



Natural Resources Conservation Service
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RANGE TECHNICAL NOTE NO. NM-106

SUBJECT: ECS – Grazing Lands Conservation Planning Tool

Purpose: To distribute information to area and field and soil survey offices.

Effective Date: Effective when received.

Filing Instructions: File in office reference library also maintained on New Mexico NRCS Web page.

Summary. The spreadsheet used by conservation planners in New Mexico to calculate total plant production and similarity index is being replaced by the Grazing Lands Conservation Planning Tool, which calculates total suitable livestock forage in the sampled plant community and more accurately calculates similarity index.

Background. Knowing the amount of a site's plant production that is suitable as livestock forage is key to effective conservation planning; however, the spreadsheet currently used by conservation planners in New Mexico ["ws528a(1)-(1-2010).xls"] only calculates total plant community production, regardless of forage suitability. This same spreadsheet also can produce similarity index (SI) values greater than 100%, even though SI cannot exceed 100% by definition.

SI is the ratio (expressed as a percentage) of the total allowable production (under representative value [RV] conditions) of all species on a site to the total RV production in the Ecological Site Description (ESD) reference plant community. ESDs place species with similar traits into groups (warm-season grasses, annual forbs, etc.). A species' allowable production is limited to its reference community RV production ("species limited"), and the total allowable production of all species within a group is limited to its reference community group RV production ("group limited"). The total community production value listed in the ESD equals (or should equal) the sum of the production values of all groups in the community; this value is often much less than the sum of the production values of all individual species.

The spreadsheet currently used by conservation planners in New Mexico calculates SI using species-limited, but not group-limited, allowable production. As a result, the sum of species allowable production values (the numerator in the SI ratio) may exceed the total community production value, producing an SI greater than 100%. To avoid this problem and calculate SI more accurately when not group-limited, the sum of species allowable production values should instead be divided by the sum of the production values of all species in the reference community. Additionally, ESDs list production values by species for low- and high-production conditions, but not RV conditions, leading to inconsistency among conservation planners in determining a species' allowable RV production, and hence, SI.



The Grazing Lands Conservation Planning Tool. The Grazing Lands Conservation Planning Tool is a spreadsheet that calculates both the amount of plant production on a site that is suitable as livestock forage and total plant community production. It also increases consistency among conservation planners in determining SI by generating RV production values for all species in the reference community by averaging their respective low- and high-production values. The Grazing Lands Conservation Planning Tool more accurately calculates SI using species-limited, but not group-limited, allowable production by dividing the sum of species allowable production values by the sum of the RV production values of all species in the reference community. Until a spreadsheet is developed that calculates SI using species-limited and group-limited allowable production, conservation planners accustomed to the "417-style" format of "ws528a(1)-(1-2010).xls" are encouraged to use the Grazing Lands Conservation Planning Tool to calculate SI when applying the Prescribed Grazing Conservation Practice Standard (Code 528).

Two versions of the Grazing Lands Conservation Planning Tool are posted on the NRCS New Mexico Technical Resources Web site (<http://www.nm.nrcs.usda.gov/technical/tech-notes/range.html>). One version contains sample data for illustrative purposes, the other contains no data and is ready to use. Accompanying the spreadsheets is a field sheet to record sample-site data.

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If you have any questions about the Grazing Lands Conservation Planning Tool, please contact John Tunberg, State Rangeland Management Specialist, at 505-761-4488 or Michael Carpinelli, MLRA Rangeland Management Specialist, at 505-285-6963 ext. 106.



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