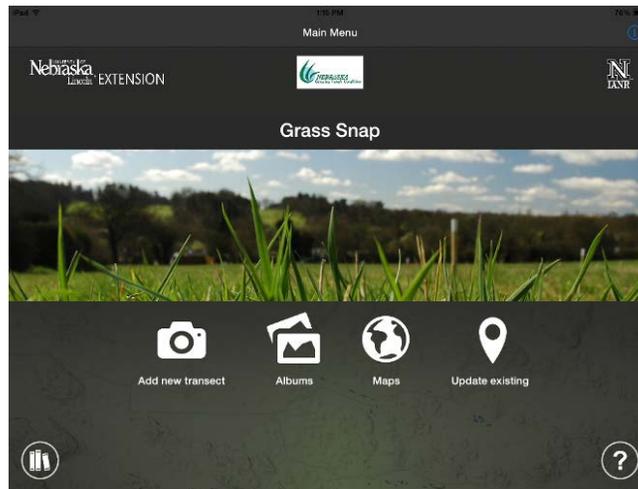


GrassSnap the Rangeland & Pasture Photo-Monitoring App



2014 Nebraska Grazing Conference Bethany M. Johnston

Monitoring grasslands and pastures is essential for good grazing management. Utilizing photographs, especially pictures taken from the same place, allows you to see changes over time. Grazing and precipitation records tied to the photographs tell the story of what happened that year.

Unfortunately, photo-monitoring can seem difficult to set up and replicate year after year. I know from personal experience that monitoring can be time consuming and frustrating, but the results are worth the hassle.

After setting up an initial range monitoring program for a local rancher, teaching workshops on monitoring, and helping my family set up monitoring systems, I thought, “There has to be an easier way to do this!”

With the help of UNL Extension staff (Jerry Volesky, Cindy Tusler and Jay Jenkins), and app programmers, we took our monitoring mistakes, streamlined photographing photo-points and photo-plots, and made data/pictures easy to download.

The mobile app for monitoring rangelands is called “GrassSnap” and is available for Apple and Android smart devices. UNL Extension and the Nebraska Grazing Lands Coalition provided funding, so the app is free to download.

We learned from our monitoring mistakes to make your monitoring easier. Here are just a few examples of how GrassSnap can save you time (and potentially, future headaches).

Our Monitoring Mistake: I forgot to record what pasture I was in when I took pictures.

The Solution: GrassSnap will take you through the process of monitoring step-by-step. Pasture name and GPS location are required to continue. This information is automatically photo-stamped on all pictures.

Our Monitoring Mistake: I forgot to take my photo-point picture.

The Solution: GrassSnap prompts you to take a photo-point, the general landscape view looking out.

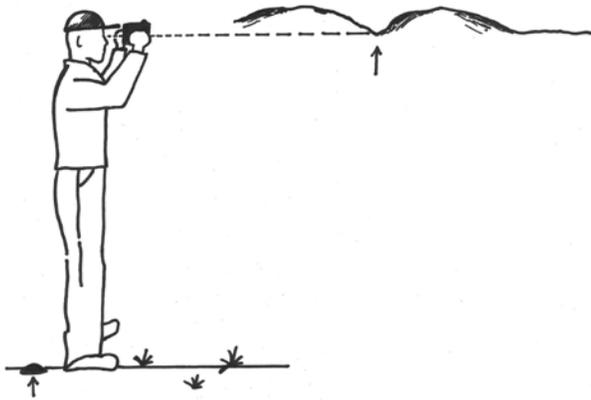


Image Name: r29a-2013-Aug-13 point
 GPS co-ordinates: 41.922250,-100.684983
 Date: Aug 13, 2013, 2:24:04 PM CDT
 Direction: 0 N

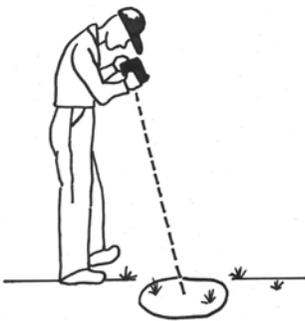


GrassSnap will photo-stamp each picture with the pasture name, GPS location, date taken, and direction looking. The pictures are automatically named and saved into a folder on GrassSnap – no more renaming pictures from your digital camera!

Our Monitoring Mistake: I forgot to take my photo-plot picture. And I cannot remember how many pictures I have taken.

