

SECTION III - CONSERVATION MANAGEMENT SYSTEMS

Introduction

The function of the Natural Resources Conservation Service (NRCS) is to provide technical assistance to decision makers to protect, maintain, and improve soil, water, air, and related plant and animal (SWAPA) resources. The term Conservation Management Systems (CMS) is an "umbrella" or generic term that encompasses two SWAPA planning levels--the Resource Management System (RMS) level, and the Acceptable Management System (AMS) level. These terms should not be confused with "conservation systems" (Basic Conservation Systems (BCS) and Alternative Conservation Systems (ACS) as required by the Food Security Act (FSA) on Highly Erodible Land.

A Resource Management System (RMS) should address resource concerns associated with soil, water, air, and related plant and animal resources. A RMS will be achieved when the quality criteria for soil, water, air, plants, and animals are met. Quality criteria represent the standards of resource protection, which must be achieved in order to meet the RMS requirements. Only those concerns that are identified during conservation planning assistance will be directed toward achieving the quality criteria established for each of the five resources and their considerations. Guidance is also provided for developing Acceptable Management Systems (AMS) when economic, social, or cultural constraints prohibit RMS development.

Resource Management Systems

The objectives of RMS's are to achieve acceptable levels of quality that prevent resource degradation and permit sustainable use. A RMS is a combination of conservation practices and management associated with a primary land or water use. When a RMS is implemented, the resource will be adequately treated to prevent degradation and permit sustainable use for each of the SWAPA resources for each land or water use.

Conservation planning and application will be directed toward solving resource problems through the implementation of a RMS. A RMS should be developed for each land treatment unit and should be compatible with the decision-maker's objectives.

Each section of the technical guide should be used in planning a RMS. For example, Section I contains general resource references and maps, such as the wildlife habitat evaluation guide, soil condition rating index, C Factor maps, and water quality maps. It also contains cost data, archaeological information, and endangered species information. Section II gives soil and site descriptions and interpretation information while Section IV contains practice standards and specifications. Section V contains information on the effects that may occur when conservation practices are implemented.

Impacts and effects of RMS's are important to monitor. Case studies that show the effects of various conservation practices should be filed in Section V of the FOTG.

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Quality Criteria

Quality criteria establish the minimum acceptable treatment level necessary to adequately address the SWAPA resource concerns identified during the planning process.

Quality Criteria are stated in either qualitative or quantitative terms for each of the resource concerns likely to be encountered in Utah. The RMS criteria are considered met when treatment has been planned that, when applied, will resolve all of the identified resource problems according to the quality criteria. The RMS will be considered applied when all of the conservation practices that make up the system have been installed according to Conservation Practice Standards in Section IV, FOTG. All actions must conform to state, federal, and local laws, programs, or regulations. Where other state agencies regulate and/or enforce quality criteria levels, NRCS will rely on their expertise for monitoring and evaluation.

When the need for an AMS has been forwarded to the state conservationist, appropriate quality criteria will be developed, approved, and documented in Section III, FOTG.

Formulating Conservation Management System Options Using the Effects Concept

One of the first steps in formulating a CMS with a decision-maker is to identify all potential resource problems on the planning area and how they relate to each of the five resources. The effects shown in the Conservation Practice Physical Effects (CPPE) are based on the condition that the practice being evaluated is not presently applied. The user should understand that problems identified on a field or Conservation Treatment Unit (CTU) occur under present management and conditions. Although the physical action or change caused by a practice may be similar between different land uses, the problems of the resource and the effect of the practice on the problem may vary greatly.

The effects as shown in Section III, Guidance Documents, and Section V, CPPE, will need to be adjusted based on the site-specific problem as identified in the planning process. The identified effects are documented as a part of the conservation planning process.

When a land use change is considered as an option, the effects of practices that cause the land use change are evaluated against present conditions. The effects of the other practices necessary to manage the new land use are also evaluated based on the new land use and the relative change to present management of the land.

Example - When a land use conversion from cropland to hayland occurs, sheet and rill erosion would likely be eliminated but other problems could arise that require treatment. The effects of hay planting should be evaluated for the problems identified on cropland. Practices associated with hayland should be evaluated for problems that may occur on hayland.

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Conservation practices are to be installed according to NRCS practice standards and specifications contained in Section IV of the FOTG.

RMS Guidance Documents

Guidance documents for "planning resource management systems" describe the concept of essential, facilitative, and additional practices. These documents are prepared for each major land use. A RMS is developed by combining essential conservation practices with facilitative and/or additional practices that meet the level indicated in the quality criteria for each of the SWAPA resource concerns. A RMS must also meet the cooperator's objectives.

