

# State Specific Training Module for Maryland

## Purpose of this Module

This module provides general information that TSPs need to conduct conservation planning in Maryland. TSPs may also need additional study or training to make sure they have the knowledge, skills, licenses, and certifications to conduct conservation planning in this state.

## REVIEW OF STATE AND LOCAL LAWS AND REGULATIONS

This section covers the following topics:

- Professional Licenses and Certifications
- Erosion and Sediment Control
- Stormwater Management
- Nutrient Management
- Animal Feeding Operations (AFOs)
- Maryland Critical Area: Chesapeake Bay and Atlantic Coastal Bays
- Forest Conservation
- Waters and Wetlands

## Professional Licenses and Certifications

- **Maryland Forestry Law** requires a professional forester's license from the Maryland Department of Labor, Board of Foresters, for technical assistance concerning the planting, conservation, protection, and management of trees and related resources in forests and woodlands.
- **Maryland Nutrient Management Law** requires a nutrient management consultant certificate and license from the Maryland Department of Agriculture for planning, designing, and/or implementing nutrient management.
- **Maryland Pesticide Applicators Law** requires a pest control applicator license and certificate, or a pest control consultant license and certificate, from the Maryland Department of Agriculture for planning, designing, and/or implementing chemical treatments.

## Professional Licenses and Certifications

- **Maryland Professional Engineering Law** requires a professional engineer's (P.E.) license from the Maryland Department of Labor, Board for Professional Engineers, to practice engineering. This includes consultation, investigation, evaluation, planning, design, design coordination, and inspection of construction to ensure compliance with specifications and drawings.
- The requirement for a Maryland P.E. license applies to conservation practices that have a Conservation Engineering discipline listed -- either alone or jointly with an Ecological Sciences discipline. Refer to the National Handbook of Conservation Practices, Chapter 3, National Conservation Practice Standards for a list of practices, and use the "Lead Discipline" column to identify the professional responsibilities for each practice.  
<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=48741.wba>

## Erosion and Sediment Control

- An Erosion and Sediment Control Plan is required for an earth-disturbing activity of 5,000 square feet or more, or 100 cubic yards of earth. The plan must be approved by the Soil Conservation District.



No-till planting.

- Normal farming operations and conservation practices are exempt if implemented in accordance with a Soil Conservation and Water Quality Plan (SCWQP).

## Erosion and Sediment Control

- Construction of agricultural structures integral to the farming operation (e.g., poultry houses; barns for livestock, hay, or equipment storage; milking parlors; associated access roads) are also exempt from the requirement to obtain and implement an Erosion and Sediment Control Plan.



Poultry house under construction.

- Timber harvests must be implemented in accordance with a Forest Harvest Plan, developed by a licensed professional forester. Timber harvests  $\geq 5,000$  square feet also need an Erosion and Sediment Control Plan.

## Stormwater Management

- Purpose: control runoff and mitigate water quality degradation associated with new construction
- There are state and local stormwater management requirements.
- A Stormwater Management (SWM) Plan is required for earth-disturbing activity of 5,000 square feet or more.
- Normal farming operations and conservation practices are exempt if implemented in accordance with a Soil Conservation and Water Quality Plan.
- Construction of agricultural structures – SWM Plan is required for disturbance of 5,000 square feet or more.



## Nutrient Management

- Nutrient Management Plan (NMP) – required for agricultural operations where nutrients are applied to produce agricultural products and/or where manure is produced.
  - Farms with a gross annual income of at least \$2,500 or at least 8,000 pounds of livestock or poultry need an NMP.
  - The NMP specifies how much fertilizer, manure or other nutrient sources may be applied to crops to achieve desired yields and prevent excess nutrients from adversely affecting surface waters.
  - Must include nutrient application and livestock setbacks from streams.

