

## CONSERVATION PRACTICE PHYSICAL EFFECTS

### INTRODUCTION

The Conservation Practice Physical Effects (CPPE) displays the natural resource physical effects that conservation practices have on resource problems/concerns. A scale of +5 through -5 is utilized to provide a numerical evaluation of practice effects for each resource concern. The ratings are based on experience and available technical information. In a given planning scenario, each of the soil, water, air, plant, and animal resources may have multiple natural resource concerns. Onsite effects of practices are generally greater than offsite. From a spatial perspective, the effects are minimized as distance from the problem or treatment increases.

The key elements when reviewing the CPPE are (1) the effect the practice will have on the “target” resource concern(s), and (2) possible effects on “non-target” resources and resource concerns in both the practice area and in the wider watershed. Proper conservation planning relies in part upon not transferring a resource concern to another area, and not creating a new resource concern with respect to practice/system installation. Stated another way, the key question that should be asked when reviewing the CPPE is “If this practice is applied, what effect will it have not only on the target problem, but also on all other resources?”

### CPPE Matrix Description

In the CPPE tables the major effects of a single conservation practice on resource concerns are identified. An interdisciplinary team evaluated the practices and concerns and provided a score applicable to the average condition. The purpose of the CPPE tables is to help planners develop and maintain a strong awareness of the effects of conservation practices on all the natural resources and provide a working knowledge base to decision makers who seek to understand the environmental implications of potential actions. The CPPE scores may be interpreted as shown in Table 1.

TABLE 1 – CPPE SCORES AND INTERPRETATIONS

Scores and Evaluations			
Resource Improvement		Resource Degradation	
+5	Significant	-1	Slight
+4	Moderate to Significant	-2	Slight to moderate
+3	Moderate	-3	Moderate
+2	Slight to moderate	-4	Moderate to Significant
+1	Slight	-5	Significant
0		No effect	

A decrease or increase in the resource concern\condition indicates the direction the installed practice has on the resource problem. For example, a practice may moderately decrease an erosion problem and slightly increase a water quality problem. The magnitude and direction of the conservation effect are basically identified in the numerical score. That is, positive score (+1 through +5) are interpreted as increasingly improving the resource condition as the score increases. The converse is true for negative scores and a score of zero indicates no effect.

The CPPE is displayed in a matrix comparing all practices and effects. In the matrix the resource problems are listed at beginning of each row and the conservation practices are at the head of each column. A brief description of problems and practices are also included. The effect the conservation practice has on the resource problem is found at the intersection of the column and row.

The first assumption for the use of the CPPE is that there is/are current resource concern(s) and the concern(s) can be addressed by the installation of a conservation practice/system. That is, the practice or system is applicable to the resource concern(s) and can be installed in the landscape or farmstead setting. With respect to the score, all conservation practices are assumed to be installed according to NRCS standards and specifications found in Section IV. The matrices address broad, general effects that may be expected from the practice application.

The effects shown in the matrices in Section V may be adjusted to reflect site specific conditions. Use the following guidelines when developing site specific effects:

Evaluate each practice for the effect it will have on the area being planned (e.g., a field or a conservation treatment unit (CTU)), for both short and long term effects on the immediate area and within the watershed. These evaluations are also very relevant to the completion of the Environmental Evaluation Worksheet (form NRCS-CPA-52) required for agency environmental compliance purposes.

The following should be kept in mind when using the CPPE tables:

- All practices will be installed according to practice standards in Section IV of the FOTG.
- Do not "reach" for effects. Not all practices have an effect on all possible resource concerns.
- Assume that each practice is applied independently of others.
- Do not evaluate "systems" practices (e.g., Planned Grazing, Prescribed Forestry). That is, evaluate each of the component practices of the system type practices.
- Assume that the practice being evaluated is not presently applied.
- Field configurations and management may change as the landowner makes decisions that will facilitate reaching his/her objectives. Therefore, evaluate practices based on fields or Conservation Treatment Units (CTU) that result from planning decisions, not necessarily for the original field evaluation.
- When a land use change is considered (1) evaluate practices needed to change the land use against present conditions, and (2) anticipate through the field data collected the possibility of unrecognized resource concerns or opportunities after the land use change. Economically speaking, evaluate practices necessary to manage the new land use in concert with expected future conditions.

The planner needs to recognize the effect of applying conservation practices in order to select combinations of practices that solve the identified or predictable problems without creating new problems. In addition, secondary benefits should be identified. The effects concept is applicable for the formulation of Conservation Management Systems (CMS) including those for Resource Management Systems (RMS) options for CTUs or other watershed or regional scale planning areas. The CPPEs are also to be used to assist in development of FOTG guidance documents and to explain resource problems and potential solutions to the decisionmaker and other stakeholders as necessary.

### **EFFECTS FOR GUIDANCE DOCUMENTS**

Two worksheets, the Conservation Treatment Effects Information sheet and the Conservation Effects Worksheet, can be used in conjunction with the CPPE to aid the planning process.