The Solution: GrassSnap will ask you to take photo-plots, or more detailed photographs of the grass and soil. It also records how many photo-plot pictures you have left. GrassSnap allows you to take up to 5 photo-plot pictures.

Image Name: Smith -2013-Nov-07 plot 1
 GPS co-ordinates: 0.000000,0.000000
 Date: Nov 7, 2013, 11:41:24 AM CST
 Direction: 345 N



Again, the photo-plot pictures will be photo-stamped with information (i.e., pasture name, GPS, and date). (Note: If you forget or skip entering GPS data, your coordinates will be 0,0 like the picture above.)

Our Monitoring Mistake: I signed up for the CSP monitoring activity, but I can't find my TREND score or grazing index sheets.

The Solution: GrassSnap will collect grazing indexes and/or the Apparent TREND score for Nebraska. If you do not live in Nebraska, I would encourage you to utilize the "Comment" box in these sections. Precipitation records, grazing dates and number of head, and other comments can be typed in.

Grazing index, TREND scores, and the comments will be saved in the pasture folder with the photo-point and photo-plot pictures.

Our Monitoring Mistake: It takes too long to rename all these digital photographs and organize them into folders.

The Solution: GrassSnap automatically saves your pictures and data. To view your data, go to the "Albums" button on the main screen. Each pasture will have its own folder. Inside the folder, subfolders are divided by monitoring date. Data can easily be downloaded to your desktop for better viewing.

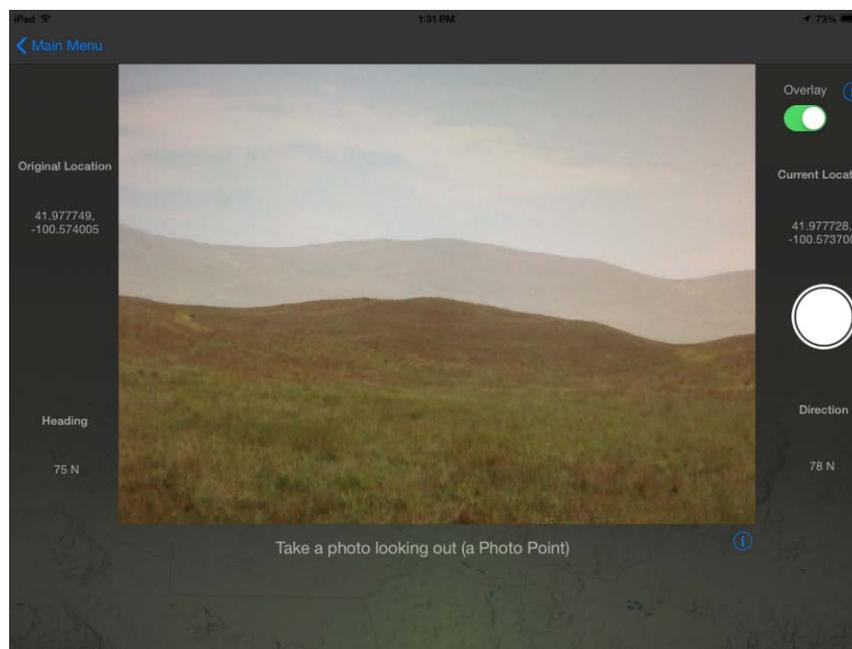


Our Monitoring Mistake: Zooming in or out on the Photo-Point Picture.

Our field marker and the yucca plants didn't move, but I zoomed in on the first picture with my digital picture and zoomed out in the second picture. Comparing uneven pictures makes it harder to see differences (even if you have a pole for size and height reference).



