

# Conservation Measurement Tool

## Conservation Performance Scoring for 2014-1

**The Conservation Measurement Tool (CMT) evaluates CSP applications using a point based system to measure a relative environmental benefit. The tool evaluates both existing and proposed (i.e., additional) activities. The tool's algorithm is designed for equity in order to score an applicant's current and planned environmental performance and to generate conservation performance points to be used for ranking and payment purposes. Below is an explanation of the key CMT scoring principals:**

- All scoring for the relative environmental benefit impact is measured by question, enhancement and/or conservation practice responses. Each measure is rooted in Conservation Practice Physical Effects (CPPE) scoring tables using the -5 to +5 scoring system.
- Each question, enhancement and/or practice is scored against 8 macro-resource concerns. Each macro-resource concern is further partitioned into 28 micro-resource concerns. (The macro resource concerns and micro-resource concerns are a subset of the total number of resource concerns that NRCS considers when doing conservation planning.) The chosen resource concerns are considered to best represent the significant resource issues on working lands and are readily quantifiable.
- The tool is size neutral. Operations of similar composition, despite their size, have the potential to score a like number of points.
- Each land use is evaluated separately. For applications with multiple land uses, stewardship threshold values have been normalized between land uses.
- The scoring methodology utilized by CMT involves scores for determining an annual payment, a supplemental payment (where applicable), and a ranking score.

The following is an explanation of the payment point scoring methodology used in CMT.

### A. Annual Payment - Conservation Performance Payment Points

- Conservation performance payment points for each land use are the sum of the actual Existing Activity Points (aEAP) and the sum of the actual Additional Activity Points (aAAP).
- "Actual" points are a 'true' point value (i.e., what is being done or will be done). A 'true' performance point is closely aligned with the CPPE scores assigned to each existing or additional activity metric.
- If an applicant has chosen to implement the Resource-Conserving Crop Rotation activity, the points associated with this activity are subtracted from the aAAP for cropland because this activity has a separate payment structure.

Below is an explanation of variables that impact the CMT payment.

### 1) Existing Activity Points for Payment

- *Weighting*
  - Cropland and pastureland micro resource concern score totals for each rotation or mixture are weighted based on the acreage each rotation or mixture contributes to the total acreage for that land use.
  - Rangeland is weighted only on the land use acreage since it is not divided into rotations or mixtures.

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- Forest land is treated separately and simply totaled by micro-resource concern.
- Air quality and energy points are proportioned evenly over each eligible land use.
- Water points are proportioned evenly over each eligible land use selected that has water.

### 2) **Additional Activity Points (enhancements, conservation practices, research and demonstrations, pilot projects and resource conserving crop rotations) for Payment**

- *Weighting*
  - Points are weighted within a macro resource concern regardless of the land use. This ensures, for any given effect for an activity, the effect will represent a truer reflection of the designated benefit garnered by the activity toward the macro resource concern.
- *Years of Generated Benefits*
  - The aAAP is determined for each land use by the number of years scheduled, the percentage of the total applicable amount that is scheduled, and the percentage of the total land use amount scheduled.
  - Applicants can schedule enhancements, research and demonstration, pilot projects, and resource-conserving crop rotations starting in years 1 through 3 of their contract period.
  - Applicants can schedule conservation practices during years 2 through 5 of their contract period.
  - Applicants schedule the amount of the additional activity they plan to install. The earlier in the contract period and the greater the amount of the additional activity they schedule, the greater the number of conservation performance points accrued.

### **B. Conservation Performance Ranking Score**

Below is an explanation of variables that impact the CMT payment.

#### **1) Existing Activity Points for Ranking**

- *Weighting*
  - Cropland and pastureland micro resource concern score totals for each rotation or mixture are weighted based on the acreage each rotation or mixture contributes to the total acreage for that land use.
  - Rangeland is weighted only on the land use acreage since it is not divided into rotations or mixtures.
  - Forest land is treated separately and simply totaled by micro-resource concern.
  - Air quality and energy points are proportioned over each eligible land use as weighted by the acreage in each eligible land use.
  - Water points are proportioned over each eligible land use selected that has water as weighted by the acreage in each eligible land use.

