SECTION THREE
General Farm Management Planning

Every Georgia farmer has the opportunity to protect water quality on and around his or her operation. Protecting water quality and overall farm sustainability should be the ultimate goal of every farmer. Georgia's rural landscape is slowly diminishing because of industrial and urban growth. Agricultural producers are facing more regulations and more environmental issues than ever. In a changing society, farmers need to take every opportunity to demonstrate environmental stewardship.

Practices listed in this section are applicable to every Georgia farm, regardless of size, commodity or location. These practices can help you make improvements that will enhance your operation, improve your efficiency and protect the natural resources on your farm. The practices listed in this section are only a small collection of conservation practices. There will be practices listed in other sections that can also be applied on your farm. Be sure to take the time to look through all of the practices. If you have more questions about any of the practices described in this book, you can find contact information in Chapter 3 of this manual.

Conservation practices included in the General Farm Management Planning section include:

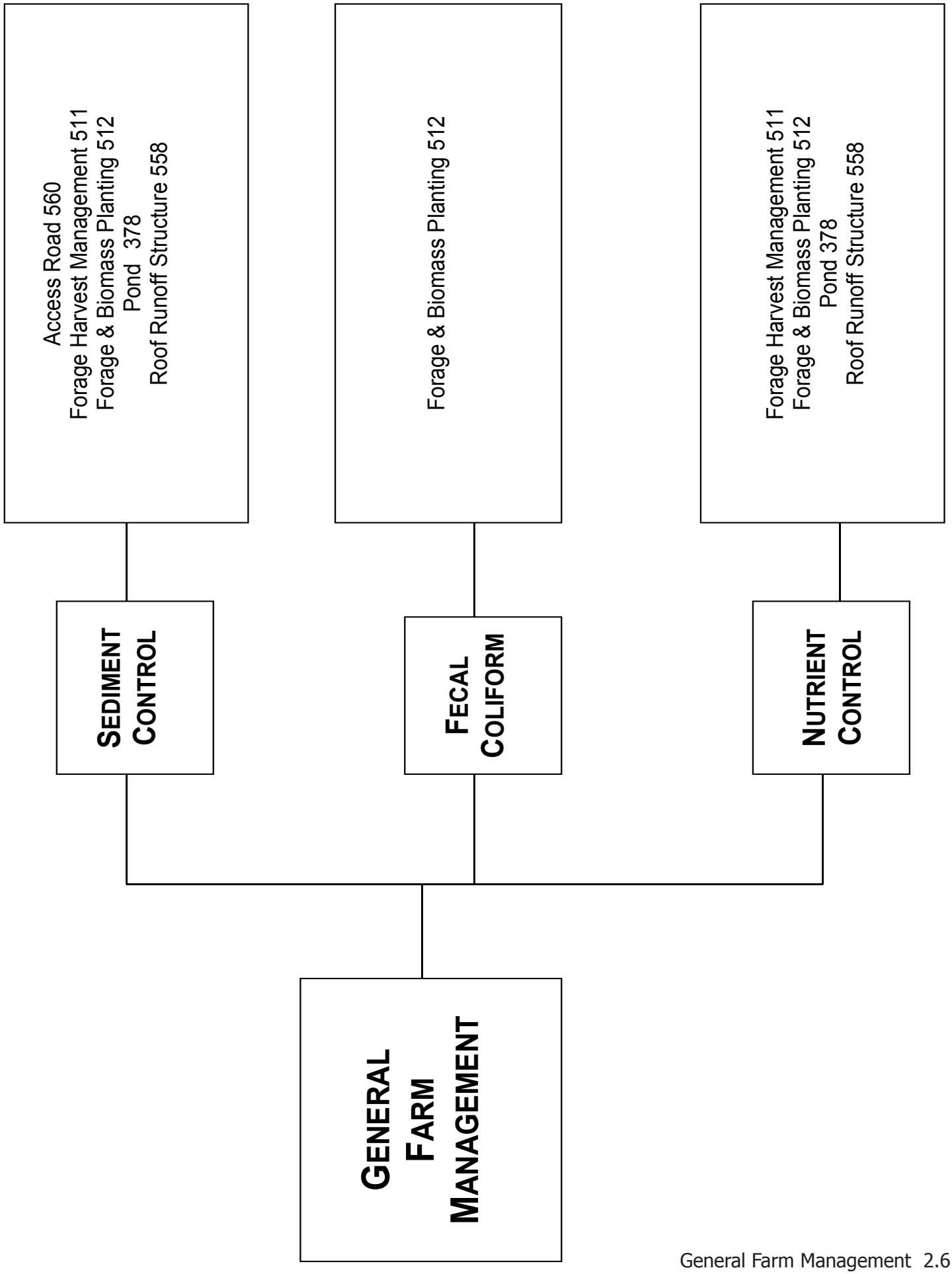
Access Road 560

Forage & Biomass Planting 512

Forage Harvest Management 511

Pond 378

Roof Runoff Structure 558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SEDIMENT CONTROL
FECAL COLIFORM
NUTRIENT CONTROL
GENERAL FARM MANAGEMENT

ACCESS ROADS (560) reduce erosion by providing a fixed entry point into fields and pastures for year-round access.