## Animal Feeding Operations (AFOs)

- AFOs – livestock or poultry operations that confine animals for at least 45 days per year (does not need to be consecutive) and have the potential to discharge manure, litter, or process wastewater from production areas into surface water or groundwater.
- Maryland Department of the Environment (MDE) regulates AFOs for compliance with water quality regulations.
- Producers must obtain a wastewater discharge permit from MDE and implement a Comprehensive Nutrient Management Plan (CNMP).



## Maryland Critical Area

- Maryland Critical Area (Chesapeake Bay and Atlantic Coastal Bays) – includes all land within 1,000 feet of Maryland’s tidal waters and tidal wetlands.
- Critical Area Buffer – zone at least 100 feet wide, with more stringent requirements to protect water quality and fish and wildlife habitat than the rest of the Critical Area.
  - Construction and land disturbance, such as clearing trees, cutting brush, or grading, are generally prohibited in the buffer unless a property owner obtains prior approval.
- Critical Area regulations are administered by local county governments.
- Official maps delineate the Critical Area – paper and/or electronic copies available for each county.

## Maryland Critical Area

- All farms in the Critical Area must have a SCWQP, NMP, and must implement Best Management Practices (BMPs).
- Agricultural activities in the Critical Area Buffer – need a 25-foot vegetated buffer or alternative conservation practices in the SCWQP.



## Maryland Critical Area

- Timber harvesting activities  $\geq 1$  acre in the Critical Area – need a Forest Harvest Plan developed by a licensed professional forester. Timber harvests  $\geq 5,000$  square feet also need an Erosion and Sediment Control Plan. Harvested areas must be reforested.



- Timber harvests are generally not allowed in the Critical Area Buffer.

## Forest Conservation

- Maryland Forest Conservation regulations – intended to minimize the loss of forest land during development.
  - Planning process identifies priority areas for forest retention and tree planting.
  - Required for activities involving a subdivision application, grading permit, or sediment control permit on  $\geq 40,000$  SF.
- Counties with more than 200,000 acres of forest are exempt. Only Allegany and Garrett Counties meet this threshold.
- Forest Conservation regulations are administered by local county governments – plans must be submitted for review before conducting regulated activities.
- Clearing for agricultural activities (including agricultural structures) or forestry activities  $\geq 40,000$  SF – exempt if a Declaration of Intent is filed with the local county government..
  - Site must remain in ag or forestry use for at least 5 years.

## Waters and Wetlands

- Maryland Department of the Environment (MDE) regulates activities conducted in “Waters of the State” (i.e., tidal and nontidal waters, and 100-year floodplains) and tidal and nontidal wetlands.
- Regulated activities – draining, dredging, excavating, filling, grading, shaping, flooding, changing the hydrology, or removing vegetation.



## Waters and Wetlands

- The U.S. Army Corps of Engineers also has jurisdiction for waters and wetlands, but for most agricultural activities, MDE is the point of contact for authorizations and permits.
- Guidance on waterways and wetlands regulations related to agriculture can be found in Section I-G of the FOTG.



- Most structural conservation practices within waterways or wetlands can be implemented through an existing general permit issued to NRCS by MDE.



## Notes on Requirements for Practice Designs

- Any designs that include engineering practices require a professional engineer (PE) stamp.
- Practices that manipulate forest stand structure or composition require approval by a licensed Maryland forester.
- Comprehensive Nutrient Management Plans (CNMP) must meet NRCS requirements. If the CNMP is required for Maryland AFO permitting, it must also meet MDE AFO requirements.

## Wetland Restoration and Creation Practices

- Wetland Restoration (657) and Wetland Creation (658) practice designs are considered both Ecological Sciences and Engineering practices. If the designs include any engineering practices, regardless of whether they are called out as separate practices, the design must be stamped by a professional engineer (PE).
- When designing 657 or 658 in areas adjacent to tidal marsh and within 4 feet of mean sea level, designers must incorporate marsh migration criteria. Marsh migration criteria can be found in the Maryland Wetland Design Guide, which is located in the 657-conservation practice folder within the FOTG.
- Designs of 657 and 658 should also adhere to the design criteria based on wetland hydrogeomorphic classification contained in the Maryland Wetland Design Guide.
- Designs of 657 and 658 receiving USDA financial assistance or cost-share should be designed with consideration of costs, ensuring that design components affecting costs are reasonable and necessary to implement the practice and meet objectives.

