



Data Collection & Product Report for 2019 Seed Project: Using Lidar to Evaluate the Hydrologic Effects of Forest Restoration in Washington State's Eastern Cascade Mountains

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Data Collection Summary:

Collection Dates, Flights:	2 flights on April 1, 2021 (DOY 091/092)
Aircraft, Equipment:	Robinson R66 (N166FS), RIEGL VQ-580 (S9999060)
Flight Plan Parameters:	Flying Height: 400–500 m AGL, Speed: 50–60 kt, Overlap: 50%
Equipment Parameters:	PRR: 150 kHz, Scan Angle: $\pm 30^\circ$
Collected Area:	58.6 km ²

GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (NAD83(2011) epoch 2010.00/Ellipsoid)
LINH	CWU	47°00'01.19081" N, 120°32'18.54553" W, 472.712 m
P434	UNAVCO	47°44'24.71294" N, 121°04'32.13001" W, 1698.384 m

Data Processing Summary:

Data Adjustments:	Line-by-line orientation/elevation correction, project elevation shift of +0.06 m
Ground Classification:	Two iterations of aggressive ground determination (north and central boxes), two iterations of moderate ground determination (south box), manual classification of misclassified ground
Elevation Model Generation:	Bare-earth calculated from Kriging, first-return calculated from TIN model

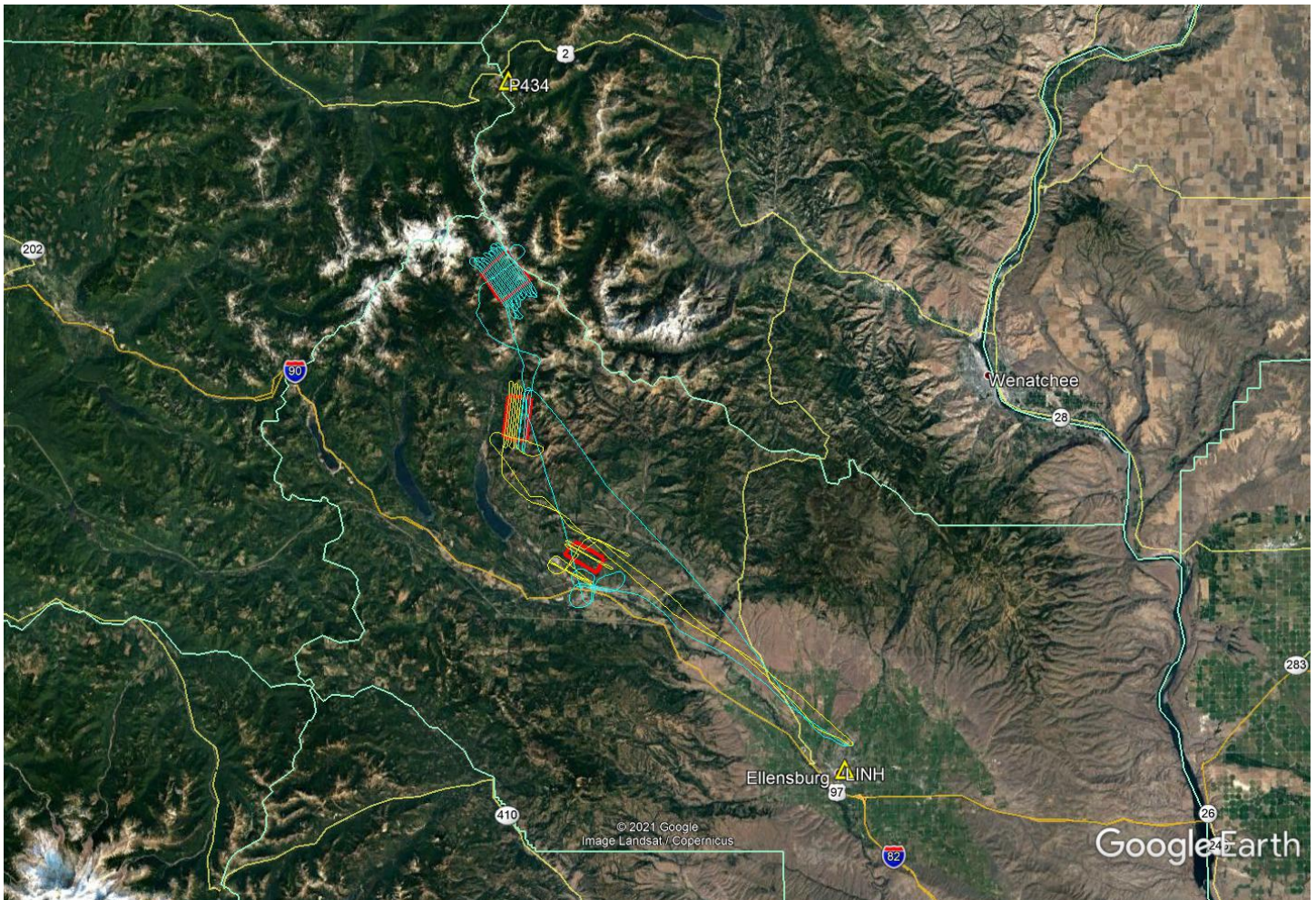
Data Accuracy Summary

Strip-to-Strip Average	0.08 m (north box), 0.06 m (center box), 0.07 m (south box)
GCP Residual RMS	0.02 m (calibration area)

Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) epoch 2010.00 / ellipsoid
Projection / Units:	UTM Zone 10N / 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 and snow points
First-Surface Elevation Model:	GeoTIFF @ 1-m resolution with canopy and buildings included

Area of Interest:



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

The requested survey area consisted of three polygons located northwest of Ellensburg, WA. The polygons enclosed approximately 39.5 km² (15.3 mi²).