By establishing access roads you reduce soil erosion and sediment transport into nearby water bodies

Water Quality Benefits

- Reduces soil erosion
- Reduces sediment and runoff entering fields
- Protects downstream water quality

When to Use

Access roads are ideal as permanent or temporary structures in heavy traffic areas. Access roads should be avoided in wetlands and riparian areas.

How to Establish

Plan roads to follow natural contours and slopes. The minimum width for one-way traffic is 14 feet and 20 feet for two-way traffic with an additional 2 feet for shoulder construction. Ditches may be needed to divert water.

Once construction is complete, re-vegetate as soon as possible. Vegetation will slow water traveling on surfaces and reduce soil erosion. Filter strips and buffers can protect nearby water sources.

For more information, see *Additional Resources.*

Costs and Considerations

Before installing an access road, consider potential negative impacts. Improperly managed access roads can negatively impact downstream flows, increase sedimentation in water, and impair water quality.

Access road maintenance can be substantial if soil erosion is a problem or if roads are poorly planned and constructed. Costs associated with this practice may include filter strip and buffer planting, surface cover costs, silt fences and general maintenance. It may also be necessary to periodically re-cover surfaces to maintain road integrity.

Access roads are moderate to high in cost depending on materials, size and construction.

Effectiveness

Forest access road reconstruction can potentially reduce sediment yield by 70% using slope reduction, vegetated and brush barriers, broad-based-dips, hay bales and silt fences.

Additional Resources

NRCS Conservation Practice Standard 560
Best Management Practices for Forestry Manual

There are 15 mandated baseline provisions for road construction and maintenance in and across the waters of the U.S in order to qualify for exemption. More information can be found in the GFC Best Management Practices for Forestry Manual, Section 3.3.1 or in Chapter 3 of this handbook.

FORAGE & BIOMASS PLANTING (512) prevents soil erosion and improves water quality by establishing native or introduced forages in fields or pastures.

Water Quality Benefits

- Reduces soil erosion
- Reduces sediment transport
- Increases infiltration
- Reduces surface water leaving a field

Water Quality Benefits

Forage and biomass planting can be used wherever forage production and/or conservation is needed.

How to Establish

Select plant species that are native or adaptable to the region. Choose species based on climate and soil conditions, resistance to regional diseases and insects, intended use, realistic expected yield, maturity stage and compatibility with other plant species and crops.

Proper planting practices and appropriate seeding rates and planting depths should be met. Use conservation and no-till planting methods in areas at risk for erosion.

Fertilizer and soil amendments may be needed. Nutrient applications should be planned according to a nutrient management plan and based on soil and manure test results. Overseeding can improve forage availability. For recommended planting mixtures, see GA NRCS recommendations.

For more information, see *Additional Resources*.

Considerations and Costs

To reduce erosion, adequate ground cover is necessary.

In areas with large animal populations, select plant species that are tolerant of close grazing and heavy traffic.

Costs associated with this practice include site preparation, seed/plant materials, fertilizer and soil amendments, and insect and weed control.

Forage and biomass planting is low in cost.

Effectiveness

Forage and biomass planting can potentially reduce erosion by up to an estimated 85% on protected areas.

Additional Resources

NRCS Conservation Practice Standard 512

FORAGE HARVEST MANAGEMENT (511) is a management system designed to maximize yield and forage quality and to reduce erosion and water quality degradation by maintaining forage stand.

A forage harvesting schedule can improve productivity and increase yield

Water Quality Benefits

- Maximizes available nutrient usage
- Reduces excess nutrients leaving fields and pastures in runoff
- Slows runoff from fields and pastures and protects water quality

When to Use

Forage harvest management can be used on all land where forages are machine harvested. Forage harvest management is a component of nutrient utilization and management and is used to stabilize soil.

How to Establish

Harvest forages at the stage of maturity that maximizes quality and quantity. Moisture content significantly impacts forage quality. Depending on what the forage will be used for (hay, green chop or silage), forages should be harvested at recommended moisture content levels. When applying nutrients to forages, a soil test is necessary to best meet the needs of the forage. Excess nutrients can be devastating to crops and to animals being grazed on pastures.

For more information, see *Additional Resources.*

Considerations and Costs

Costs associated with this practice include seed, chemical and equipment costs as well as maintenance costs. Keep fields clear of debris in order to prevent equipment damage.

Forage harvest management is low in cost.

Effectiveness

Sediment runoff models indicate that, in conjunction with prescribed grazing, forage harvest management can be 75% effective in reducing soil loss.

Additional Resources

NRCS Conservation Practice Standard 511

Hay is prepared for baling as part of a forage harvesting system

PONDS (378) are built to provide water for livestock, fish and wildlife, recreation, fire control and other uses.

A farm pond in southwest Georgia

Water Quality Benefits

- Potentially protects and further enhances water quality
- Provides/enhances aesthetic value
- Captures sediment and reduces transport downstream

When to Use

Ponds may be constructed for various reasons.

