

TECHNICAL NOTES

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Prescribed Grazing (528) Practice Requirement Sheet and Specification Development Support Tool (528_spec_tool_R5a.xls)

This tool was developed by California State Rangeland Management Specialist, Jon Gustafson in conjunction with Dr. Marc Horney, CA Area I Rangeland Management Specialist with essential support and feedback from California field Rangeland Management Specialists and Jeff Repp, Rangeland Management Specialist, West National Technology Support Center, Portland Oregon. Supporting references are noted in the California Prescribed Grazing (528) conservation practice standard.

Summary

The 528_spec_tool_R5a.xls allows planners to improve consistency in their work products while allowing for flexibility of data capture and processing. A standard Microsoft Excel[®] 2003 workbook, the tool allows users to update data as needed as the planning environment changes. Components of the workbook support the development of Prescribed Grazing practice requirement sheets based on the Prescribed Grazing (528) conservation practice standard.

This version of 528_spec_tool_R5a.xls replaces previous versions having a release date earlier than November 30, 2009. The recent version of this tool will be stored in electronic format available for downloading in Section I of the eFOTG in the Technical Notes section under Range-TechNote-54 Prescribed Grazing Spec Tool.

Background

The national conservation practice standard for Prescribed Grazing (528) has been modified a number of times since 1997, which has led to more extensive planning requirements on the part of the planner. Prior to 1997, the 528 conservation practice was known as Proper Grazing Use, and the practice standard provided little guidance regarding what types of information needed to be gathered in order to adequately implement the practice. With clarifications in the practice standard and the updating of the Statement of Work for the practice, it became clear that a more systematic and organized method of capturing and processing information would be essential in meeting agency planning requirements.

NRCS responded at the national level to the need for planning support via the release of Grazing Lands Analysis (GLA) and later, the more advanced Grazing Lands Spatial Analysis Tool (GSAT). During testing of early releases of GSAT in the State of California, it was determined that limitations in baseline data reduced the immediate usefulness of GSAT in many areas of the state; it was also found that GSAT, while providing excellent data output, required large amounts of data input across a wide range of categories. In addition, the aforementioned analysis tools did not account for the unique planning needs of California's annual grasslands, which require consideration of residual dry matter (RDM) as a key calculation component.

Introduction

This Tech Note is not a user's manual. Those not familiar with how to use Microsoft Excel[®] software will likely be challenged. It is highly recommended that a Microsoft Excel[®] tutorial be taken on how to use the software program prior to attempting to process data or modify the spreadsheet.

As with all programs which process data input, good data quality is critical in arriving at the best output. Unfortunately, under rangeland conditions, annual variability in forage production as a result of weather conditions alone adds a substantial amount of ongoing uncertainty. Consequently, this tool and more advanced tools, while providing for operation-wide organization and processing of data, are not superior to on-site monitoring by the operator.

528_spec_tool_R5a.xls (hereafter referred to as "the spec tool") is intended as an early and intermediate planning tool leading to data processing and analysis at a far more detailed level using GSAT and similar software packages. Although lacking the data-mining and geo-referencing power of GSAT, the spec tool affords the user comparatively rapid calculations in a mostly compartmentalized fashion; this provides critical planning information on demand (forage requirements, forage production, supplemental feed conversions) as the planning environment and customer needs change.

Use of the spec tool is not a substitute for technical knowledge of the planning environment. Planners of all skill levels are strongly encouraged to use this tool to communicate with the customer and other planners regarding site conditions, constraints, monitoring methods and existing management. By working together as a team, a better product for the customer can be developed.

The spec tool is designed to allow the planner to capture and process data as needed considering the planning environment. It is intended that site-specific copies are to be maintained in digital format in conjunction with the customer's folder within Customer Service Toolkit (CST); it is advised that customer-specific files be stored under the Resource Inventory folder in CST.

Rationale

The California-specific limitations of the mentioned planning tools, plus emerging planning requirements, forced most planners to struggle to independently develop custom spreadsheets and templates for drafting practice requirement sheets. In response to the situation, the Rangeland Management Specialists in California supported the State Rangeland Management Specialist in developing the 528_spec_tool_R5a.xls Excel® workbook through several revisions and updates.

It is appropriate to ask the question, “Why process this information? Why not base practice performance on a blanket RDM or utilization standard and call it good?”

The simple answer is that a one-size-fits all solution is rarely, if ever applicable. All management practices, including Prescribed Grazing (528), are most closely aligned with a cyclical planning process because successful management techniques continually adjust based on the planning environment. The continual shifting of the planning environment demands adherence to common sense principles in management, not the least of which is the flexibility to use the best solutions based on the goals, problems and resources available.

Several requirements expressed in both the state and national conservation practice standards for 528 are implicitly linked to the core (“cardinal”) principles of grazing lands management. Those who have taken the three module remote course “Understanding Prescribed Grazing (528)” will recall the linkages between those principles and the conservation practice standard requirements. For those who have not taken the course, let it suffice here list the cardinal principles of grazing lands management:

- Match the proper class (or type) of animal with the grazed landscape
- Implement a proper stocking rate (forage-animal balance)
- Graze during the appropriate season
- Establish appropriate livestock distribution on the operation – both in time and in space

One might consider that the requirements under the national conservation practice standard are intended to provide the planner with the basic foundation of information needed to begin to efficiently and effectively address the cardinal principles of grazing lands management. In other words, those factors required under the standard are those needed in order to identify the best management solutions based on the goals, problems and resources available.

