



United States Department of Agriculture



Digital Mobile Sketch Mapping (DMSM)

Enhancements to DMSM tablet software for 2019



Forest Service

Overview

This document outlines the significant new features in the 2019 version of DMSM software (v. 2.1.7), including:

- Ability to add a second observation within Collect mode
- Ability to append features while in Collect mode
- Streamlined delete functionality
- Additional Quick Key sort capability
- Options for label color display
- Automated backups of the tablet database
- Separate GPS logging settings for aerial and ground survey modes

In addition to these enhancements there have been several bug fixes, notably, minimizing the risks for:

- Polygons that disappear immediately after the sketch is completed due to shape and/or size
- Flight lines that do not properly sync

Also, the ability to download Forest Disturbance Monitor (FDM) data has been removed from the 2019 release. FHAAS is working on updates to the FDM disturbance data feed and a different strategy for upload of these data to DMSM.

Below is a brief user guide for these v. 2.1.7 enhancements.

Adding a second observation within Collect mode

In prior versions of DMSM the only way to add a second observation to a feature (i.e. “double attribute”) was to record the primary observation in Collect mode, then switch to Edit Mode to add a second observation. In the 2019 version users can ADD a second observation within Collect Mode.

Initial workflow is the same as always:

- Create feature (polygon, point or grid cell)
- Select Quick Key (or optionally specify attributes from the List tab)
- Select Percent Affected for polygons or cells (Tree counts for points)

In addition to the [CLR] and [APPLY] buttons the user now has an [ADD] option.

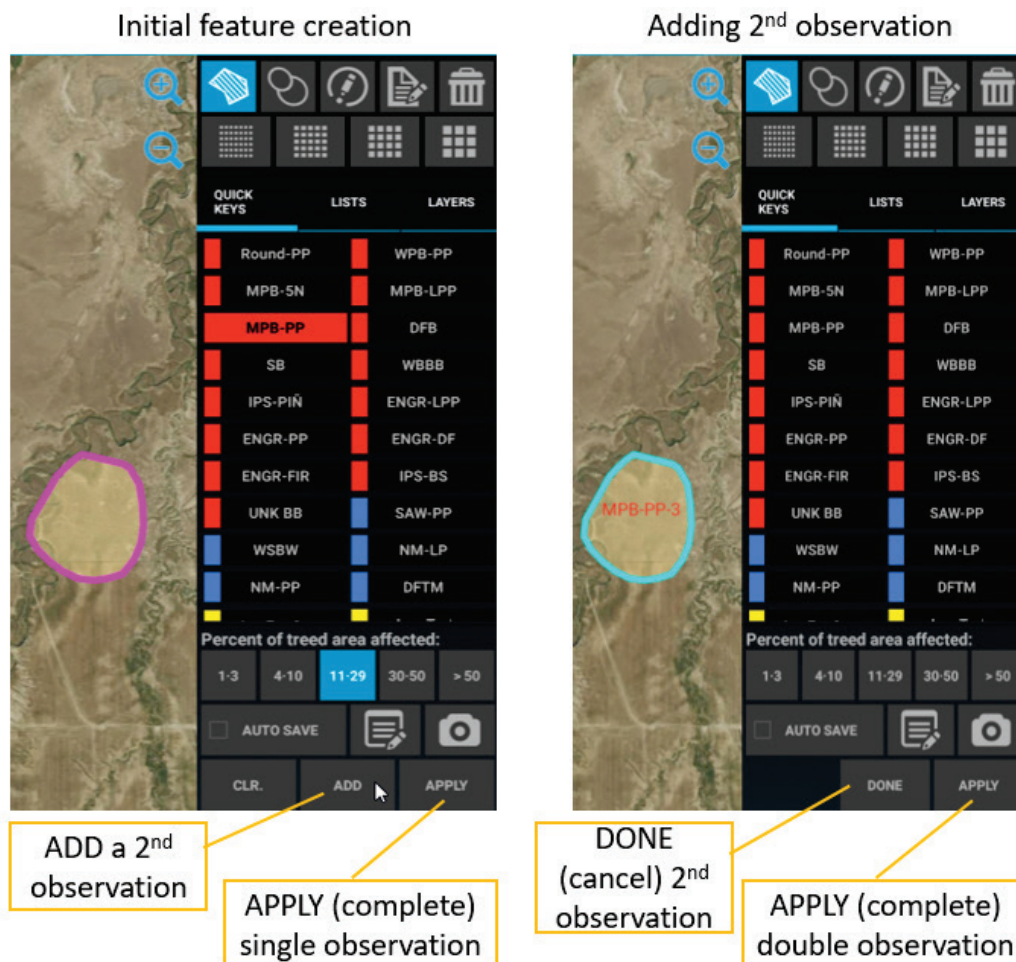
If only creating a single observation feature then click [APPLY]. Single observation feature creation is completed and DMSM is ready for you to create the next feature.

