

Landslide Incident Inventory

#	Agency	Year	Author or Source Agency	Title/Description	General Location	Purpose	Total Incidence Data
1	WVGES	1973	Landers and Smosna	Final Report on Landslides of July 9, 1973 in Kanawha City Area of Charleston, West Virginia	Charleston, West Virginia	Landslide mapping	10
2	WVGES	1976-80	Lessing et al.	WV Landslides and Slide-Prone Areas; funded by Appalachian Regional Commission	Statewide (39 topo quads)	Landslide mapping	46,330
3	USGS	1978-85	USGS (various)	Landslide Quad Maps: Open File Maps	Statewide (382 topo quads)	Landslide mapping	41,307
4	USGS	1993	Jacobson et al	U.S. Geological Survey Bulletin 1981: Geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River basins in West Virginia and Virginia	Cheat and Potomac River basins; Wills Mountain Anticline; Eastern WV	Research study (1985)	3,571
5	WVU	1983-97	WVU	Landslide incidences with Images	Statewide	Instruction & landslide inventory	46
6	WVU	1996	Kite and Grubb	Update of 1976 Landslide Maps, Morgantown North and South Quadrangles	Morgantown, West Virginia	Landslide inventory	41
7	WVU	2008	Konsoer et al	LiDAR, GIS, and multivariate statistical analysis to assess landslide risk, Horseshoe Run watershed, West Virginia	Horseshoe Run Watershed, Tucker County	Surficial Geology Mapping	149
8	NPS/WVGES	2014	Yates and Kite	Unpublished Digital Surficial Geologic Map of Bluestone National Scenic River and Vicinity, West Virginia (NPS, GRD, GRI, BLUE, BLUS digital map) adapted from a West Virginia University and West Virginia Geological and Economic Survey Open File Map by Yates and Kite (2014)	Bluestone National Scenic River and Vicinity	Surficial Geology Mapping	12
9	NPS/WVGES	2015	Yates and Kite	Digital Surficial Geologic Map of New River Gorge National River, West Virginia (NPS, GRD, GRI, NERI, NERS digital map) adapted from a West Virginia University and West Virginia Geological and Economic Survey Open File Report map by Yates and Kite (and Gooding) (2015)	New River Gorge National River	Surficial Geology Mapping	212
10	WVDOT	2016	Geospatial Transportation Information (GTI) Section	Road landslide inventory	Statewide	Landslide inventory	1,406
11	WVDHSEM	2025	State Hazard Mitigation Office	FEMA Buyout Properties for Landslides	Southern West Virginia	Landslide mitigation	19
12	WVU	2023	WVGISTC	Statewide Landslide Risk Assessment; Funded by FEMA and WV Division of Homeland Security and Emergency Management	Statewide	Landslide risk assessment (QL2 LiDAR)	116,420
13	WVU	2026	WVGISTC	Polygons and lines mapped using previously mapped LiDAR landslide incidence points. Project funded by USGS.	Statewide	Landslide Mapping (QL2 LiDAR)	92,188