The spec tool itself is arranged in a manner consistent with both the planning requirements of the conservation practice standard as well as the conservation planning process. Certain aspects of planning are not addressed by the spreadsheet such as the identification of resource concerns, development of conservation treatment alternatives and others components which have been addressed by other tools at the national, state and/or local level. It is emphasized that this and the other tools mentioned should be used

as necessary in an iterative or cyclical conservation planning process where the product at the end of each cycle is a flexible conservation plan which better addresses SWAPA+H.

Tool Components

The spreadsheet is organized in a series of tabs each of which contain components which directly address the requirements of the 528 conservation practice standard. Correctly completing each tab allows for the development of a summary sheet which can be used to directly support a practice requirement sheet. That being said, it should be noted that while this spreadsheet will perform this task, as with all conservation practices *it is critical to consider and understand the details contained in the conservation practice standard and to follow the conservation planning process.*

Best results of use of the tool are found by completing each tab from left to right. In particular, the first three tabs should be completed before determining what data is needed in order to implement the 528 practice.

Notes on each tab are described below.

Instructions

Basic instructions for use of the tool are included in the spreadsheet on the tab labeled *Instructions*. Notes are shown throughout the spreadsheet and are displayed in two different ways, either as a text box which is always visible and appears on the printed copy, or as a comment associated with a specific cell as indicated by the colored triangle in the upper right corner of the cell.

Start

This tab helps the planner link the goals of the landowner with the purpose of the practice as well as capture key information needed to complete the practice requirement sheet. Information entered on this tab cascade across several other tabs including the operation name and location.

Contingency & Monitoring Plns

This tab helps the planner to rough out the concepts for the contingency plan and monitoring plan as consistent with the conservation practice standard. Most importantly, it helps the planner examine the goals of the practice in conjunction with the requirements of the practice standard in order to develop a monitoring strategy which conforms to both.

Site Constraint Assessment

One of the most important aspects of developing conservation alternatives is considering the limitations and capabilities of the landscape. This tab helps the planner and the customer consider and document both limitations and, inferentially, the capabilities of the landscape. Additionally, once the *Forage Inventory* is completed, the relative advantage of addressing various limitations (site constraints) on the landscape become more logically described thus setting the stage for subsequent planning cycles.

Forage Requirement

In order to develop a balance between the forage produced and forage demand by livestock and wildlife while protecting the resource base, a herd inventory is entered into this tab. The tab allows for two approaches, the basic approach which utilizes standard animal unit equivalent values from the National Range and Pasture Handbook (NRPH), and a more advanced approach which allows the user to assess the forage demand based on animal body weight. This tab works in conjunction with the *Feed Detail* and *Forage Inventory* tabs to create the site-specific forage to animal balance as required under the conservation practice standard.

Feed Detail

The data from this tab is supplied to the *Forage Requirement* tab in order to consider how much pressure is taken off of the standing forage as a result of feeding roughage. It allows the user to segregate out a portion of the total herd which may be fed instead of basing the calculations as though the entire herd is fed. The output on this page provides clues as to where opportunity for cost savings can occur as well as a better understanding of how the operation is run on an annual basis.

Forage Inventory

This tab processes the vegetation production data for the entire operation. It interacts with the *Forage Requirement* tab and feeds data directly to the *Site Constraint Assessment* tab. Forage production data is entered on a field-by-field basis and is grouped by the user into ecological sites and/or production areas where production varies significantly from what is typical for the ecological site. Within each field the user determines how much of the forage within each ecological site or production area is useable by the livestock as well as how much of the forage is physically accessible. Calculations of available forage are based on either a harvest efficiency approach or a RDM approach as consistent with the vegetation growing within the field and the goals for management of each field.

528 Spec Checklist

This tab is specifically for the organization and tracking of information related to planning on the operation under consideration. In addition to providing a quick reference to the user, it also helps communicate to other planners and reviewers the status of the planning process for the Prescribed Grazing practice. It identifies via color code and font settings the required aspects of the 528 conservation practice standard as well as reminds the user as to next steps needed and where data gaps exist.

Summary

Drawing on the previously mentioned tabs, this tab compiles data into a two page brief which can be attached to the practice requirement sheet as a support document. Room is left for the planner to briefly describe baseline management as well as the agreed upon grazing and monitoring strategies.

ReadMe Grazing Scheds

This tab provides guidance on how to approach developing grazing schedules in general as well as aspects specific to how the two final tabs interface with data from the *Forage Requirement* and *Forage Inventory* tabs. The two final tabs effectively do the same things using the same layout, but at two different temporal resolutions.

Grazing Sched animal days

This approach breaks down grazing periods into five-day blocks. Using this calendar for documenting baseline or prior year grazing activities and site constraints is recommended even if a monthly grazing schedule is developed. Forage demand by herd is calculated for the user based on a five-day forage demand but only if a detailed herd inventory is completed on the *Forage Requirement* worksheet.

Grazing Sched animal months

This approach breaks down grazing periods into month-long blocks. This calendar may be useful when developing initial “sketches” with the operator of when and where animals are likely to be during the grazing season. In cases where animals are grazing fields for a month or more at a time, this spreadsheet provides a quick and easy way to partition feed across a grazing operation. Like the *Grazing Sched animal days* worksheet, forage demand by herd is calculated for the user based on a five-day forage demand when the detailed herd inventory is completed on the *Forage Requirement* worksheet.

Training and Resources

Training in the use of the spec tool can be obtained through requests submitted through the Area Office. Technical support for the tool is provided by the State Rangeland Management Specialist.

Primary resources which support planners using this tool include the National Range and Pasture Handbook and ANR Publication # 8092 - Guidelines for Residual Dry Matter on Coastal and Foothill Rangelands in California (University of California, Agriculture and Natural Resources, 2002).

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