Aerial Fire Mapping Example – 8/10/19

This is not a final report or contractual tool. This is an update on a proven fire mapping technique.

A reliable aerial method to derive a fire perimeter and calculate acres burned is through a two step process. This process is based on still images collected at intervals with a dual lens (RGB, IR), nadir mounted camera. Geotagged images are collected by flying transects which are calculated on site. Transect widths are based on variables such as altitude, lens specifications, and aircraft speed. The desired overlap and sidelap of collected imagery is 66%.

Step 1: Once images are collected, they are loaded into an image stitching software such as Agisoft Metashape. This software aligns the photos and creates a dense point cloud. The dense point cloud is then converted to an orthophoto. The orthophoto is exported and saved as a .tif file.

Step 2: The .tif file is imported into a GIS such as ArcMap. Once the image is loaded into a GIS, a perimeter can be interpreted, digitized, and overlaid on the orthophoto to create a fire map. Acres burned and perimeter are calculated using the functionality of the GIS.

Image 1. Example Flight Transects (Latitude FVR90, Roberts Fire)

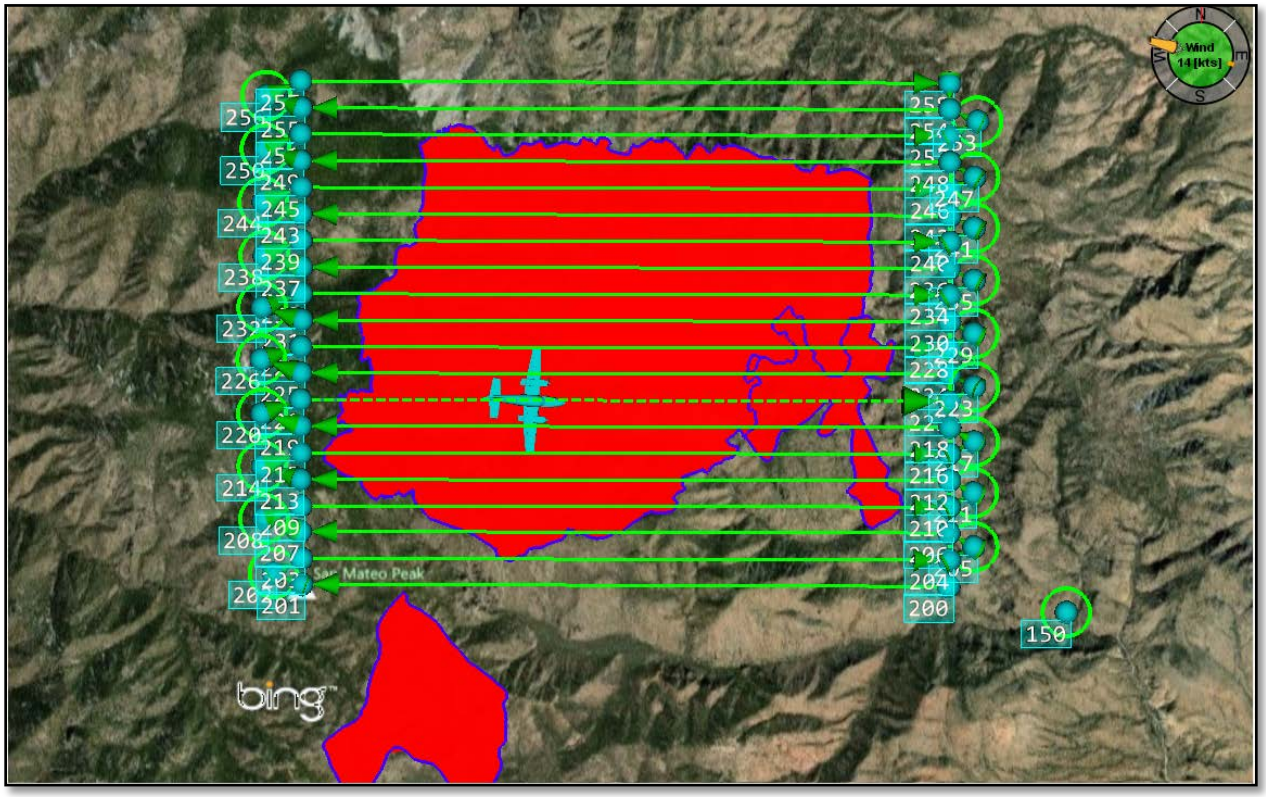

Image 2. Example Fire Perimeter Map (Latitude FVR, Corta Fire)