Data Collection & Product Report for 2020 Seed Project: Riparian Vegetation Mapping, Classification, and Historic Drought Response on the San Pedro River

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Data Collection Summary:

Collection Dates, Flights:	2 flights on July 10–11, 2021 (DOY 191–192)
Aircraft, Equipment:	Aero Commander 500 (N161BL), RIEGL VQ-580 II (H2225798)
Flight Plan Parameters:	Flying Height: 500 m AGL, Speed: 130 kt, Overlap: 50%
Equipment Parameters:	PRR: 150 kHz, LPS: 95/s, Scan Angle: ± 37.5° PRR: 300 kHz, LPS: 135/s, Scan Angle: ± 37.5°
Collected Area:	81.5 km²

GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (ITRF2014 / Ellipsoid)
BRAN	NCALM	31°32’55.2” N, 110°08’30.0” W, 1212.3 m
GSE3	NCALM	31°35’33.3” N, 110°20’07.9” W, 1369.8 m

Data Processing Summary:

Data Adjustments:	Line-by-line roll/elevation correction
Ground Classification:	Two iterations of moderate ground determination, manual classification of misclassified ground
Elevation Model Generation:	Bare-earth calculated from Kriging, first-return calculated from TIN model

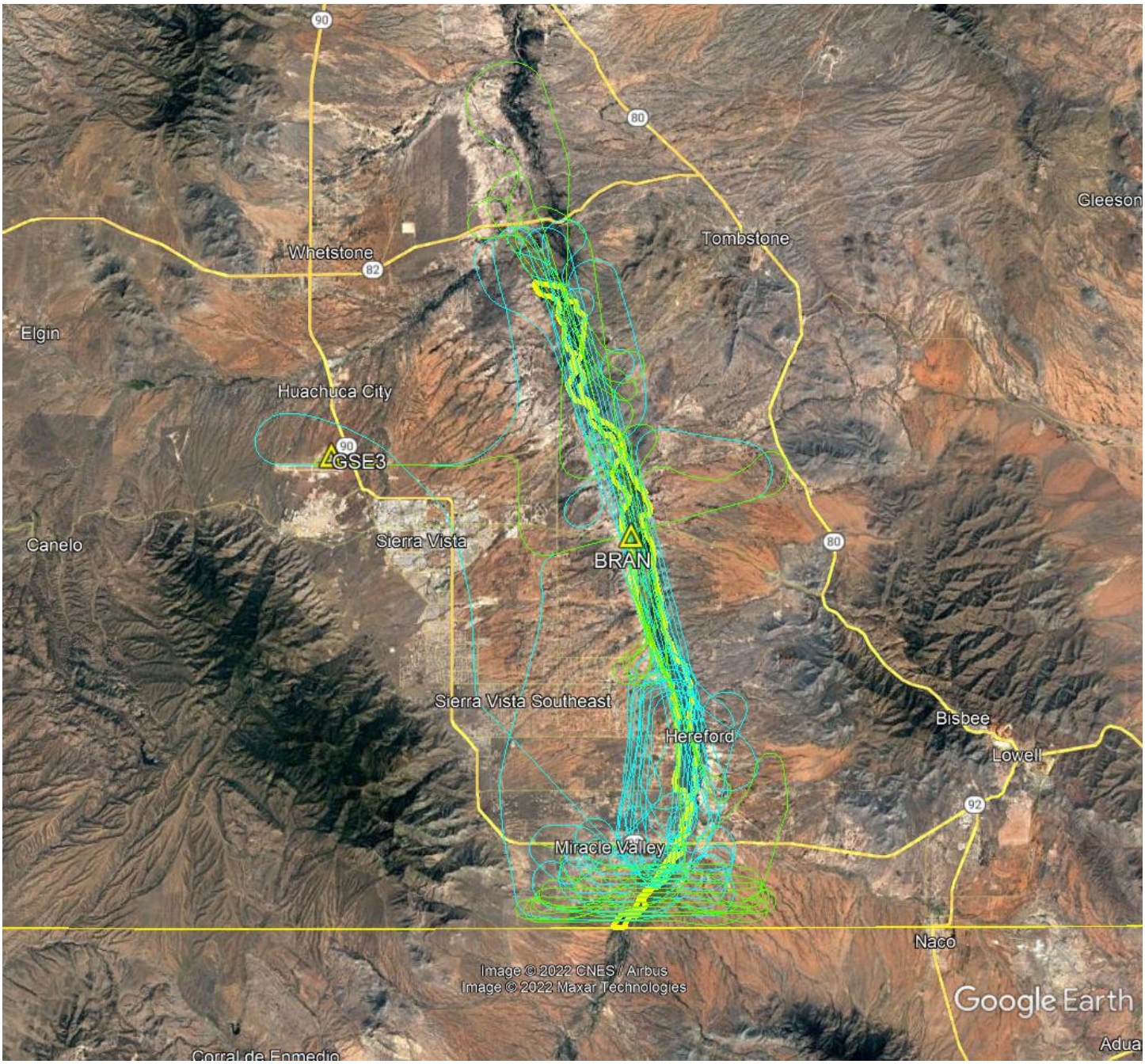
Data Accuracy Summary

Strip-to-Strip Average	0.027 m
GCP Residual RMS	0.034 m

Data Product Summary:

Horizontal / Vertical Datum:	ITRF2014 epoch day-of-flight / ellipsoid
Projection / Units:	UTM Zone 12N / meters
Point Cloud Tiles:	1000-m × 1000-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), low point (7), and high point (18) returns; user data record 1 (150 kHz), 2 (300 kHz)
Bare-Earth Elevation Model:	GeoTIFF @ 1-m resolution from classified ground
First-Surface Elevation Model:	GeoTIFF @ 1-m resolution with canopy and buildings included

Area of Interest:



Location of survey polygon, aircraft trajectories, and GNSS reference stations

The requested survey area consisted of one polygon located east of Sierra Vista, AZ. The polygon enclosed approximately 35.2 km^2 (13.6 mi^2).