

Vegetation Monitoring Procedure for the Southern Plains Grassland Protocol

Standard Operating Procedure (SOP) #13: Daily Data Management

Version 1.2 (May 2024)

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
1.0	5/16/2022	A. Arulanantham M. Owen	Formatting, editing and reorganization. Added electronic data management protocols and QA/QC checks; updated protocols for unknowns.	Clarity, new electronic data collection procedures, increased QA/QC, unknown specimens preserved in press, specimen labeling updated.	1.1
1.1	5/02/2024	M. Owen	Minor updates per changes to database and field procedures. Added Monthly Computer Maintenance.	Annual update and review, clarification of how and how often to update computers.	1.2

This document outlines the specific daily data management tasks for all data collected in the field for this protocol. This includes tabular data, spatial data, and photographs. Storage locations on SharePoint are designated for each data type.

Compile Paper Data Sheets

1. Paper data sheets are compiled, organized by transect, and stored in a folder labeled "PARK_YYYYMMDD".
2. Verify that all data sheets are complete, and attempt to verify any unknown plants.
3. If entering data into the database from a paper data sheet, a second technician must perform a 100% check (meaning that 100% of the entered data must be double-checked).
4. Scan data sheets into a .pdf file for each transect, named "PARKlast 2 digits of year + Transect name" and stored on computer in Park/PARKlast 2 digits of year_Data. The crew lead or a designated technician should perform a QA/QC check to ensure that all scans are present and labeled correctly.
5. Upload scans of paper data sheets to the appropriate park folder in the "Grasslands Data Drop" folder on SharePoint. Scans may be uploaded daily if possible, and must be fully uploaded before the end of the work week.
6. If needed, additional hard copies of data sheets can be made and stored in a separate location.
7. At the end of the park visit and before the end of the work week, notify the protocol lead that all paper data sheet scans have been uploaded to SharePoint.

Scan Unknown Plant Samples

1. At the end of every field day, any unknown plant samples must be scanned at 1200 dpi resolution. Freshness of the sample scanned is paramount to future identification efforts. Refer to SOP #10, Management of Unidentified Taxa, for more detail on unknown plant procedures. Photographs of unknown plants should be downloaded from the camera.
2. Scan each sample separately and save as a .jpeg file. Name each scan or photograph “PARKlast 2 digits of year_plot name_unkname”. For example: CHIC22_LAKE-LT02_unkCARMUE.
3. Scans should show both sides of the leaf, the branching pattern (alternate or opposite), and any flowers or fruits present. Multiple scans may be needed to accomplish this.
4. Place each sample back in the plant press with a label identifying the unknown plant species code, park code, plot/transect name, and date.
5. Upload unknown plant scans or photographs to the appropriate park folder in the “Grasslands Data Drop” folder on SharePoint. Scans may be uploaded daily if time allows, and must be fully uploaded before the end of the work week. Until scans can be uploaded, save them to a government computer in a folder labeled Park/PARKlast 2 digits of year_Unks. For example: CHIC22_Unks.
6. The crew lead or a designated technician should perform a QA/QC check to ensure that a scan or photograph is present for all unknown plant samples, that they are labeled correctly, and that samples have been returned to the plant press with a correct label.
7. The Unknown Plant Tracking Log – Field Form does not need to be uploaded until the end of each park visit. If using paper data sheets, follow the protocol in the above section, “Compiling Paper Data Sheets.” If using a digital version of the Tracking Log, upload the file to the appropriate park folder in the “Grasslands Data Drop” folder on SharePoint.
8. At the end of the park visit and before the end of the work week, notify the protocol lead that all unknown plant scans and the tracking log have been uploaded to SharePoint.

Transfer Photos

1. Download plot photos from the camera. Photos are labeled according to the following convention: “PARKlast 2 digits of year_TransectName_CodeDesignation” (see Table 1 for code designations). For example: SAND22_ULAND-LT02_50P-0P. Refer to SOP #4 for more details on plot photography.
2. The crew lead or a designated technician should perform a QA/QC check to ensure that all plot photos are present and labeled correctly.
3. Upload photos to the appropriate park folder in the “Grasslands Data Drop” folder on SharePoint. Photos may be uploaded daily if time allows, and must be fully uploaded before the end of the work week.
4. At the end of the park visit and before the end of the work week, notify the protocol lead that all photos have been uploaded to SharePoint.

Table 1. Subject and code designations used for labeling photos (see item #1 above).