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- *Size Neutral Normalization*
  - For applications that have multiple land uses, the total points for each macro-resource concern are multiplied by the percentage of that land use to the total number of acres.
  - Forest land is totaled up separately as it will be evaluated independently from any other land use.
- *Adjusted by the Potential Maximum Points*
  - Ranking existing activity points (rEAP) are adjusted by the potential maximum existing activity points (pEAP) available to an applicant. Filtered questions answered “No” by the applicant are removed from the applicant’s pEAP for the respective land use(s).
  - The stewardship requirements for each macro-resource concern is determined by dividing rEAP by pEAP then multiply the result by 100 (EAP).

By each land use, the priority and non-priority macro resource concerns met at time of application and by the end of the contract are evaluated to determine if an applicant meets the minimum level of eligibility for the program. This is accomplished by comparing the total points for each macro resource concern to a threshold value established for each macro resource concern by land use. The stewardship thresholds were established using the CMT on a number of sample farms that had been evaluated by professional conservationists for the level of conservation on the farm. The threshold values were matched to farms that were judged to be meeting but not exceeding a good level of conservation stewardship.

### 2) **Additional Activity Points (enhancements, conservation practices, research and demonstrations, pilot projects and resource conserving crop rotations) for Ranking**

- *Weighting*
  - Points are weighted within a macro resource concern regardless of the land use. This ensures, for any given effect for an activity, the effect will represent a truer reflection of the designated benefit garnered by the activity toward the macro resource concern.
- *Years of Generated Benefits*
  - The aAAP is determined for each land use by the number of years scheduled, the percentage of the total applicable amount that is scheduled, and the percentage of the total land use amount scheduled.
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activity they schedule, the greater the number of conservation performance points accrued.

- *Adjusted by the Potential Maximum Points*
  - The aAAP is adjusted by the potential number of points available from additional activities (pAAP). The pAAP is based on the average points for all additional activities triggered by the operation baseline data responses times a multiplier for each land use. The multipliers are used to account for the different number of activities available for each land use.

### 3) Ranking Factors

The conservation performance ranking score is used to determine the priority of funding for an applicant. Applicants will be funded starting with the highest score and working down the list until acres are exhausted.

The performance ranking score is based on 4 factors:

1. The level of conservation treatment on priority resource concerns at the time of application.
2. The degree to which treatment on priority resource concerns increases conservation performance.
3. The number of priority resource concerns to be treated to meet or exceed thresholds by the end of the contract.
4. The extent to which other resource concerns will be addressed to meet or exceed stewardship thresholds by the end of the contract.

Factor 1 is determined by the following process:

A = Sum of the EAP for all priority resource concerns for all land uses in the application.

B = Total number of priority resource concerns multiplied times 100.

Factor 1 score =  $(A/B) \times 1000$

Factor 2 is determined by the following process:

C = Sum of aAAP for all priority resource concerns for all land uses in the application.

D = Sum of pAAP for all priority resource concerns for all land uses in the application.

Factor 2 score =  $(C/D) \times 1000$

Factor 3 is determined by the following process:

E = Sum of the number of priority resource concerns that are met at the time of application and the number of priority resource concerns that the applicant agrees to meet during the contract period.

F = Sum of the number of priority resource concerns (3 to 5).

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Factor 3 score =  $(E/F) \times 1000$

Factor 4 is determined by the following process for each land use:

G = For non-priority resource concerns that are met at time of application or the applicant agrees to meet during the contract period, sum of aAAP.

H = For non-priority resource concerns that are met at time of application or the applicant agrees to meet during the contract period, sum pAAP.

Factor 4 score =  $(G/H) \times 1000$

Each ranking score factor is multiplied by a weighting factor. The weighting factors are currently set at 25% for each factor.

The final ranking score is the sum of the weighted factors for 1, 2, 3, and 4.

The performance point matrix for existing activity questions and additional activities is available at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/>.

The points are programmed in the CMT, along with all controls, filters, and algorithms.