

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Water Quality
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Wildlife

Crop rotation is changing the crops grown in a field, usually year by year.

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Water Quality

Profits

Wildlife

Conservation Practices

Crop Rotation

How it helps...

- Pesticide costs may be reduced by naturally breaking the cycles of weeds, insects, and diseases
- Grass and legumes in a rotation protect water quality by preventing excess nutrients or chemicals from entering water supplies
- Meadow or small grains cut soil erosion dramatically
- Crop rotations add diversity to an operation

Water Quality

Profits

Conservation Practices

Nutrient Management

Nutrient management is applying the correct amount and form of plant nutrients for optimum yield with minimal impacts on water quality.

Water Quality

Profits

Conservation Practices

Nutrient Management

How it helps...

- Sound nutrient management reduces input costs and protects water quality by preventing over application of commercial fertilizers and animal manure

- Correct manure and sludge application on all fields can improve soil tilth and organic matter

Wetlands

A wetland is a marsh-type area with saturated soils and water-loving plants. Wetlands provide wildlife habitat and serve as natural filters of agricultural runoff.

Soil Erosion
Water Quality
Wildlife

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Wetlands

How it helps...

- Wetlands can provide natural pollution control. They remove nutrients, pesticides, and bacteria form surface waters and can act as efficient, low-cost sewage and animal waste treatment practices
- Wetlands filter and collect sediment from runoff water
- Because wetlands slow overland flow and store runoff water, they reduce both soil erosion and flooding downstream
- Many wetlands release water slowly into the ground which recharges groundwater supplies

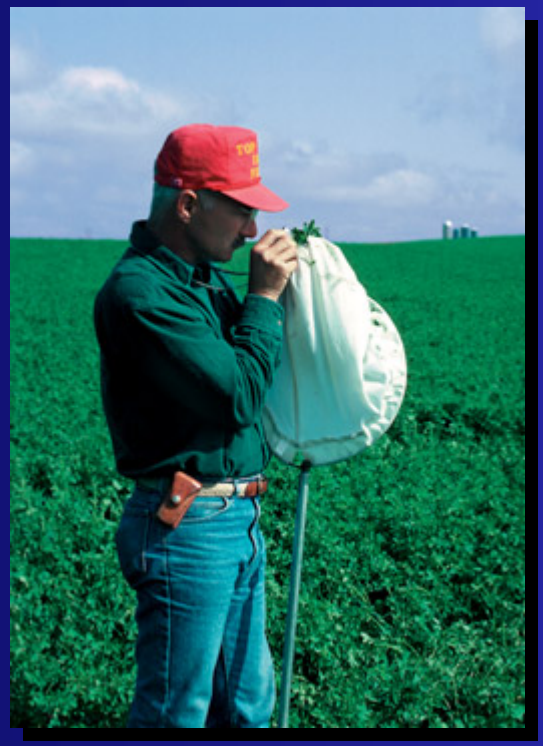
Soil Erosion

Water Quality

Profits

Conservation Practices

Pest Management



Pest management is evaluating and using a tailored pest management system to reduce crop and environmental damages. Scouting is done to identify insects, weeds, and diseases.

Soil Erosion

Water Quality

Profits

Conservation Practices

Pest Management

How it helps...

- Scouting and spot treatment of only those pests that are threatening can save money
- Using fewer chemicals improves water quality
- Specific treatments for specific pests on specific areas of a field prevents over-treatment of pests

Water and Sediment Control Basin

A water and sediment control basin is a short earthen dam built across a drainageway where a terrace is impractical; usually part of a terrace system.

Soil Erosion

Water Quality

Wildlife

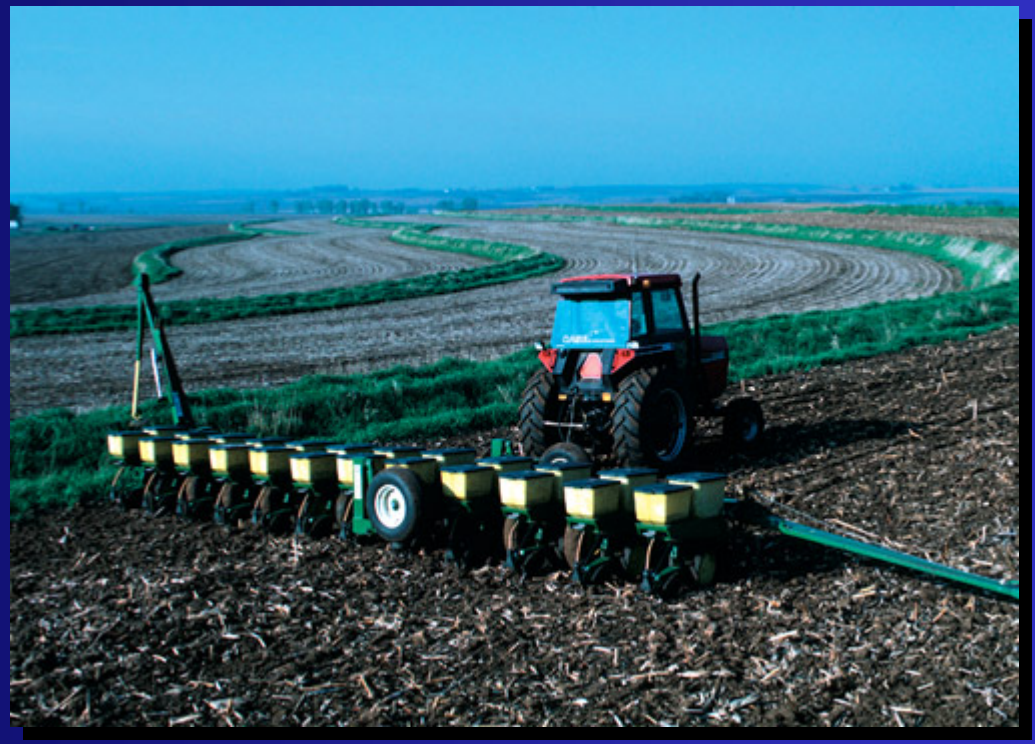
Conservation Practices

Water and Sediment Control Basin

How it helps...

- Basins improve water quality by trapping sediment on uplands and preventing it from reaching water bodies
- Structures reduce gully erosion by controlling water flow within a drainage area
- Grass cover may provide habitat for wildlife

Terrace



A terrace is an earthen embankment around a hillside that stops water flow and stores it or guides it safely off a field.

Soil Erosion

Water Quality

Wildlife

Conservation Practices

Terrace

How it helps...

- Both water and soil quality are improved
- Terraces with grass on front or backslopes can provide valuable nesting habitat

Soil Erosion

Water Quality

Air Quality

Conservation Practices

Cover Crop

Cover crops are a close-growing crop that temporarily protects the soil when crop residues are not adequate.

Soil Erosion

Water Quality

Air Quality

Conservation Practices

Cover Crop

How it helps...

- Cover crops keep ground covered, add organic matter to the soil, trap nutrients, improve soil tilth, and reduce weed competition

Conservation Choices
Challenges Ahead...

Farmers are applying conservation and environmental practices to their land at record rates.

Farmers have accepted the challenge of protecting our natural resources and continue to educate themselves about new technologies and techniques as they are developed.

Conservation Choices

Your Helping Hand to Conservation

The USDA Natural Resources Conservation Service's technical staff is here to give you a hand to help you put conservation on the land and protect and preserve our natural resources.

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