The Grazing Lands Application (GLA) is a computer planning tool on grazing lands that is stirring interest with producers and conservation agencies. This planning tool is used in the Natural Resources Conservation Service (NRCS) conservation planning process. A nine step planning process is used which includes the following: 1) Identify problem, 2) Determine objectives, 3) Inventory resources, 4) Analyze resource data, 5) Formulate alternatives, 6) Evaluate alternatives, 7) Make decisions, 8) Implement plan, and 9) Evaluate plan.

The complexity of designing a grazing management plan for multiple livestock and/or wildlife enterprises on one or more types of grazing lands is a 'pencil and big chief tablet' nightmare. The GLA program began as a desire to automate portions of the conservation planning process used for grazing lands. The NRCS began to complete the programming of GLA in 1987 in cooperation with Texas A & M University's Ranching Systems Group. The NRCS pulled together a team of employees from across the nation to visualize the planning concepts and information outcomes that were desired for grazing lands planning. The product received a nationwide Beta test in 1989, and was then released to the state and field offices. The demand for GLA by producers and conservation agencies in Nebraska in the conservation planning process has shown a dramatic rise in the last three years.

GLA has several sections, which include: economics, nutritional balancing, forage inventory, animal and plant databases, feed management, and herd management. The sections that assist with the conservation planning process (steps 3, 4, and 5) are the forage inventory, feed management and herd definition. Within these sections, an inventory of the entire ranch is completed. This includes all the different types of land used by grazing animals, such as, rangeland, pastureland, grazeable woodland, cropland, and hayland. Herd definition provides an inventory to the different types of animals that are grazing including cattle, sheep, goats, horses, bison and wildlife species.

There are problems that must be addressed. Having a wildlife species and domesticated livestock grazing on the same property is a good example. The Grazing Lands Application program has a multi-species calculator, which evaluates species (white tail deer and cattle) that have different grazing preferences for forages. The program calculates the carrying capacity of the area by animal species. The plant community is evaluated using the grazing preferences of the species for the plants by the two different animals. This is accomplished by assigning grazing preferences by animal kind and plant species for the plant community.

The Economic and Nutrition Balance Analyzer are the two parts of the GLA program that help the 'Evaluate alternatives' planning step. These two parts can be used as stand alone programs, or they can be tied to the inventory evaluation. Both of these GLA sections are areas that...
NRCS’s knowledge was limited in the past. The economics section evaluates the internal rate of return on money (time value of money) used to install conservation practices compared to the expected conservation benefit (increased carrying capacity) of the practices installed. The Nutritional Balance Analyzer assists in determining the nutritional needs of the animal. The two areas of high interest to producers are the Economics and Nutritional Balance Analyzer parts of the program. In these two areas, Nebraska NRCS has made an increased effort to train our employees to improve their ability to assist producers.

Additional attention is being placed on the nutritional balance analyzer part of GLA. Nebraska NRCS is involved in two nationwide studies directed towards improvement of ruminant livestock production efficiency by evaluating forage based nutrition with different grazing animals and systems. The information obtained in assisting the cooperating producers will help to evaluate the nutritional content of their forage based livestock diets enabling them to better formulate dietary supplements. These studies will help evaluate several major vegetation types and will help provide NRCS with a measure of impacts from applied grazing lands conservation practices.

The GLA program can be used without databases. But the complete capacity of the program is not realized without the databases. Building the databases such as: plant species, range sites, cropland, pastureland, etc. requires a significant time commitment by NRCS. The development of the databases have included the combination of local input, technical guide information, research, and observation. So that we do not have to ‘reinvent the wheel’, there is an effort to coordinate databases regionally and nationwide.

Nebraska NRCS made a commitment three years ago to complete the database development and train their employees that spend a percentage of their time working on grazing lands in the use of GLA. Nebraska NRCS also committed to train non-NRCS agency personnel in the use of GLA within the state. There have been three NRCS and three outside agency training sessions (including producers, US Fish & Wildlife, Nebraska Game & Parks, University of Nebraska, and US Forest Service).

The NRCS employees using GLA in Nebraska are see-
While GLA is still new to many, the ability to work with the complexity of managing a grazing operation is a bright spot to conservation work on grazing lands. The evaluation of the grazing lands resource and the anticipated response to conservation practices applied to the land are being examined in more depth than has been done in the most recent past. We have increased our 'in field' training efforts to enhance our technical assistance to our grazing lands owners and operators by the use of GLA.

An additional benefit provided by the GLA program is its use in academic classwork. Recently, Nebraska NRCS and the University of Nebraska - Lincoln (UNL) have worked together to integrate parts of GLA into the classroom. The UNL College of Agricultural Sciences and Natural Resources and the Agronomy and Animal Science departments utilize GLA in their senior level livestock management on range and pasture course. This use of GLA in the classroom has shown many benefits. Potential NRCS employees will have exposure to this planning tool and its use relating to whole farm and ranch planning. The students are excellent testers of the program. Using GLA, in the classroom, has provided some innovative uses for the program. This program use has also provided an excellent avenue to identify grazing land research needs. One final benefit is that NRCS can use the University’s abbreviated user manual developed for the classroom when providing training outside the agency.

Nebraska has taken major steps to incorporate the Grazing Lands Application computer tool into it's grazing lands conservation planning. The flexibility of the program allows a conservationist to work at any level with a producer on his or her operation. While GLA is still new to many, the ability to work with the complexity of managing a grazing operation is a bright spot to conservation work on grazing lands.

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