



## Data Collection & Product Report for 2018 Seed Project: Chemical Erosion Response to Transient Physical Erosion Along the Path of a Migrating Knickpoint

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### Data Collection Summary:

Collection Dates, Flights:	September 20–21, 2019 (DOY 263–264) comprising two (2) flights
Aircraft, Equipment:	Piper PA-31 Navajo Chieftain (N640WA) with Optech Titan Lidar (14SEN340)
Flight Plan Parameters:	Flying Height: 500 m AGL, Speed: 140 kt, Overlap: 50%
Equipment Parameters:	PRF: 75 kHz, Scan Angle: $\pm 30^\circ$ , Scan Frequency: 26 Hz
Imagery Flight Plan Parameters:	N/A
Collected Area:	63 km <sup>2</sup>

### GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (NAD83(2011) epoch 2010.00/Ellipsoid)
BRAN	NCALM	40°30'31.18135" N, 122°18'01.73584" W, 125.421 m
BRAN_2	NCALM	40°30'31.18172" N, 122°18'01.73520" W, 125.505 m
P155	UNAVCO	41°16'20.75210" N, 123°11'19.57348" W, 1784.538 m
P338	UNAVCO	40°44'51.17755" N, 122°55'22.84806" W, 672.682 m

### Data Processing Summary:

Scan Angle Cutoff:	$\pm 1^\circ$
Intensity Normalization:	500 m
Data Adjustments:	Line-by-line/channel-by-channel roll orientation and elevation correction, project elevation shift of -28.6 cm
Ground Classification:	Two iterations of default ground determination, manual classification of misclassified ground
Elevation Model Generation:	First-return calculated from average Z TIN model, bare-earth calculated from Kriging

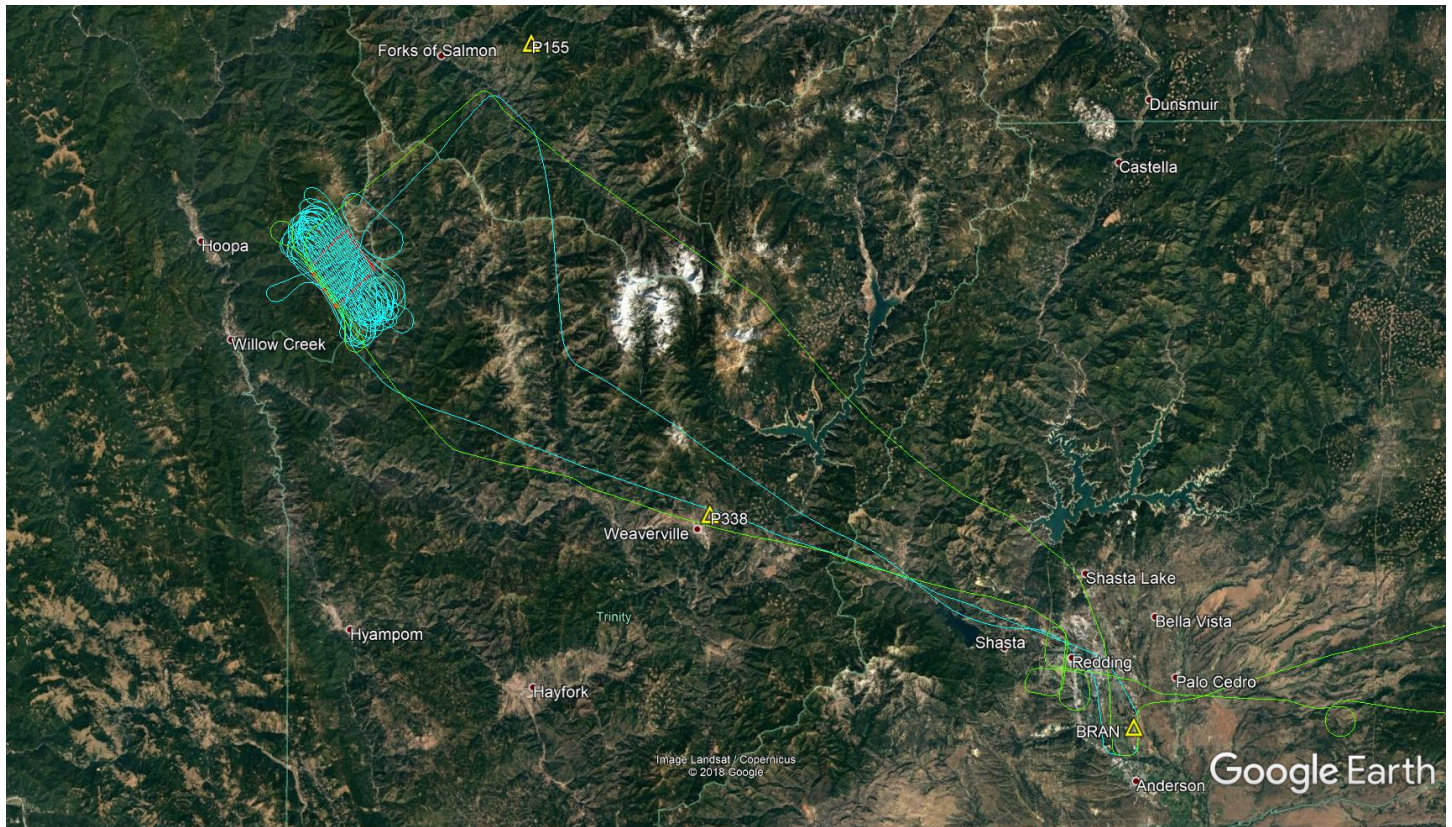
### Data Accuracy Summary

Strip-to-Strip Average	0.107 m
GCP Residual RMS	N/A

### Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) epoch 2010.00 / Ellipsoid
Projection / Units:	UTM Zone 10N / meters
Point Cloud Tiles:	500-m $\times$ 500-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), intermediate point (4), low point (7), and high point (18) returns
Bare-Earth Elevation Model:	GeoTIFF @ 50-cm resolution from classified ground points
First-Surface Elevation Model:	GeoTIFF @ 50-cm 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 northwest of Redding, CA. The polygon enclosed approximately 39.3 km<sup>2</sup> (15.2 mi<sup>2</sup>).

### Notes:

No visible imagery was collected over the site due to an instrument malfunction.