Alternative Water Supply

Alternative water supplies can provide adequate and dependable quantities of water while protecting the water source at the same time. Livestock tend to travel a limited distance to a water supply, which in turn can affect animal performance. Alternative water supplies provide better access for livestock to meet their daily requirements.

Purpose

- Provides clean water source
- Provides dependable water source
- Decreases soil erosion
- Saves time and labor
- Provides better access and safer watering sites

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Brush Management

Brush management is a key in improving the health of a pasture. Invasive species reduce forage production; change the overall plant community; and require more rainfall, which reduces the amount available for plant growth. Controlling invasive species helps restore the native species and improve vegetative cover, which correlates into pounds of beef produced.

Purpose

- Improves plant diversity and general plant health
- Improves grazing distribution
- Improves forage production
- Reduces erosion
- Provides a healthy wildlife habitat

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Conservation Buffer Strips

Conservation buffers are small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns. Buffer strips can help farmers achieve a measure of economic and environmental sustainability in their operations, when combined with appropriate management practices.

Purpose

- Slows water runoff, traps sediment, and enhances infiltration within the buffer
  - Conservation buffers remove up to 75 percent or more of sediment
- Traps fertilizers, pesticides, pathogens, and heavy metals
  - Conservation buffers remove up to 50 percent or more of nutrients and pesticides
- Traps snow and cuts down on blowing soil in areas with strong winds
- Protects livestock and wildlife from harsh weather
- Provides a source of food, nesting cover, and shelter for wildlife

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Critical Seeding

Critical seeding is the process of establishing permanent vegetation on sites which are highly susceptible to erosion. Historically, these sites have had problems with establishing permanent vegetation using conventional management practices. Critical seeding sites include areas with highly erodible soils; long or steep slopes; droughty soils; excessively wet soils; soils that are very acidic or alkaline; slopes immediately adjacent to bodies of water or wetlands; fill areas; and areas subject to concentrated flows.

Purpose

- Reduces soil erosion
- Reduces wind erosion
- Restores degraded land sites
- Protects off-site damage to other land sites

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Conservation Reserve Program (CRP)

CRP is a program which involves planting native grasses and forbs in areas that were previously farmed. In emergency, the land may be opened for haying and grazing. Several practices can be used to achieve permanent cover including range seeding; upland wildlife habitat seeding; windbreaks; filter strips; buffers; and more.

Purpose

- Provides field cover, reducing wind and water erosion
- Provides more natural habitat for wildlife
- Protects soil, water and wildlife resources
- Improves and preserves water quality
- Enhances forest and wetland resources

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Field Borders

Field borders are strips of vegetative cover, commonly grass, that are drilled around a field's perimeter to connect other buffer practices within a field.

Purpose

- Improves water quality
- Reduces erosion
- Provides wildlife habitat
- Protects crops
- Provides a turning area for implements
- Helps to manage populations of harmful insects

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Filter Strips

Filter strips are 15- to 100-feet wide areas on either side of waterways that are covered with native or introduced vegetation. The filter strips' main function is to trap pollutants from water runoff before they can get into the surface water system.

Purpose

- Decreases nutrients and soil sediment in surface water
- Decreases soil erosion
- Increases the possibility of groundwater recharge with better soil infiltration
- Provides habitat for wildlife and forage sources for livestock
- Provides a turn row at the ends of fields

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Graded Terraces

Graded terraces are earth embankments or channels – or combinations of embankments and channels – constructed across the slope of the landscape. Graded terraces are placed where there is suitable spacing and acceptable grade to reduce runoff.

Purpose

- Catches and retains water runoff from above the terrace
- Reduces the length of the slope and, thus, reduces the amount of runoff
- Removes surface runoff water at a non-erosive velocity
- Reduces peak runoff rates to installations downstream
- Diverts water to a suitable outlet

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Grassed Waterways

Grassed waterways involve shaping and establishing areas where drainage naturally occurs in cropland. These areas are vegetated with grasses suited for the area. Grassed waterways capture runoff from cropland and prevent soil erosion.

