



## Data Collection & Product Report for 2020 Seed Project: Impact of Waterfall Formation on River Long Profiles

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### Data Collection Summary:

Collection Dates, Flights:	2 flights on July 25 & 27, 2021 (DOY 206 & 208)
Aircraft, Equipment:	Robinson R44 II (N7106Z), RIEGL VUX-240 (S2224985)
Flight Plan Parameters:	Flying Height: 500 m AGL, Speed: 60 kt, Overlap: 50%
Equipment Parameters:	PRR: 150 kHz, LPS: 71/s, Scan Angle: $\pm 37.5^\circ$
Collected Area:	72.3 km <sup>2</sup>

### GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (WGS84/Ellipsoid)
GSE3	NCALM	36°01'50.35429" N, 119°03'39.88958" W, 100.956 m
P056	UNAVCO	36°01'38.77432" N, 119°03'46.34669" W, 101.030 m
P566	UNAVCO	36°19'28.03526" N, 119°13'45.44537" W, 78.031 m
P571	UNAVCO	36°13'52.91594" N, 118°46'00.18725" W, 914.217 m
P572	UNAVCO	36°35'07.85645" N, 118°57'16.55654" W, 1167.343 m

### Data Processing Summary:

Data Adjustments:	Line-by-line roll/elevation correction, project elevation shift of +0.057 m
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	0.095 m
GCP Residual RMS	0.024 m (calibration area)

### Data Product Summary:

Horizontal / Vertical Datum:	WGS84 / ellipsoid
Projection / Units:	UTM Zone 11N / meters
Point Cloud Tiles:	1000-m $\times$ 1000-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), low point (7), and high point (18) returns
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 Visalia, CA. The polygon enclosed approximately 42.0 km<sup>2</sup> (16.2 mi<sup>2</sup>).