When ponds are being constructed for irrigation purposes, additional requirements and permitting may be required. Please contact your local conservation agent and see NRCS Conservation Practice Standard 436 for information about Irrigation Storage Reservoirs.

How To Establish

The Georgia Department of Natural Resources must be notified prior to any pond construction with an embankment of 25 feet or more or when the pond will have an impoundment capacity at a maximum water storage elevation of 100 AC-FT.

Prior to any pond restoration project, contact the U.S. Army Corps of Engineers and GA EPD for additional requirements.

GAEPD and the Army Corps of Engineers require documentation of agricultural use for exemption from erosion and sedimentation control permitting programs and NPDES permitting programs.

Ponds, in conjunction with vegetative buffers, can act as secondary traps for pollutants passing through primary practices.

NRCS typically accounts for sedimentation during the design of ponds. Your local NRCS representative can provide you with more information regarding appropriate pond sizing for your operation.

Owners are responsible for obtaining all permits. These include Georgia 401 Clean Water certification, Section 404 of the Clean Water Act permits and authorization from the Department of Natural Resources, Fish and Wildlife Division in addition to any local permits that may be necessary.

For more information regarding pond construction and requirements, see *Additional Resources*.

Considerations and Costs

Locate ponds in an area that will provide the most benefit. Consider visual impacts and wildlife habitat impacts. During construction, consider and plan for impacts on downstream watercourses, off-stream locations and environmental impacts on wetlands, aquifers and downstream users.

Costs associated with pond construction may include permitting, construction and maintenance. If stocking fish, additional costs are associated with purchasing stock and supplemental feeding. Maintenance may include removing debris and sediment. Also, when constructing a pond, establish vegetative cover on all sides of the pond.

Contact your local conservation agent prior to beginning a pond construction project in order to fully

understand maintenance requirements.

Ponds are moderate to high in cost and depend on the size of the pond.

Effectiveness

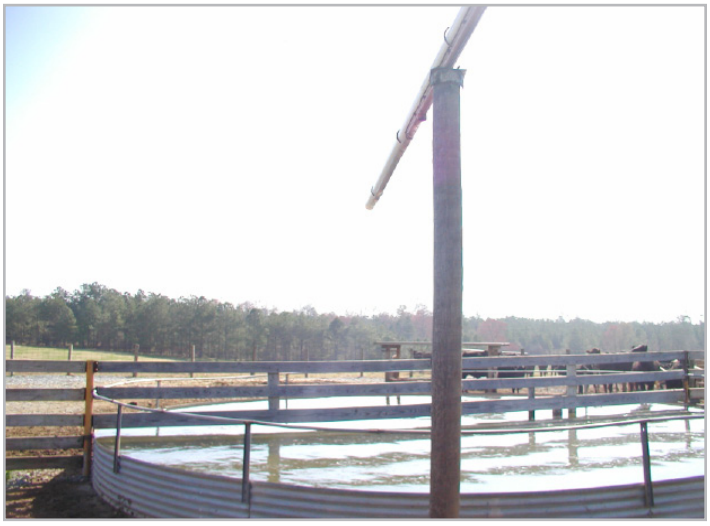
Ponds can potentially trap up to 80% of sediment depending pond design.

Additional Resources

NRCS Conservation Practice Standard 378
U.S. Army Corps of Engineers
Georgia EPD

Contact the GA EPD and local issuing authorities prior to constructing any pond for additional guidelines. Local authorities may require an erosion and sediment control plan. If working within a wetland, contact the Army Corps of Engineers.

ROOF RUNOFF STRUCTURES (558) are used to capture and transport water from roofs and to limit soil erosion from roof runoff.



A runoff collection system in Middle Georgia collects rainwater for livestock watering

Water Quality Benefits

- Reduces soil erosion
- Diverts water to more beneficial outlets

When to Use

Install roof runoff structures where there is potential for increased soil erosion and runoff as a result of flow from roofs.

Roof runoff structures can be used as a component of an alternative water system and/or an animal waste management system.

How to Establish

Numerous materials are available for use as roof runoff structures. Choose durable materials with a minimum life expectancy of 10 years.

Rock used for channels, trenches and pads should be poorly graded and free of sand and soil particles.

Runoff should be diverted to grass, vegetative or mass planting areas to increase infiltration rates.

Select downspouts of proper size to ensure the proper flow rate and system capacity.

For more information, see *Additional Resources*.

Considerations and Costs

Dissimilar metals should not be in contact of each other.

Keep roof runoff structures clear of debris. Periodically inspect for damages and make repairs in a timely manner. Regular inspections and maintenance will lower replacement costs.

Contact your local conservation agent prior to beginning a roof runoff structure project in order to fully understand maintenance requirements.

Discharge outlets should not be near wells or into structures that discharge directly into surface water.

Roof runoff structures are moderate in cost, depending on complexity.

Effectiveness

These facilities protect water quality by offering an alternative water supply which, with exclusion fencing, reduces animal access and waste entering nearby water bodies.

Additional Resources

NRCS Conservation Practice Standard 558