GrassSnap App for Grassland Monitoring

App makes taking and organizing photo-plots simpler.

Story & photos by ***Troy Smith,*** *field editor*

Many cattlemen are accustomed to making routine trips through pastures where their cattle are grazing. They check the water, replenish salt and mineral supplies, scrutinize fences and look for cattle health problems. Most conscientious cattle folk also monitor the progress of growing calves or the observable gains of stocker steers and heifers. If they are conscientious about grazing management, they also take time to look at what's happening to the forage.

Human beings sometimes learn a lesson best in the wake of hardship. Drought often yields new or renewed appreciation for grazing resources — the vegetation that supports a grazing enterprise — and emphasizes the importance of grazing management. Range or grassland monitoring is a management tool that growing numbers of savvy graziers are adopting.

Monitoring involves making repeated observations or measurements at specific locations over multiple years. It helps managers evaluate land health and determine cattle-carrying capacity. Monitoring helps evaluate shifts in plant populations and other responses to management practices and varying levels of precipitation. Taking photographs of specific locations, annually or even seasonally, is a monitoring method that allows managers to document changes that occur over time.

It is recommended that managers capture photo-point landscape views, but also views of specific photo-plots. Taken while looking straight down at the ground, photo-plot views show the plant species present, their condition and the amount of litter present. Just about anyone can learn how to take the photos. The sometimes difficult and often time-consuming part is organizing photos and associated information so they remain useful.

The time required and the frustration associated with organizational mistakes sometimes cause managers to fall short of their photo-monitoring goals. University of Nebraska Extension Educator Bethany Johnston knows how they feel. She has logged plenty of hours helping her family and other Nebraska Sandhills ranchers implement monitoring programs.

35 Keys to Success
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Driven to find a better way to make photo-monitoring easier, Johnston and several colleagues developed GrassSnap, a mobile app that is available for Apple and Android smart devices. Development was funded by University of Nebraska (NU) Extension and the Nebraska Grazing Lands Coalition, so the app is free to download.

"Photo-monitoring is useful for measuring recovery from drought. It can be used to document forage use on public-lands grazing

► **Above:** Bethany Johnston demonstrated the GrassSnap app at the Gudmundsen Sandhills Laboratory open house this summer.

► NU's Bethany Johnston has logged plenty of hours helping her family (Mike and Debra Sitz of Mike Sitz Angus, Burwell, Neb.) and other Nebraska Sandhills ranchers implement grass-monitoring programs.

allotments. A manager can use photos to demonstrate grazing-management experience to a prospective landlord or show a current landlord what is happening on his land," says Johnston. "But with GrassSnap, it's easier to keep everything identified and organized."

Johnston says organization of photo documentation is made easier because GrassSnap applies a chosen pasture name to all photographs taken in that pasture. Additionally, each photo is stamped with the date the photo was taken, GPS coordinates (if cell service is available) and the direction the photographer was facing when the photo was snapped. A manager's own comments can be entered and attached to an image. Photos are automatically named and added to a folder containing the images captured in that pasture previously.

"To view photos, go to the 'Albums' button on the main screen. Each pasture will have its own folder. Inside each folder, subfolders are divided by monitoring date," explains Johnston. "Data can easily be downloaded to a desktop computer for better viewing."

GrassSnap will prompt the user with reminders to capture a photo-point image, as well as photo-plot images. GrassSnap also saves the very first photo-point image taken at a specific location. A ghost image of that photo can then be used when composing subsequent photos at that same location. This "Overlay Feature" helps the photographer line up the next photo for a nearly identical view.

Johnston also developed a webpage for GrassSnap, with videos, a user manual for the Apple version and other resources for graziers interested in grassland monitoring. To learn more, go to *http://centralsandhills.unl.edu/GrassSnap.* Download GrassSnap for Apple versions at the iTune Store and Google Play for Android devices.

Editor's Note: *Troy Smith is a freelance writer and cattleman from Sargent, Neb.*