Purpose

- Carries water off the field safely
- Traps soil sediment that has moved off cropland
- Absorbs any chemicals and fertilizers that might enter water sources
- Provides cover and habitat for wildlife
- Provides areas for farm equipment to safely cross field

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Level Terraces

Level terraces are a series of ridges and channels constructed on a field that is considered erodible. Level terraces are designed so that water will stay on a field and infiltrate instead of running off. Level terraces are not graded.

Purpose

- Controls erosion by breaking up the length of the slope over the field
- Conserves moisture so that water remains on the field where there is limited annual rainfall
- Reduces sediment runoff
- Improves the ability to farm an entire field by stopping erosion
- Reduces runoff by blocking the ends of the terraces until the water can infiltrate

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Livestock Waste System

A livestock waste system manages liquid and solid wastes from a confined animal feeding operation (CAFO). The system disposes waste to protect air, soil, and water resources; and contributes to public health and safety. The waste produced within the system is applied to soil and plants as fertilizer, according to CAFO permit guidelines. If permits for livestock waste systems are managed properly, unplanned discharges will not occur.

Purpose

- Protects water resources
- Reduces bacteria, including E. coli, that may enter water resources
- Reduces nutrients entering water resources
- Captures and manages extraneous drainage

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Windbreaks for Livestock Use

When used for livestock protection purposes, windbreaks can reduce the harsh effects of cold winter winds on livestock, which improves health and feed efficiency.

Purpose

- Reduces wind velocity over a specific area
- Provides protection for livestock from blizzards and other severe weather
- Decreases the potential for lower respiratory problems in livestock by reducing blowing dust
- Minimizes mortality during calving by controlling harsh conditions
- Helps lower feed costs for producers by keeping animals warmer

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Minimum Tillage

Minimum tillage can have many different definitions but typically involves planting a crop into a previously undisturbed seedbed, which may or may not have been tilled prior to planting. Ultimately, the number of tillage operations is decreased compared to a conventional tillage operation.

Purpose

- Conserves soil moisture
- Conserves fuel
- Saves time spent in the field
- Reduces soil and wind erosion
- Improves soil-aggregate formation
- Improves water infiltration

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No-Till Farming

No-till is a farming practice in which the soil is not disturbed by tillage. The only disturbances to the soil are from the planter and/or drill when a crop is sewn, or from injecting liquid fertilizers.

Purpose

- Conserves soil moisture
- Conserves fuel
- Saves time in the field
- Reduces soil erosion
- Improves soil-aggregate formation
- Improves water infiltration

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Parallel Terraces

Parallel terraces are so named because they are constructed parallel to each other and, when possible, formed in the direction of field operations. A more specialized form of the parallel terrace is the parallel tile outlet terrace, which is constructed in parallel and discharges runoff through subsurface drains.

Purpose

- Reduces soil erosion by breaking a long slope into several short sections
- Reduces the speed of runoff and amount of soil particles that can be transported in runoff
- Stores runoff collected in the terrace channel for infiltration, or safely diverts runoff to lower ground by grassed waterways or tile outlets
- Eliminates point rows commonly associated with contour terraces, making field operations easier

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Prescribed Grazing

Prescribed grazing is a farm management technique in which grazing or browsing animals harvest vegetation in a controlled way to achieve the farmer's or rancher's goals. Forage quality, quantity, palatability, and toxicity are considered the primary plant factors that impact animals when using prescribed grazing.

Purpose

- Enhances, maintains, or decreases the quantity, quality, and persistence of targeted plants or plant communities
- Improves land health and biodiversity by providing an alternative to chemicals
- Improves the efficacy and longevity of weed control treatments by integrating herbicides, fire, or traditional biocontrol methods

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Rotational Grazing

Rotational grazing involves having several pastures in a farm operation that can be used during the grazing season. Livestock are allowed to graze one pasture while letting all of the other pastures rest. Livestock are moved from pasture to pasture based on weather conditions, forage availability, and herd size.