Subject	Code Designation
From 0P toward 50P	0P–50P
From 50P toward 0P	50P–0P
From 0P toward reference feature	0P–REF
From reference feature toward 0P	REF–0P

Backup and Upload Field Data Sheets

1. For each field laptop, locate the data sheet printouts made for each plot and upload them to the appropriate park folder in the “Grasslands Data Drop” folder on SharePoint. The crew lead or a designated technician should perform a QA/QC check to ensure that all field data sheets are present and labeled correctly before uploading. Nomenclature is as follows: “PARKlast 2 digits of year + Transect name + Date printed”.
2. If edits are made to the plot data later in the day, new field data sheets must be printed and uploaded to SharePoint. Do not overwrite previous data sheets; instead, add a lowercase letter to the end of the file name. Field data sheets may be uploaded daily if time allows, and must be fully uploaded before the end of the work week.
3. Copy the field data sheets to the thumb drive assigned to that laptop. Be sure to save to the appropriate park folder (e.g., LAMR printouts will be saved to the :Raw_Datasheets\LAMR folder). This must be done daily.
4. At the end of the park visit and before the end of the work week, notify the protocol lead that all field data sheets have been uploaded to SharePoint.

Copy Database Backups to Thumb drives

1. For each field laptop, open the Grasslands Database and make a final backup for the day. Be sure to save the file into the appropriate park folder; for example, LAMR data will be saved to the C:\Grasslands\Data\Backups\LAMR folder. Be sure to also copy the backup to the thumb drive assigned to that laptop, and save it to the appropriate park folder (e.g., LAMR data will be saved to the D:\Backups\LAMR folder). Each field laptop will have its own assigned thumb drive. Only save files from that laptop to the thumb drive. This must be done daily.

Electronic Data Management once a Park Monitoring Visit is Complete

1. Make a final database backup for each field laptop. Compress the backup into a zipped folder, and upload the file to the appropriate park folder on SharePoint. Again, ensure zip files are uploaded from both laptops. Remember to zip the files so that they will upload properly.
2. At the end of the park visit and before the end of the work week, notify both protocol lead and data manager that the final database backups have been uploaded to SharePoint.

Monthly Government Computer Maintenance

1. Every government computer must be updated monthly. Required updates come out every second Tuesday, and these must be completed by the last day of the month to prevent isolation.
2. To update a government computer, you must be connected to the internet. Connect to a vpn if on public Wi-Fi. Open Windows Update by typing Update into the Start Menu and selecting “Check for Updates.” Click the blue text that says “Check Online for Updates” in Windows Update (Figure 1).
3. After updates apply, make sure to reboot the computer and leave it online overnight so that updates are reported back to regional IT.
4. Office 365 must be logged into monthly, while online, to keep all Office applications active. This may be completed by opening any Office Software at least once a month while online.

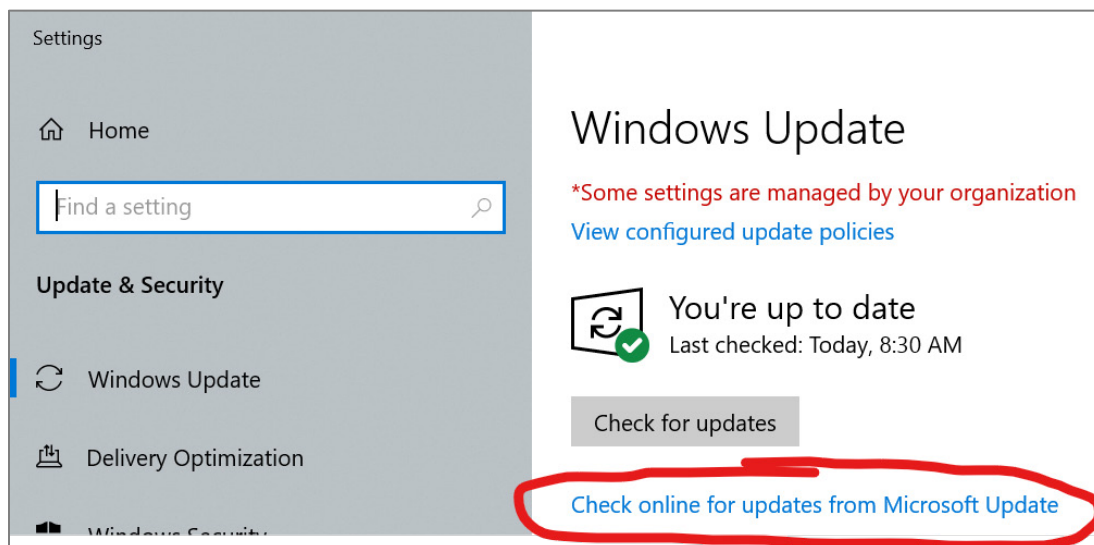


Figure 1. The Windows Update screen for updating a government computer. NPS figure