RMS "guide sheets" are prepared for typical resource conditions and problems for each locally recognized land use in accordance with the Technical Guide policy as stated in Part 401 of the General Manual. A RMS can be reported when the operator has made decisions that will meet the minimum quality criteria level for each resource concern for a specific treatment unit. If the operator does not choose to meet the minimum quality criteria level for a resource concern, then an alternative should be shown in the conservation plan that would treat the resource to the minimum level. Locally developed guide sheets are prepared for each major land use including irrigated cropland, dry cropland, hayland, pastureland, rangeland, and wildlife land. Paper copies are filed in Section III behind the green tabs for each major land use. The information contained in these sheets will help evaluate the effects of applying a conservation practice on the SWAPA resources.

Basic and Alternative Conservation Systems (BCS) (ACS)

RMS's should not be confused with "Basic or Alternative Conservation Systems," which are for erosion control only as defined by the Food Security Act (FSA) of 1985 and as amended by the Federal Agriculture Improvement and Reform Act (FACTA) of 1996.

The FSA and FACTA provisions require that a producer must have a conservation plan to maintain eligibility for US Department of Agriculture (USDA) program benefits if a commodity crop is grown on highly erodible lands. The conservation plan is required to address wind erosion, sheet and rill erosion, and ephemeral gully erosion.

For FSA and FACTA purposes, the following definitions and conditions will apply:

1. Basic Conservation System (BCS). A system of conservation practices that will reduce soil erosion to an acceptable soil tolerance level (T) expressed in tons/acre/year. Treatment for a BCS is considered acceptable if the soil loss is equal to or lower than the T value of the soil. Land considered "sodbusted" must meet the BCS level.

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2. Alternative Conservation System (ACS). A system of conservation practices, which also addresses erosion control, and will provide a **substantial reduction** in soil erosion from the **pre-plan** level or permit no **substantial increase** in soil erosion from the erosion occurring under native vegetation. Alternative Conservation Systems are further defined in the National Food Security Act Manual (NFSAM) Part 512. An ACS will be based on technically feasible and practical solutions and may be influenced by unique soil and/or crop situations.

3. The **pre-plan** condition and resultant erosion level for an ACS is defined as the condition that existed before conservation measures were applied. **Substantial reduction** is defined as 75 percent reduction of the potential erodibility, **not to exceed (NTE)** from 2 to 4 times the soil loss tolerance level for the predominantly highly erodible map unit in the HEL field as shown below:

<u>Soil Loss Tolerance</u>	<u>Formula for Determining Max. Allowable Erosion</u>	
	<u>Wind</u>	<u>Sheet and Rill</u>
1	$C * I * 0.25 / 100$ NTE 1*4	$R * K * LS * 0.25$ NTE 1*4
2	$C * I * 0.25 / 100$ NTE 2*3	$R * K * LS * 0.25$ NTE 2*3
3	$C * I * 0.25 / 100$ NTE 3*2.5	$R * K * LS * 0.25$ NTE 3*2.5
4	$C * I * 0.25 / 100$ NTE 4*2.25	$R * K * LS * 0.25$ NTE 4*2.25
5	$C * I * 0.25 / 100$ NTE 5*2	$R * K * LS * 0.25$ NTE 5*2

4. **Substantial increase** is defined as any soil erosion level that is greater than 25 percent of the present erodibility levels under native vegetation, not to exceed the soil loss tolerance of the predominantly HEL mapping unit in the HEL field. Any conservation practice or practices that when applied individually or in combination that reduce erosion to the defined level will be considered an ACS.

5. On non-irrigated cropland where yields are low (field offices will set a low yield level for each crop) due to drought, disease, etc., a maximum of three non-inversion tillage operations will be allowed in place of the stated residue requirements (records must be kept to verify yields and tillage operations). No two consecutive years of summer fallow will be allowed. Eliminating fall tillage, and/or substitution of herbicides for tillage will be encouraged. This treatment will be considered an ACS during the year it is applied even though the erosion reduction or stated residue levels are not achieved.

6. On irrigated hayland, where practice standards such as Nutrient Management (590), Pest Management (595), Forage Harvest Management (511), or Prescribed Grazing (528A) are included in a FSA compliance plan, management items (i.e. stage of harvest, nutrient management, pest management, etc.) that are not pertinent to erosion control are not

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required for compliance. The plan, however, must clearly identify the items that are required for compliance.