Purpose

- Allows for efficient use of pastures and ensures adequate forage
- Increases water infiltration
- Resting periods allow for proper regrowth
- Improves balance of native plant species
- Prevents overgrazing
- Decreases animal selectivity in plant species
- Reduces soil erosion and improves water quality

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Shelterbelt

A shelterbelt is a large scale windbreak designed around a farm or homestead to reduce the wind flow. Most windbreaks are 3 or 4 rows of trees, shrubs, or a combination of the two.

Purpose

- Reduces the wind velocity or flow
- Reduces the cost to heat or cool the home
- Reduces noise
- Provides a habitat for animals
- Helps control snow drifts from forming
- Beautifies a homestead
- Protects a garden from dust particles that are blowing with the wind

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Streambank Stabilization

Stabilizing a stream bank is important to reduce erosion, which can create a threat to land, water, vegetation, and wildlife along streams. Streambank stabilization projects can prevent acres of cropland from eroding in future years.

Purpose

- Improves water quality
- Stabilizes eroded bank
- Reduces nutrient movement
- Reduces erosion and downstream sediment effects
- Provides healthy riparian areas

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Stream Crossings

Stream crossings provide a convenient and safe area for livestock and equipment to cross streams. For proper stream flow, crossings should be placed on riffles and not in the pools; and should be perpendicular to stream flow. The elevation of the crossing should be equal to the streambed elevation.

Purpose

- Improves water quality
- Reduces turbidity
- Provides easy access to water source
- Reduces nutrient loading in water source

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Strip Tillage

Strip till is a conservation tillage system in which only about 30% of a field is tilled, leaving heavy residue (depending on the previous crop) on most of the surface. Often the tillage occurs in the fall prior to planting a crop – like corn or grain sorghum – the following spring.

Purpose

- Heavy residue helps to control wind and water erosion
- Improves the efficiency of water use so that soil is cooler and wetter during hot summer months
- Provides a warmer, drier seedbed that improves germination for potentially earlier growth and planting times
- Allows for proper placement of fertilizer in the center of the strip

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Weed Barrier

A weed barrier is a porous fabric sheet (usually black) that is laid down prior to planting or over the top of newly-planted trees, shrubs, and vegetables to suppress weed growth, but still allow water and air to infiltrate. It typically comes in 3 to 6 feet wide sheets and comes in 250 to 300 feet long rolls.

Purpose

- Suppresses weed growth
- Allows air and water to infiltrate
- Keeps the soil warmer and moist
- Saves time and money by reducing the need for watering
- Increases tree survivability

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Wildlife Windbreaks

Wildlife windbreaks provide an ideal place for wildlife to breed, nest, and rear brood safely. For birds, windbreaks typically consist of thick, low level shrubs which provide cover and food. For deer and other wildlife, windbreaks typically consist of hardwood trees and evergreens which provide shelter and food.

Further wildlife enhancement can be done by planting strips of grass or food plots – such as milo and corn – around windbreaks. These provide a year-round food supply for wildlife. If planted near a pond or other water source, the windbreak will become a permanent home for more wildlife.

Purpose

- Provides food and foraging sites
- Provides cover from harsh weather conditions
- Provides shelter from predators
- During winter months, if the windbreak is planted east and west, animals have direct sunlight and wind protection available all day

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Native Plantings

Native plants, with varieties of growth forms and local adaptations, provide reliable, functional, and aesthetic landscapes in urban settings. These grasses and broadleaf plants (forbs) reduce erosion by stabilizing soil with deep root systems. This increases storm water infiltration reducing the volume and velocity of storm water runoff. Native vegetation at the same time filters storm water runoff removing both nutrients and sediment.

Purpose

- Adapted to local soils and climate
- Little to no maintenance
- No fertilizer or pesticides needed
- Perennial
- Attractive to wildlife
- Self sustaining ecosystem

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