

AGRICULTURAL BEST MANAGEMENT PRACTICES

INTRODUCTION

Agricultural Best Management Practices (BMPs) refer to a set of strategies, methods, and technologies implemented by farmers and land managers to minimize the environmental impact of agricultural activities. These practices are designed to improve the efficiency of farming operations while conserving natural resources such as water and soil. BMPs include a wide range of approaches, from soil conservation techniques and nutrient management to water-use efficiency and pest control. By adopting these practices, farmers can reduce soil erosion, enhance soil fertility, and protect water quality.

The benefits of implementing BMPs are profound, particularly in terms of water and soil quality. By reducing the amount of nutrients,



pesticides, and sediments that run off into water bodies, BMPs help safeguard water quality, reduce the risk of water pollution, and support healthier aquatic ecosystems. On the soil side, BMPs promote soil health by minimizing erosion, increasing organic matter, and maintaining soil structure. This leads to improved soil fertility, enhanced crop yields, and greater resilience against drought and heavy rainfall. Collectively, agricultural BMPs support sustainable farming practices, ensure long-term land productivity, and protect the environment for future generations.

APPLICABILITY

The NRCS evaluates and describes resource concerns as part of a comprehensive conservation planning process that encompasses client objectives, as well as human and energy resources. More specifically, NRCS employs the acronym SWAPAE+H to represent the key resources considered in conservation planning: Soil, Water, Air, Plants, Animals, Energy, and Human considerations. This framework underscores the interconnectedness of these elements and the importance of addressing each to achieve sustainable land management.

IMPLEMENTATION

Implementing BMPs involves a structured, step-by-step approach that begins with assessing the specific needs and challenges of the farm or agricultural operation. The first step is to assess the goals of the farmer. Then the process continues with a

comprehensive evaluation of the land, water, and soil conditions to identify areas where improvements can be made. This involves speaking with the operator/landowner to review past farming practices and current concerns.

Once the assessment is complete, appropriate BMPs are selected based on factors like the type of crops grown, regional climate, the farm's goals, and available funding. Sample resource concerns and practices include:

- Soil Erosion and Degredation
 - No Till Planting
 - Cover Crops
 - Heavy Use Area Protection
 - Grassed Waterway
- Water Quality
 - Nutrient Management
 - Denitrifying Bioreactor
 - Riparian Buffer
 - Stream Crossing

Stormwater BMPs around the homestead are also looked at to contain as many contaminants as possible before entering waterways. After selecting appropriate BMPs, the Conservancy will work with farmers to implement projects with the help of technical support and funding opportunities. This may require involving additional technical experts, such as engineers, as many practices will need to be designed with a high level of precision.

Monitoring and adaptive management are essential throughout the implementation process to ensure the practices remain effective and sustainable over time. By regularly evaluating and refining these approaches, farmers can strengthen environmental stewardship while maintaining or even improving farm productivity. Depending on various factors — such as the type of BMP, seasonal conditions, and weather patterns — the entire process may take anywhere from several months to multiple years to complete.

SUCCESSFUL CASE STUDIES

- Pocopson Creek Dairy Operation
 - BMPs implemented:
 - Three stabilized livestock stream crossings
 - Livestock exclusion fencing along 2,625 linear feet of stream frontage & adjacent wetland area.
 - Funders: Delaware State Drinking Water Revolving Fund, Dockstader Foundation, & City of Wilmington
- Red Clay Creek Equestrian Operation
 - BMPs implemented:
 - Biochar basin & water quality monitoring plan to evaluate the performance of a biochar-based bioreactor
 - Funders: National Fish and Wildlife Foundation (NFWF), & Pennsylvania Department of Environmental Protection (PADEP)
- Honey Brook Row Crop Operation
 - BMPs implemented:
 - Biochar basin
 - Grassed waterway
 - Access road stabilization
 - Three bioswales
 - Stormwater management
 - Ripariran forest buffer restoration (3.5 acres)
 - Funders: National Fish and Wildlife Foundation (NFWF), & Pennsylvania Department of Environmental Protection (PADEP)

The Conservancy receives funding from federal and local government agencies as well as private funders to implement agriculture BMPs throughout our region. Please contact us to schedule a site visit to determine eligibility.

