



1. DATASET FULL NAME

UAV LiDAR Surveys for Quantifying Post-Eaton Fire Sediment Mobilization, CA

2. DATASET COLLECTION DATES

UAV LiDAR acquisition dates: October 31, November 13, November 26, and December 5, 2025; and January 7–8, February 13, and February 27, 2026. These repeat surveys bracket four major post-fire storm events in November 2025, December 2025, and February 2026.

3. OVERVIEW DESCRIPTION

This dataset contains repeat high-resolution UAV LiDAR topography of Los Angeles County debris basins along the front of the San Gabriel Mountains. Surveys bracket four major post-fire storms in November 2025, December 2025, and February 2026 and cover 20 basins used for debris-flow mitigation and sediment storage. Data were acquired with a DJI Matrice 350 RTK UAV, DJI Zenmuse L2 LiDAR sensor, and Emlid Reach RS3 GNSS base station. Flights were conducted at 100–120 m above ground using terrain following, 80% front overlap, 20% lateral overlap, RGB collection, and an average speed of 6 m/s, producing approximately 500–700 points/m² and ~3.5 cm native-resolution products. Point clouds were reconstructed in DJI Terra using PPK processing and 1-second GNSS base data. Pre- and post-event colorized point clouds, DEMs, DSMs and RGB orthomosaics were clipped to each debris basin.

4. HORIZONTAL COORDINATE SYSTEM

NAD83(2011) / UTM Zone 11N, meters (EPSG:6340)

5. VERTICAL COORDINATE SYSTEM (E.G. NAVD88)

NAVD88 orthometric height, meters (EPSG:5703)

6. ADDITIONAL METADATA

Related public data record: <https://zenodo.org/records/21383880>.

7. DATASET CITATION LANGUAGE

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Table 1. UAV LiDAR survey locations and acquisition dates for the November 2025 storm event.

Event	Debris basin	Lat. [deg]	Lon. [deg]	Before Storm Survey	After Storm Survey
Nov. 2025	Auburn	34.1744	-118.0562	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Bailey	34.1723	-118.0616	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Carriage House	34.1758	-118.0692	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Carter	34.1743	-118.05	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Devonwood	34.2074	-118.1313	11132025 12:08-12:30	12052025 12:00-12:20
Nov. 2025	Gooseberry	34.1936	-118.12	11132025 12:08-12:30	12052025 12:00-12:20
Nov. 2025	Lannan	34.1727	-118.0329	11132025 15:20-15:31	11262025 17:20-17:31
Nov. 2025	Las Flores	34.2018	-118.1268	11132025 12:08-12:30	12052025 12:00-12:20
Nov. 2025	Nathaniel Ct.	34.1743	-118.05	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Rubio	34.1995	-118.1226	11132025 12:08-12:30	12052025 12:00-12:20
Nov. 2025	Sierra Madre Dam	34.1763	-118.0427	11132025 15:53-16:10	11262025 16:44-17:00
Nov. 2025	Sierra Madre Villa	34.1719	-118.0772	11132025 16:46-16:58	12052025 11:02-11:14
Nov. 2025	Sierra Meadow	34.175	-118.0582	10312025 12:08-12:30	11262025 12:50-13:10
Nov. 2025	Sunnyside	34.1751	-118.0658	10312025 12:08-12:30	11262025 12:50-13:10

Table 2. UAV LiDAR survey locations and acquisition dates for the December 2025 storm event.