# REVIEW OF MARYLAND FOTG REQUIREMENTS

## Planning References and Resource Assessment Tools

The following sections of the FOTG provide key references and tools that are specific for Maryland:

- Section I-G – Regulatory Guidance for waterways and wetlands.
- Section I-H – Conservation Reserve Program (CRP) and Maryland Conservation Reserve Enhancement Program (CREP) technical references.
- Section II-C – Cultural Resources Information.
- Section II-D – Threatened and Endangered Species.
- Section II-E – Resource assessment tools used in conservation planning, including those for soil erosion, soil health, pasture management, pest management, stream quality, wildlife habitat, resource inventory, and environmental evaluation.

## REVIEW OF MARYLAND FOTG REQUIREMENTS

### Planning References and Resource Assessment Tools (cont'd)

- Section II-F – Plants and Planting Guidance
  - The Maryland Conservation Planting Guide is the primary document containing approved species and planting mixes for permanent vegetative practices.
  - The Maryland Wildflower Habitat Establishment Guide provides guidance for establishing native plants for pollinators and beneficial insects.
- Section II-G – The Maryland Wildlife Habitat Planning Guide is the primary document for planning practices to meet the needs of specific wildlife and habitats.
- Section III – Resource Concerns and Planning Criteria guidance and technical references.

## REVIEW OF IMPORTANT RESOURCE ISSUES

- The presence of **cultural resources** and **threatened and endangered (T&E) species** must be evaluated for every conservation plan and NRCS contract. Maryland has GIS datasets that should be utilized to conduct these evaluations.
- Consultation with the State Historic Preservation Officer (SHPO) at the Maryland Historical Trust (MHT) is required before conducting activities (e.g., planning or implementing conservation practices) that may adversely affect cultural resources.
- For T&E species, consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the Maryland Department of Natural Resources (DNR) may be needed to evaluate impacts when these species are present.

## REVIEW OF IMPORTANT RESOURCE ISSUES

- The bog turtle is listed as Threatened by the USFWS and Endangered by Maryland DNR, Wildlife and Heritage Service.
- When working in areas where bog turtles are known to occur (Baltimore, Carroll, Cecil, and Harford Cos.), planners must be cautious of planning practices that may adversely affect the turtles and their habitat.
- One particularly common practice that may adversely affect bog turtles is tree planting, including the establishment of riparian forest buffers.

## REVIEW OF IMPORTANT RESOURCE ISSUES

### Vegetative Practices

- Site preparation can be a major factor for successful establishment of herbaceous and woody plantings, especially on non-cropland areas. Proper site preparation, including weed control and killing of established cool-season grass stands, needs to be communicated to the client and implemented as part of vegetation establishment.
- Deer browse on hardwood tree and shrub plantings can significantly affect survival of seedlings. Tree protection, such as tree shelters or wildlife exclusion fence, is necessary in most areas of Maryland.
- Refer to FOTG Section II-F Plants and Planting Guidance -- especially the Maryland Conservation Planting Guide when planning permanent cover plantings.

# REVIEW OF MAJOR LAND USES AND AGRICULTURE

## Statewide

- Approximately 2 million acres, or 32%, of the total land area of Maryland is used for farming.
- 72% of the total agricultural acreage is cropland, 7% pastureland, 16% forest land, and 5% other agricultural land.
- Maryland agriculture is diverse and includes grain crops (e.g., corn, barley, wheat, soybeans), hay, fruits, vegetables, poultry, dairy, beef and other livestock (e.g., goats, sheep, hogs, alpacas), honey, horticultural and nursery crops, and vineyards.
- Agriculture is the largest commercial industry in Maryland, contributing \$8.25 billion annually to the economy and employing approximately 350,000 people, including nearly 6,000 full-time farmers.



