

Conservation Practice Physical Effects (CPPE)

Introduction

The CPPE table displays a numerical rating of physical effects that each conservation practice may have on resource concerns for the five primary resources – Soil, Water, Air, Plants, and Animals (SWAPA). Each resource has multiple concerns associated with it that may be affected by implementation of conservation practices. This estimation of physical effects is based on professional experience and available technical information.

CPPE effects were developed in the context of field or conservation management unit application (i.e., for the site level), and indicate the general resource effects and level of impact when a specific practice has reached the designed, functional state. Short-term effects that may occur during construction, installation, planting, etc. were not included in the rating. Keep in mind that most permanent vegetative practices take months to a decade or more to become fully functional, while most structural practices are fully functional immediately or very soon after installation.

Numeric Values Used in the CPPE Table

In the CPPE table, the numeric values are indicative of the magnitude of the practice's effect on the resource concern, assuming the practice is fully functional. Effect values are:

Numeric Effect Values in CPPE Table	Description of Effects on Resource Concerns
5	Substantial Improvement (positive effect)
4	Moderate to Substantial Improvement
3	Moderate Improvement, or Slight to Substantial Improvement
2	Slight to Moderate Improvement
1	Slight Improvement
0	No Effect
-1	Slight Degradation (adverse effect)
-2	Slight to Moderate Degradation
-3	Moderate Degradation, or Slight to Substantial Degradation
-4	Moderate to Substantial Degradation
-5	Substantial Degradation

Effect values are defined as:

- **Improvement** (positive value) denotes that the resource concern (problem) is likely to diminish if the practice is implemented, and the resource will be better protected;
- **Degradation** (negative value) indicates that the resource concern is likely to become worse if the practice is implemented, and resource degradation will occur;
- **Slight** signifies a noticeable but limited increase or decrease in the resource concern commensurate with the potential influence at the site level (i.e., generally no more than a 10 percent change in measurable quantities achievable at the site level);
- **Moderate** describes a condition more than **Slight** and less than **Substantial**;
- **Substantial** denotes that the practice clearly and markedly increases or decreases the resource concern (i.e., usually more than a 50 percent change at the site level);
- **No Effect** indicates that the fully-functioning practice normally causes no change, a negligible change, or a "net" no effect on the resource concern.

Considerations for Using CPPE Ratings

1. Implementation of a conservation practice may result in a substantial effect at the site level that, when evaluated at a landscape or watershed scale, may be of a lesser degree. Beneficial watershed effects depend on the cumulative impacts of individual practices applied in many places and as part of resource management systems.
2. The CPPE ratings are for individual practices, not for groups of practices. It is recognized that practices are seldom planned separately. When a system of practices is planned and installed, a considerable synergistic effect can occur. Because the effects ratings focus on single practices, system effects and their magnitudes are not captured in the CPPE ratings. However, the additive effects of a group of practices should be considered during the planning and environmental evaluation process.
3. Even though not rated in the CPPE, short-term effects are an important aspect of conservation planning, particularly when dealing with engineering or construction-type practices that require significant ground disturbance. Short-term effects of preparing and installing a practice may cause undesired but temporary consequences. Such consequences are usually anticipated and mitigating measures can be taken.

For example, during site preparation and installation of Grassed Waterway to treat a gully, soil disturbance can be substantial. When such disturbance is adjacent to surface waters, a moderate to substantial amount of sediment can reach the watercourse unless mitigating actions, such as sediment control measures, are taken. Typically, the entire disturbed area is seeded and mulched shortly after construction to minimize sediment delivery. Thus, the potential amount of sediment transport from the construction site is reduced to acceptable, low levels and represents an insignificant amount when compared to the long-term sediment production if the gully is left untreated.

4. CPPE ratings are indicative of the effects of a practice as most commonly planned and implemented. These ratings may not accurately portray the effects when a practice is applied on a specific site, because some practices can result in offsetting increases and decreases in a resource concern. For example, the implementation of Upland Wildlife Habitat Management could improve cover/shelter for one group of animals while adversely affecting cover/shelter for another group. The fact that habitat for a favored group is improved does not necessarily outweigh the adverse effect on the other group. Site-specific effects such as this need to be taken into account during the planning process.