301,711 landslide features

LiDAR-Mapped Landslide Incidence Points

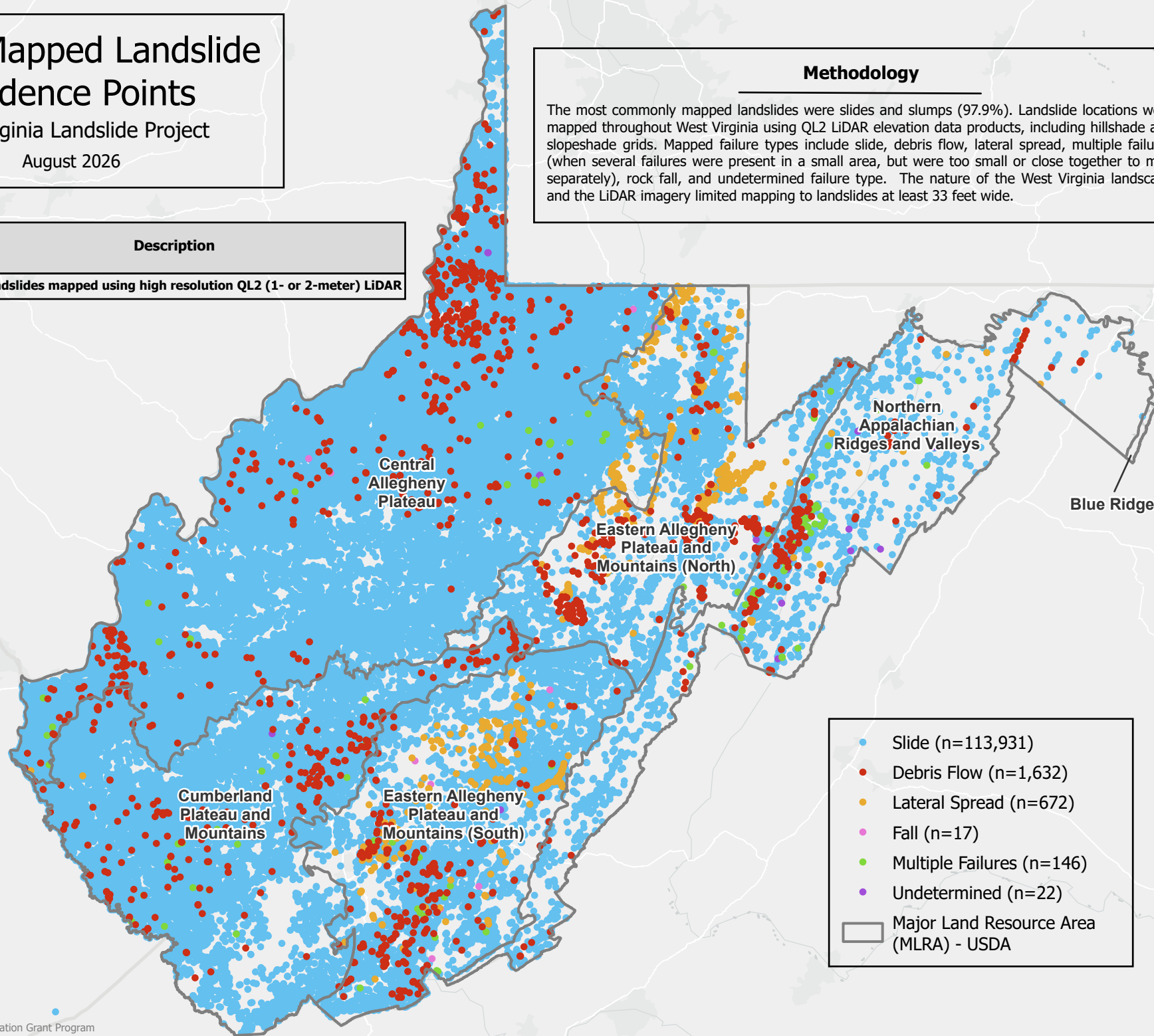
West Virginia Landslide Project

August 2026

Methodology

The most commonly mapped landslides were slides and slumps (97.9%). Landslide locations were mapped throughout West Virginia using QL2 LiDAR elevation data products, including hillshade and slopeshade grids. Mapped failure types include slide, debris flow, lateral spread, multiple failures (when several failures were present in a small area, but were too small or close together to map separately), rock fall, and undetermined failure type. The nature of the West Virginia landscape and the LiDAR imagery limited mapping to landslides at least 33 feet wide.

Mapped Landslides	Description
116,420	Total landslides mapped using high resolution QL2 (1- or 2-meter) LiDAR



