



# Data Collection & Product Report for 2021 Seed Project: Using LIDAR and Multispectral Imagery to Map Changes in Vegetation After Deep-Seated Landslides

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## Data Collection Summary:

|                            |  |
|----------------------------|--|
| Collection Dates, Flights: | 1 flight on March 16, 2022 (DOY 075)                       |
| Aircraft, Equipment:       | Robinson R66 (N7063M), RIEGL VQ-580 II (H2225798)          |
| Flight Plan Parameters:    | Flying Height: 450 m AGL, Speed: 70 kt, Overlap: 50%       |
| Equipment Parameters:      | PRR: 300/600 kHz, LPS: 200/s, Scan Angle: $\pm 37.5^\circ$ |
| Collected Area:            | 14.4 km <sup>2</sup>                                       |

## GNSS Reference Station Summary:

| Station Name | Operating Agency | Control Coordinates (NAD83(2011) / Ellipsoid)    |
|--------------|------------------|--|
| SPTA         | NCALM            | 43°55'49.09717" N, 123°00'30.53624" W, 141.703 m |
| SPTB         | NCALM            | 43°55'49.00663" N, 123°00'30.47375" W, 141.514 m |

## Data Processing Summary:

|                             |  |
|-----------------------------|--|
| Data Adjustments:           | Line-by-line roll/pitch/height correction  |
| Ground Classification:      | Two iterations of moderate ground determination, manual classification of misclassified ground |
| Elevation Model Generation: | Elevation values calculated from Kriging   |

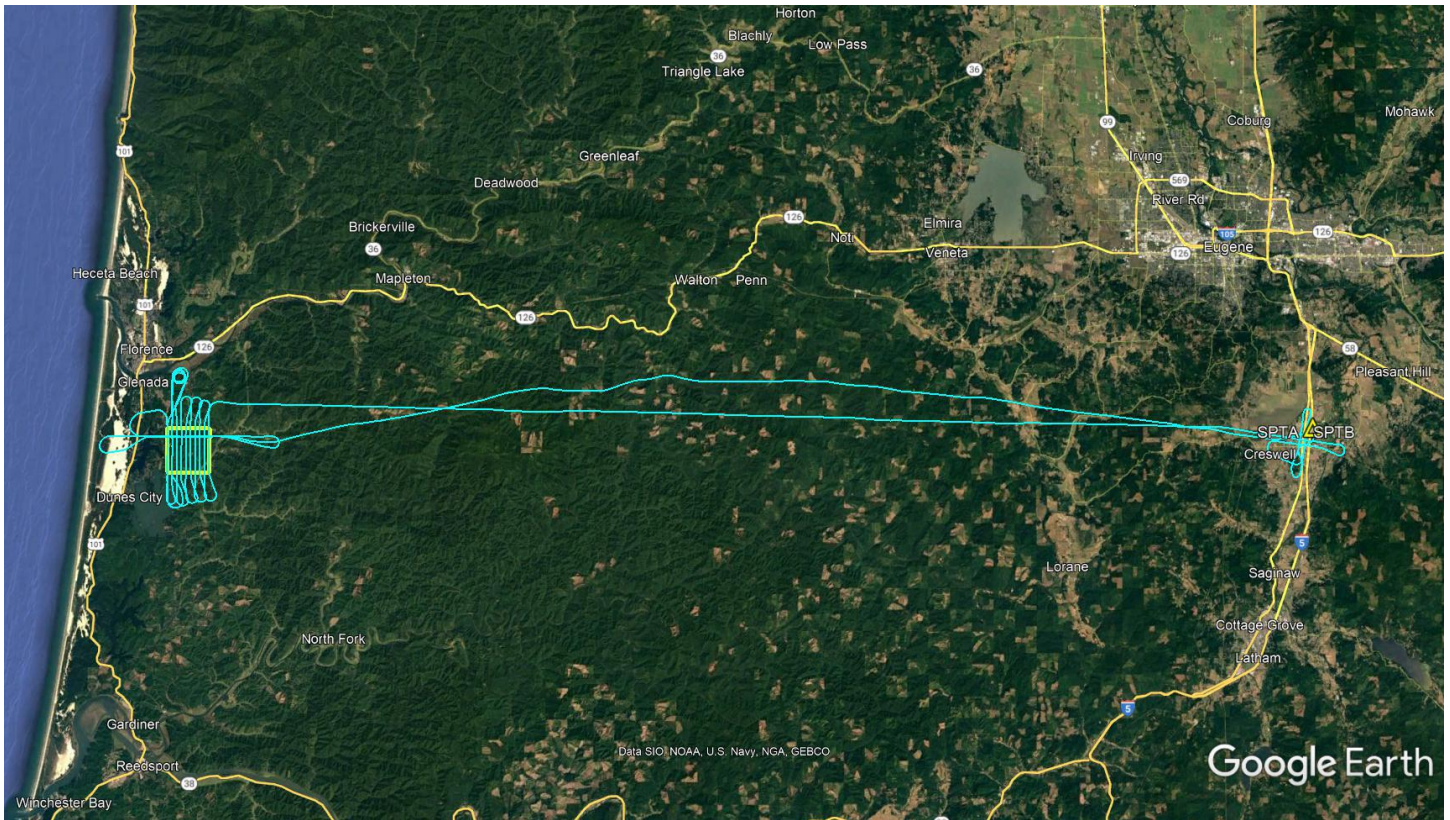
## Data Accuracy Summary

|                        |                            |
|------------------------|----------------------------|
| Strip-to-Strip Average | 0.063 m                    |
| GCP Residual RMS       | 0.032 m (calibration area) |

## Data Product Summary:

|                                |   |
|--------------------------------|---|
| Horizontal / Vertical Datum:   | NAD83(2011) / NAVD88 (GEOID18)  |
| 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), and outlier (7) returns |
| Bare-Earth Elevation Model:    | GeoTIFF @ 1-m resolution from classified ground   |
| First-Surface Elevation Model: | GeoTIFF @ 1-m resolution with canopy included   |

## Area of Interest:



**Location of survey polygon, aircraft trajectory, and GNSS reference stations**

The requested survey area consisted of one polygon located west of Eugene, OR. The polygon enclosed approximately  $10.6 \text{ km}^2$  ( $4.1 \text{ mi}^2$ ).