



United States Department of Agriculture

**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSERVATION ACTIVITY PLAN CRITERIA**

**SOIL HEALTH MANAGEMENT PLAN**

**CODE 116**

**(No.)**

**DEFINITION**

Component of a conservation plan used to evaluate soil health concerns and develop a transitional cropping management plan to improve overall soil health.

**PURPOSE**

This conservation activity plan is used to identify and document soil health resource concerns, problems, and opportunities. Resource concerns considered during plan development are:

- Organic matter depletion
- Compaction
- Soil organism habitat loss or degradation
- Aggregate instability
- Concentration of salts or other chemicals
- Plant productivity and health

**CONDITIONS WHERE CONSERVATION ACTIVITY PLAN APPLIES**

This plan applies to cropland.

**GENERAL CRITERIA**

Develop management alternatives based on landowner-operator objectives and interest in adopting soil health management practices.

Complete a whole-farm cropping system and field inventory. In addition, select 2 representative conservation management units (CMU's) and complete the following:

- State approved in-field assessments based on the national template.
- Laboratory tests according to technical note 450-03, *Recommended Soil Health Indicators and Associated Laboratory Procedures*, and consist of all the following "basic" set of indicators: soil organic carbon, aggregation, bioavailable nitrogen, carbon mineralization (respiration), and permanganate oxidizable carbon (active carbon).
- A comprehensive chemical soil test (pH, EC, organic matter, nitrate-N, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, zinc, and boron) based on state-approved procedure is required.

In arid regions, complete a comprehensive water quality analysis to properly manage irrigation systems and crop salt tolerances. At a minimum, the test should include:

- pH, sodium adsorption ratio (SAR, includes sodium, calcium and magnesium), total dissolved solids (TDS), total alkalinity or carbonates and bicarbonates, chlorides, sulfates, and nitrates.

Based on the results from the inventory and assessments, develop alternatives to address identified soil health constraints and develop a transitional plan of practices for at least a 3-year interval that, as much as practical, follows the 4 principles of soil health:

1. **Minimize soil disturbance** by reducing tillage, managing irrigation, and controlling traffic to improve soil structure and water infiltration, and protect soil organism habitat and organic matter.
2. **Maximize soil cover** using cover crops and surface residue management to reduce nutrient runoff, buffer soil temperature, reduce evaporation, reduce erosion, protect soil organic matter, and provide habitat for biological organisms.
3. **Maximize biodiversity** through the use of diverse crop rotations, multi-species cover crops, and livestock to improve nutrient cycling, break disease cycles, and stimulate below ground activity.
4. **Maximize living roots** by using cover crops and perennial crops that will provide soil biota a continuous food source.

Develop the plan to assist the producer with adopting new practices and to provide alternatives for incorporating innovative technology or management changes. Include the following when developing the plan:

- Adopting new soil health practices or scenarios that promote a higher level of conservation
- Adaptive management (incremental, easily-reversible adjustments to the plan to observe on-site results)

## CONSIDERATIONS

Other considerations to address in the plan include:

- Economic benefits
- On-farm research and demonstration projects
- Transitioning to a whole farm soil health management system

## PLANS AND SPECIFICATIONS

Two hard copies of the conservation activity plan must be produced – one for the client and one for the NRCS field office. Electronic copy can be substituted or asked in addition at the discretion of the NRCS field office. The conservation activity plan must include all deliverables in the Soil Health Management statement of work.

## OPERATION AND MAINTENANCE

Retesting for soil health indicators is recommended at least every 3 years during management transition periods and at least every 5 years once all new management practices have stabilized.

Management activities must be regularly evaluated and adjusted using lessons learned from on-farm experience (successes or challenges).

## REFERENCES

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