If creating a double observation feature click [ADD]. After clicking the [ADD] button DMSM will display two buttons [DONE] and [APPLY]. Note that the outline of the selected feature changes from magenta to cyan when in the process of adding a second observation.

After clicking [ADD] the user then makes the appropriate Quick key and Percent Affected selections and clicks [APPLY] to complete the double observation and DMSM is ready for you to create the next feature.

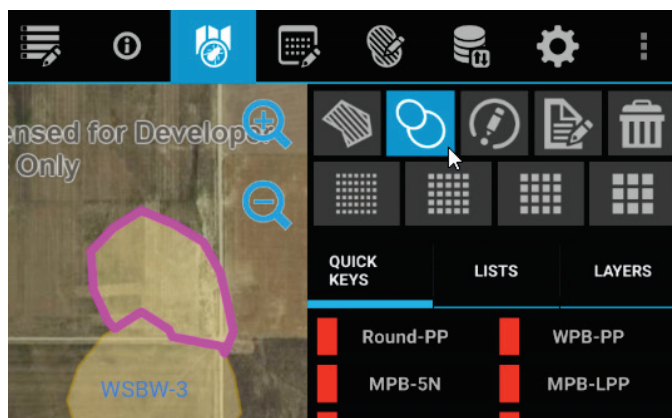


IF the user clicks [DONE] after clicking [ADD] and before clicking [APPLY], Then the second observation is cancelled and the single observation feature creation is complete. [DONE] is helpful in cases when the [ADD] button was mistakenly clicked or the user changes their mind about needing to enter a second observation.



Appending features while in Collect mode

In prior versions the Append New Geometry tool was only available from the Edit Geometry mode. In the current version the Append tool is also available from the Collect mode tool bar.