## REVIEW OF MAJOR LAND USES AND AGRICULTURE

### Statewide (cont'd)

- The top five agricultural counties, based on farm acreage, are: Frederick, Queen Anne's, Carroll, Kent, and Dorchester.
- According to the 2017 Census of Agriculture, there were 12,429 farms across the state with an average size of 160 acres. 96% of farms were family-owned.
- 121 farms throughout Maryland were certified organic as of 2019. These farms were located on 17,196 acres and sold \$50.1 million in products, including dairy products, fruits and vegetables, grains, livestock, and poultry.

(Sources: USDA-NASS, 2017 Census of Agriculture; Maryland State Archives website.)

# REVIEW OF MAJOR LAND USES AND AGRICULTURE

## Regional Production

- The Eastern Shore (the land area east of the Chesapeake Bay) is dominated by row crops and poultry production. Most of the poultry production (broilers and roasters) occurs on the mid- to lower Shore; layers (egg-producing hens) are mostly located on the upper Shore. Forestry — specifically, southern pine production — has been a significant land use on the lower Shore, but many of the local wood processors have ceased operations in recent years, making forestry less profitable for landowners.
- Baltimore, Howard, and Montgomery counties mostly have horse and beef operations, with some grain production.

## REVIEW OF MAJOR LAND USES AND AGRICULTURE

### Regional Production (cont'd)

- Harford, Carroll, Frederick, and Washington counties are dominated by dairy production, along with beef and grain production.
- Allegany and Garrett counties are dominated by beef, hay, and forestry.
- Southern Maryland counties (Anne Arundel, Calvert, Charles, Prince George's, and St. Mary's) were dominated by tobacco until about 20 years ago. Since then, most tobacco producers have transitioned to grain crops, fruits and vegetables, nursery crops, small livestock operations, and agritourism. Equine operations are also a significant part of agriculture in Anne Arundel and Prince George's Counties.
- At least 20 urban farms thrive in Baltimore City.

(Sources: USDA-NASS, 2017 Census of Agriculture; Maryland State Archives website.)

## REVIEW OF MAJOR LAND USES AND AGRICULTURE

**Cropland** - Conservation practices that are often used to reduce erosion, improve soil quality, protect water quality, and provide other benefits in Maryland include:

- Conservation Crop Rotation
- Contour Farming
- Cover Crop
- Diversion; Grassed Waterway
- Field Border
- Irrigation System (Micro and Sprinkler); Irrigation Water Mgt
- Nutrient Management
- Pest Management Conservation System
- Residue and Tillage Management (No-Till and Reduced Till)
- Riparian Buffers (Herbaceous and Forested)

## REVIEW OF MAJOR LAND USES AND AGRICULTURE

**Farmstead** - Conservation practices that are often used to improve water quality and provide other benefits in Maryland include:

- Agrichemical Handling Facility
- Animal Mortality Facility
- Composting Facility
- Critical Area Planting
- Heavy Use Area Protection
- Hedgerow Planting
- Roof Runoff Structure
- Roofs and Covers
- Waste Storage Facility

## REVIEW OF MAJOR LAND USES AND AGRICULTURE

**Pasture** - Conservation practices that are often used to improve the forage supply, protect water quality, improve soil quality, and provide other benefits in Maryland include:

- Fence
- Livestock Pipeline
- Pasture and Hay Planting
- Prescribed Grazing
- Stream Crossing
- Watering Facility

## REVIEW OF MAJOR LAND USES AND AGRICULTURE

**Forest** - Conservation practices that are often used to improve forest productivity, reduce erosion, protect water quality, and provide other benefits in Maryland include:

- Firebreak
- Fuel Break
- Forest Stand Improvement
- Forest Trails and Landings
- Tree-Shrub Site Preparation
- Tree-Shrub Establishment
- Woody Residue Treatment

## REVIEW OF LAND OWNERSHIP

- 92% of the land in Maryland is privately owned.
- 96% of farms are family owned. However, approximately 40% of agricultural land (especially cropland) is leased. Many farmers have been farming the same land for many years, but have no written agreement, or they rent annually.
- Control of land is an important consideration when preparing conservation plans and recommending conservation practices.