Event	Debris basin	Lat. [deg]	Lon. [deg]	Before Storm Survey	After Storm Survey
Dec. 2025	Auburn	34.1744	-118.0562	11262025 12:50-13:10	1082026 12:25 -12:45
Dec. 2025	Bailey	34.1723	-118.0616	11262025 12:50-13:10	1082026 12:25-12:45
Dec. 2025	Carriage House	34.1758	-118.0692	11262025 12:50-13:10	1082026 12:25 -12:45
Dec. 2025	Carter	34.1743	-118.05	11262025 12:50-13:10	1082026 12:25-12:45
Dec. 2025	Devonwood	34.2074	-118.1313	12052025 12:00-12:20	1082026 13:15-13:35
Dec. 2025	Fair Oaks	34.2037	-118.141	12052025 13:05-13:25	1082026 14:00-14:20
Dec. 2025	Fern	34.2038	-118.1483	12052025 13:05-13:25	1082026 14:00-14:20
Dec. 2025	Gooseberry	34.1936	-118.12	12052025 12:00-12:20	1082026 13:15-13:35
Dec. 2025	Lannan	34.1727	-118.0329	11262025 17:20-17:31	1082026 11:05-11:16
Dec. 2025	Las Flores	34.2018	-118.1268	12052025 12:00-12:20	1082026 13:15-13:35
Dec. 2025	Lincoln	34.2031	-118.1569	12052025 13:05-13:25	1082026 14:00-14:20
Dec. 2025	Nathaniel Ct.	34.173	-118.0528	11262025 12:50-13:10	1082026 12:25-12:45
Dec. 2025	Rubio	34.1995	-118.1226	12052025 12:00-12:20	1082026 13:15-13:35
Dec. 2025	Sierra Madre Dam	34.1763	-118.0427	11262025 16:44-17:00	1082026 11:40-11:55
Dec. 2025	Sierra Madre Villa	34.1719	-118.0772	12052025 11:02-11:14	1072026 16:03-16:15
Dec. 2025	Sierra Meadow	34.175	-118.0582	11262025 12:50-13:10	1082026 12:25-12:45
Dec. 2025	Sunnyside	34.1751	-118.0658	11262025 12:50-13:10	1082026 12:25-12:45
Dec. 2025	West Ravine	34.205	-118.1482	12052025 13:05-13:25	1082026 14:00-14:20

Table 3. UAV LiDAR survey locations and acquisition dates for the February 2026 storm event

Event	Debris basin	Lat. [deg]	Lon. [deg]	Before Storm Survey	After Storm Survey
Feb. 2026	Auburn	34.1744	-118.0562	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Bailey	34.1723	-118.0616	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Carriage House	34.1758	-118.0692	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Carter	34.1743	-118.05	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Devonwood	34.2074	-118.1313	2132026 14:20-14:40	2272026 14:00-14:20
Feb. 2026	Fair Oaks	34.2037	-118.141	2132026 14:56-15:15	2272026 14:30-14:50
Feb. 2026	Fern	34.2038	-118.1483	2132026 14:56-15:15	2272026 14:30-14:50
Feb. 2026	Gooseberry	34.1936	-118.12	2132026 14:20-14:40	2272026 14:00-14:20
Feb. 2026	Kinneloa East	34.1833	-118.0835	2132026 12:10-12:20	2272026 11:55-12:05
Feb. 2026	Kinneloa West	34.1835	-118.0858	2132026 12:10-12:20	2272026 11:55-12:05
Feb. 2026	Lannan	34.1727	-118.0329	2132026 09:02-19:15	2272026 08:35-08:48
Feb. 2026	Las Flores	34.2018	-118.1268	2132026 14:20-14:40	2272026 14:00-14:20
Feb. 2026	Lincoln	34.2031	-118.1569	2132026 14:56-15:15	2272026 14:30-14:50
Feb. 2026	Nathaniel Ct.	34.173	-118.0528	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Rubio	34.1995	-118.1226	2132026 14:20-14:40	2272026 14:00-14:20
Feb. 2026	Sierra Madre Dam	34.1763	-118.0427	2132026 09:50-10:05	2272026 09:20-09:35
Feb. 2026	Sierra Madre Villa	34.1719	-118.0772	2132026 11:23-11:35	2272026 10:30-10:45
Feb. 2026	Sierra Meadow	34.175	-118.0582	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	Sunnyside	34.1751	-118.0658	2132026 10:37-10:57	2272026 10:00-10:20
Feb. 2026	West Ravine	34.205	-118.1482	2132026 14:56-15:15	2272026 14:30-14:50

Event	Collection	LAZ files	Total points	Estimated area (km ²)	Mean density (pts/m ²)	Horizontal CRS	DEM/DSM Resolution m
2025 NOV	Before	15	359,165,576	1.094	328.32	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5
2025 NOV	After	19	470,438,489	1.335	352.41	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5
2025 DEC	Before	19	470,438,489	1.335	352.41	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5
2025 DEC	After	21	440,551,525	1.323	332.93	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5
2026 FEB	Before	21	520,279,645	1.491	348.84	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5
2026 FEB	After	21	508,593,492	1.445	351.92	NAD83(2011) / UTM zone 11N [EPSG:6340]	0.5

Table 4. Summary of UAV LiDAR point-cloud and raster characteristics for each event survey.