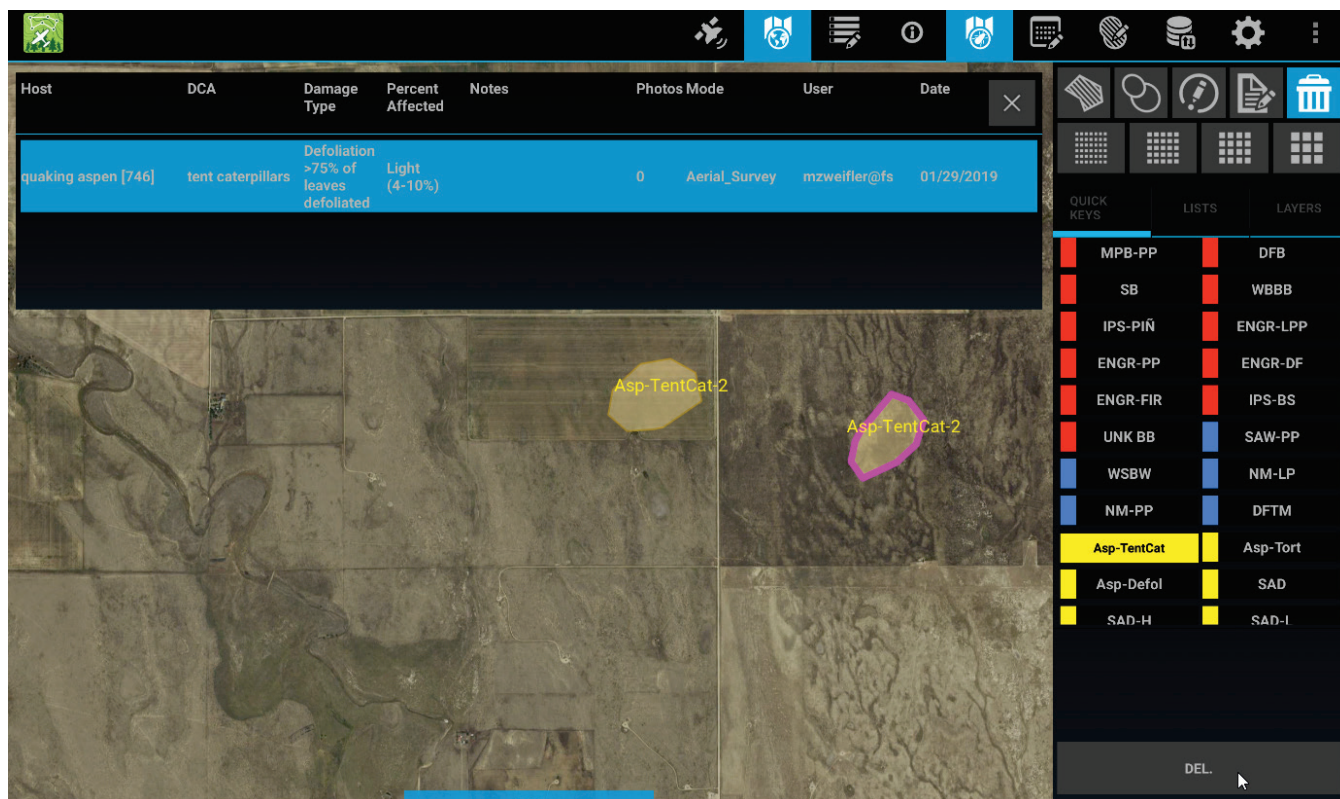


Streamlined delete functionality

In prior versions deleting observations and features was only available in Edit Attributes mode and users had to confirm each action in a separate 'Confirm Delete' pop-up window. In the current version this capability is available from the Delete button (trash can icon) on the Collect mode tool bar and no extra "Confirm Delete" step is required. Workflow is as follows:

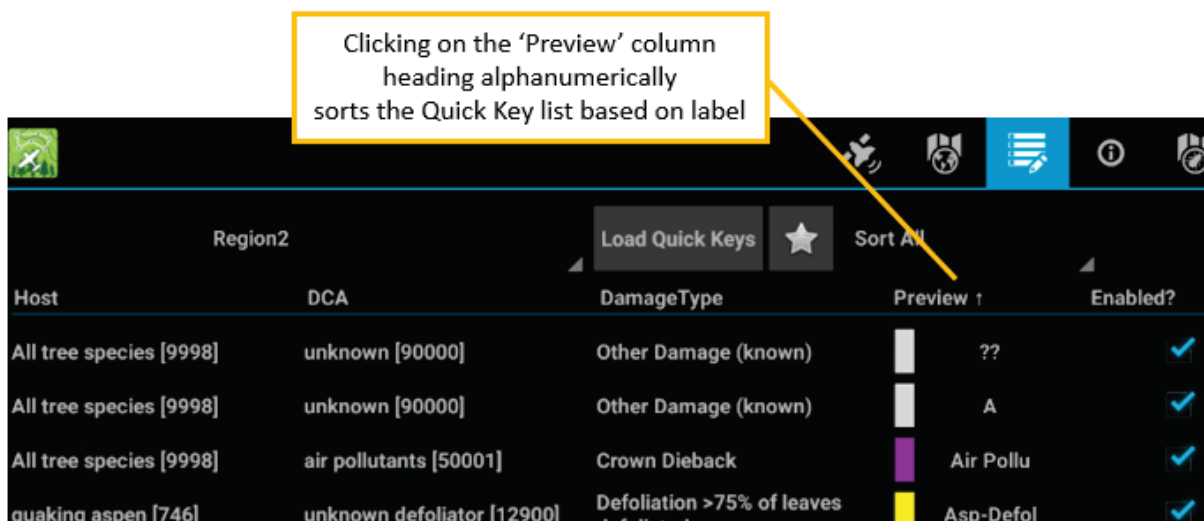
1. User clicks Delete (trash can) button
 - a. System removes all buttons at bottom of sidebar except [DEL.]
 - b. System pauses Auto-Pan
2. User selects a feature
 - a. System highlights selected feature with a magenta outline and pops up the observations table with the 1st observation row selected
3. User clicks [DEL.]
 - a. System deletes observation and if that deletion was the last remaining observation, the feature is also deleted and automatically closes the observation table pop-up

User either selects another feature while still in delete mode or resumes feature creation by selecting a tool from the Collect Mode toolbar (e.g. Create New Polygon)