7. Utah applied for and received a waiver on irrigated hayland. The waiver eliminates the requirement for maintaining a separate producer signed FSA HEL plan. A generic FSA HEL plan can be provided to the producer. Information related to the waiver on irrigated hayland is to be filed behind the brown tab labeled Basic Conservation Systems. The waiver applies only to:
 - areas with C values of 100 or less and I values of 86 or less
 - lands designated as HEL due to wind erosion
 - lands in MLRA's D28A, D29, D34, D39, and E47
 - lands where the rotation consists of 5 or more years of alfalfa and/or grass and from 1 to 4 years of small grain or corn or other forage crops
8. Each FOTG, Section III, will contain guide sheets for basic and alternative conservation systems if the field office contains highly erodible lands. They are to show alternative combinations of practices and management, which meet erosion reduction criteria for typical conditions found within the field office such as common land uses, soil tolerance levels, residue levels, and crop rotations. Each guide sheet will be labeled to apply only to FSA/FACTA policies and should have the approval of the soil conservation district. The guide sheets must also identify whether the system meets a BCS level, ACS level, or is not acceptable for FSA/FACTA purposes.

Use of FSA/FACTA Conservation Systems Guide Sheets

The Conservation Systems Guide Sheets are to be used for FSA/FACTA planning. They are to be developed to identify typical erosion rates within the field office and county for typical rotations and varying levels of residue management. The systems are to be identified as meeting either a BCS, ACS, or are not acceptable with (NA) FSA/FACTA guidelines.

Guide sheets are to be developed for CTU's and/or soil T values for irrigated and non-irrigated cropland and hayland where applicable.

The Conservation Systems Guide Sheets are to be developed to represent systems applicable on a typical site. The guide sheets are to include C, I, K, V, and L factors for WEQ and/or R, K, LS, C, and P factors for USLE, whichever is applicable in the field office. Applicable soil mapping units may be included on the appropriate guide sheets. When RUSLE is released, additional guide sheets are to be developed.

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An individual conservation plan that is representative of the conditions identified on the guide sheets, does not need an erosion worksheet in the case file. Typical erosion rates can be found in the guide sheets and are applicable for documenting assumed erosion rates for FSA planning purposes. Farms with unusual conditions or management systems not representative of the guide sheets must be documented in the case file.

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Information and Guidance for Evaluating the Economic, Social, and Cultural Resource Conditions for Acceptable Management Systems

This guidance enables State Conservationists (STC's) and other Natural Resources Conservation Service (NRCS) employees working with the Soil Conservation District or other state and local individuals or organizations to:

- Evaluate the economic, social, and cultural conditions in the resource area
- Determine if an Acceptable Management System (AMS) is necessary, and
- Determine the condition when an AMS will apply.

In addition, this guidance may help NRCS employees determine the level of treatment or quality criteria required by an AMS.

Background

NRCS's mission is to protect, restore, and improve soil, water, and other resources. NRCS accomplishes that mission by providing technical assistance to land users to help them develop and implement a Conservation Management System (CMS). Two types of CMS are considered here. They are Resource Management Systems (RMS) and Acceptable Management Systems (AMS).

A Resource Management System is the combination of conservation practices and management identified by land or water uses that, when installed, will prevent degradation and permit sustained use by meeting criteria established in the FOTG for treatment of soil, water, air, plant, and animal resources. Each land user will be offered a RMS option if one can be developed. Where an individual is unable to agree to protect the resources to an RMS level of treatment at the present time, but where they may be able to achieve that level of protection in the future, NRCS will provide assistance to implement conservation treatments that achieve some resolution of the identified resource problems. These treatments are considered a part of "progressive planning" towards a RMS.

An Acceptable Management System is a combination of conservation practices and management that meets criteria established in the FOTG by the STC, that is feasible within the social, cultural, or economic constraints identified for the resource condition. AMS's were designed to help accomplish societal goals yet avoid undue punishment of a group of land users in those instances where the social, cultural, or economic conditions prevent the feasible achievement of an RMS. AMS's are not developed to meet the individual needs of a single land user but for a large area.

AMS information and guidance – No AMS's are currently approved for use in Utah. The State Conservationist should be contacted for information and guidance in developing and obtaining approval for an AMS.

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Permits

When implementing any level of a CMS, it is the responsibility of the land owner/operator to comply with all federal, state and local laws, ordinances, or regulations related to their agricultural activities. While some activities may require a permit others may require documented decisions from the appropriate agency that a permit is not required.