## ADDITIONAL REFERENCES

- Code of Maryland Regulations (COMAR).  
<https://dsd.maryland.gov/Pages/COMARHome.aspx>
  - Erosion and Sediment Control – 26.17.01 & 26.17.03
  - Stormwater Management - 26.17.02
  - Nutrient Management -15.20.04 - .08
  - AFOs (Water Quality, Discharge Limitations, Permits) - 26.08.01 - .04
  - Maryland Critical Area - 27.01.01 - .14
  - Forest Conservation - 08.19.01 - .06
  - Nontidal Waters and Floodplains - 26.17.04
  - Nontidal Wetlands - 26.23.01 - .06
  - Tidal Waters and Wetlands - 26.24.01 - .05
  - Threatened and Endangered Species - 08.03.08
  - Cultural Resources - 34.04.01 - .09

## ADDITIONAL REFERENCES

- Maryland Department of Agriculture, *Farming with Your Nutrient Management Plan: A Comprehensive Guide to Maryland's Nutrient Management Regulations and Requirements*.  
[https://mda.maryland.gov/resource\\_conservation/counties/FarmingwithyourPlan.pdf](https://mda.maryland.gov/resource_conservation/counties/FarmingwithyourPlan.pdf)
- Maryland Department of the Environment, Maryland Department of Natural Resources, and the State Soil Conservation Committee. *2015 Maryland Soil Erosion and Sediment Control Standards and Specifications for Forest Harvest Operations*.  
[https://dnr.maryland.gov/forests/Documents/publications/ForestHarvestOperationsManual\\_120715.pdf](https://dnr.maryland.gov/forests/Documents/publications/ForestHarvestOperationsManual_120715.pdf)
- Maryland State Archives, Maryland Manual On-Line, Maryland at a Glance, Agriculture (website)  
<https://msa.maryland.gov/msa/mdmanual/01glance/html/agri.html>

## EXPECTED TSP WORKFLOW

- The State Resource Conservationist (SRC) will provide oversight for reviewing conservation plans submitted for review for the Maryland TSP Planner Certification.
  - ECS staff principally involved in these reviews will be the State TSP Coordinator and subject matter experts within the Ecological Sciences and Engineering divisions.
- Conservation Planning Activities (CPAs) and Design and Implementation Activities (DIAs) submitted by certified TSPs will be reviewed by the District Conservationist (DC) at the local USDA Service Center for the required deliverables and functionality within the client's operation.
  - The first two of each type of CPA and DIA will be subject to an immediate spot check of the technical adequacy and quality of work.
  - Any activities submitted by a TSP are subject to additional technical review by a subject matter expert as determined by the DC.
- The SRC will oversee plan reviews for TSP planner certification renewals. TSPs will work with the local DC to make sure the proper environmental evaluations (NRCS-CPA-52) and any other required documents are completed.

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## Certificate of Completion

After viewing this State Specific Training module, please print and sign the completion certificate on the following slide.

The certificate is your acknowledgement that based on the information provided in this module, you have the proper knowledge, skills and ability to conduct planning in this state.

Within your **NRCS Registry profile**, enter the training and upload the signed certificate to verify completion.

# STATE SPECIFIC TRAINING MODULE COMPLETION CERTIFICATE

I, \_\_\_\_\_ hereby verify I have viewed and understand the content of the Maryland State  
*TSP Name*  
Specific Training Module and affirm I have the knowledge, skills, and ability to conduct conservation planning  
services in this state.

\_\_\_\_\_  
TSP Signature

\_\_\_\_\_  
Date