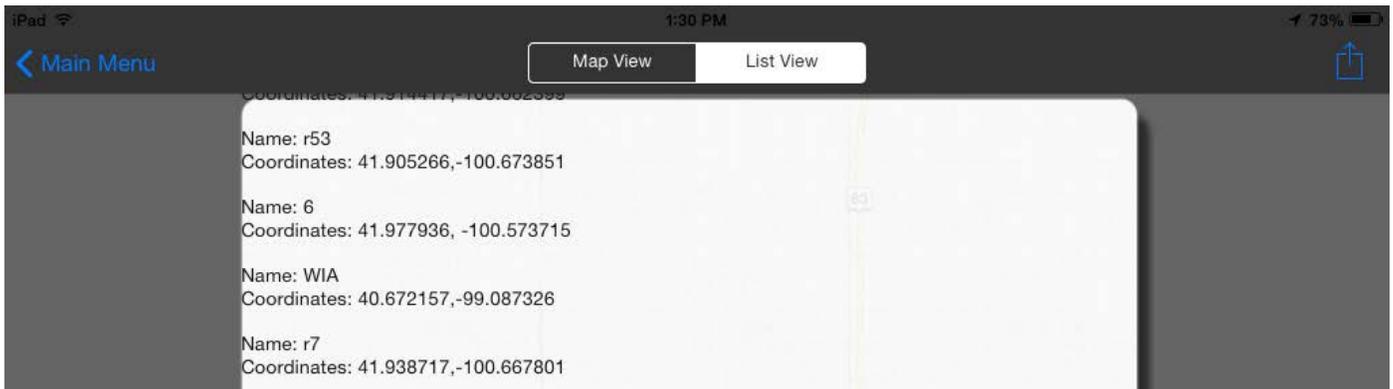
The Solution: The Overlay Feature on GrassSnap. GrassSnap will save the first photo-point picture taken for each pasture, then a ghost image will overlay what you are seeing on the screen. If you are at the same field marker and looking the same direction, you should have a nearly identical picture from year to year. (Note: We still recommend using a perspective pole and hoop in your pictures for size reference.)



The overlay feature allows you to line up the same point picture year after year.

Our Monitoring Mistake: What did I do with the list of GPS locations for the field markers from last year? I wrote down all the monitoring field markers locations when we set up the monitoring sites. The next year, I realized I left my list...at my office...100 miles away.

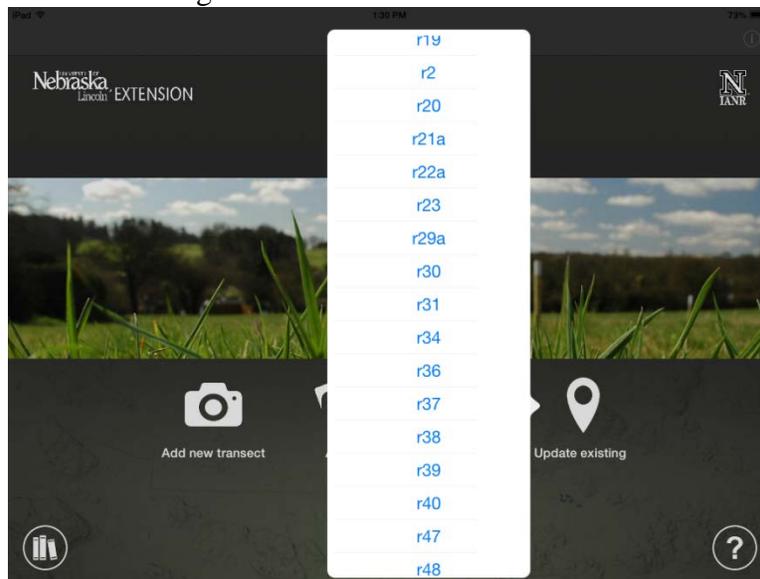
The Solution: Lucky for you, we created the "List" feature under "Maps."



All the pastures you monitored will be listed with their GPS locations (in decimal degrees). You can also email the GPS data or export it to Google Earth as KML. Unlike me, you will never forget your GPS locations. A Google map of your monitoring locations is found under “Map View.”

Our Monitoring Mistake: Monitoring takes too much time. I spend so much time writing and recording data.

The Solution: GrassSnap remembers the pastures you have monitored. You do not need to re-enter the name or GPS after the initial monitoring.



Just scroll through your list of pastures you have monitored, pick your pasture, and start taking photo-point and photo-plot pictures.

Our Monitoring Mistake: Which way was I looking when I took my photo-point picture? If you live in flat country, it can be difficult to line up the same photo-point year after year.

The Solution: The direction is photo-stamped on all the pictures, so you can line up every year. The direction you are looking now and the original direction are located on your screen when you are taking pictures.

More information on monitoring can be found in the NebGuide, “Getting to Know Your Pastures: Techniques to Enhance Monitoring” G2212.

Visit the GrassSnap webpage at centralsandhills.unl.edu/GrassSnap. The webpage has videos, a user manual for the Apple version, and other resources available for the grazing manager who wants to monitor with this app.

Contact Bethany at 308-645-2267 or bjohnston3@unl.edu for more information or help with GrassSnap. I also would like feedback on how you used GrassSnap, as we continue to work on future grazing apps.