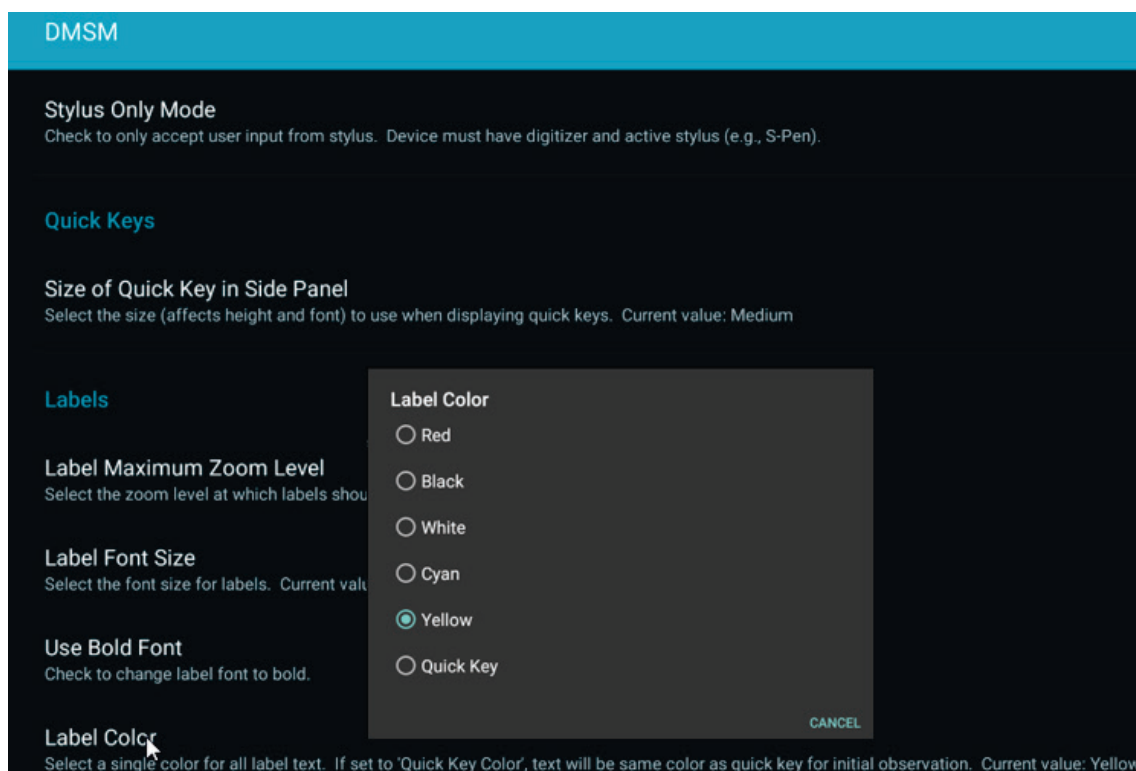
Additional Quick Key sort capability

When in the Quick Key view it is now possible to sort by Quick Key label



Options for label color display

By default map labels for features are the same color as the Quick Key color. While having different colors as a way to visually group Quick Keys in the side bar can be helpful, in some cases those colors do not display well as map labels. DMSM now has an option in settings to use a single color for map labels rather than the Quick Key color.



Automated backups of the tablet database

To protect from inadvertent data loss, the tablet automatically backs up the database at every sync or geodatabase re-load.

Furthermore users' have the option in Settings to save a database backup whenever the [Build Flightlines] tool in Data view is clicked. Backups prior to building flight-lines saves the location points (i.e. breadcrumbs) used to generate flight-lines and is an insurance against losing flight-lines. These backups would prove useful for debugging any future flight-line creation problems (the new version resolves most issues with flight-lines that emerged during the 2018 season, but there may still be scenarios that the tool does not address).

The backups can be found on the SD card > Android > data > com.masonbruce.dmsm > GDB_backups. If disk space becomes an issue users may need to manually delete old backups.

Separate GPS logging settings for aerial flight lines versus ground tracks

Users can now pre-set separate GPS logging settings for aerial flight-lines and ground tracks rather than update those settings when switching modes. Because of dramatically slower speeds and potential value of more detailed resolution, ground track settings should be much tighter than for aerial orientation and flight-lines.

DMSM

Aerial Orientation and Flightlines

Minimum Distance (m)
minimum distance (m) which must be traveled for a location to be considered (minimizes noise). Current value: 5

Aerial GPS Logging Point Spacing (m)
Distance (m) which must be traveled for a location to be logged when recording flightlines(minimizes data volume). Current value: 400

Aerial Location Smoothing
Number of points to include when smoothing direction of travel. Current value: 10

Aerial Smoothing Tolerance (m)
Aerial vertex added when location is greater than this distance (m) from the straight line formed by the last two vertices. Current value: 40

Use Small Icon for Current Aerial Position
Check to use small icon, instead of standard icon, for current position when in aerial collection mode.

Ground Orientation and Tracks

Ground Track GPS Logging Point Spacing (m)
Distance (m) which must be traveled for a location to be logged when recording ground tracks(minimizes data volume). Current value: 50

Ground Location Smoothing
Number of points to include when smoothing direction of travel. Current value: 10

Ground Smoothing Tolerance (m)
Ground vertex added when location is greater than this distance (m) from the straight line formed by the last two vertices. Current value: 20