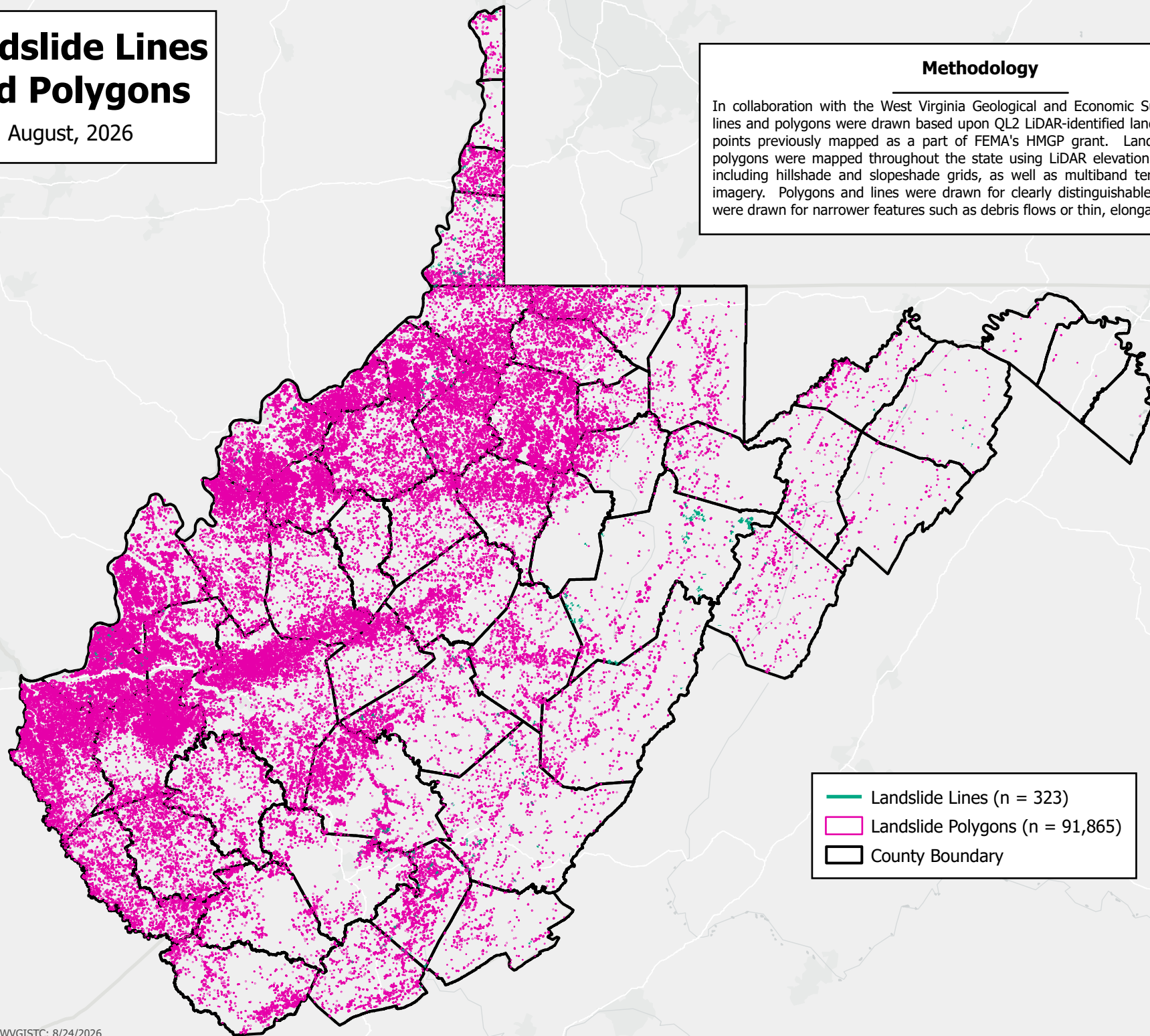
LIDAR DEM - LANDSLIDE MAPPING (point)				
Field Name	Alias	Description	Domain/Potential Entries	Value Type & Length
CreationDate	CreationDate	Date the point was identified/created (not landslide incidence date)	Date	Date
Creator	Creator	User ID of technician who created the point	Creator ArcGIS Online username	Text (128)
EditDate	EditDate	Date point was edited	Date	Date
Editor	Editor	User ID of technician who last performed edit(s)	Editor ArcGIS Online username	Text (128)
TypeOfMovement	Type of Movement	Type of slope failure present at location. Types include slide, debris flow, lateral spread, fall, multiple failures (where 3+ failures were located in a concentrated area and could not be mapped separately), and undetermined (wherein the technician was unable to determine the type, but was confident a failure was present)	Slide, debris flow, lateral spread, fall, multiple failures, undetermined	Text (50)
DataSource	Data Source	Source of data, if not originally mapped or created by WVGISTC	Name of study or public identifier	Text (254)
DEM_Source	DEM Source	Source DEM used to map failures	•1FT - 2017 WVU Lidar •1M - 2012 FEMA Jefferson, Berkeley & Morgan Lidar •1M - 2016-17 FEMA R3 Lidar WV Northeast •1M - 2016 FEMA R3 Lidar WV East •1M - 2016 FEMA R3 Lidar WV East Elk River •1M - 2017 FEMA Mercer County, WV Lidar •1M - 2018-19 FEMA Mason-Putnam Counties •1M - 2018-19 FEMA Tucker-Randolph Counties •1M - 2018-19 FEMA Wirt-Roane Counties •1M - 2018-20 FEMA South Central WV 1M - 2018 FEMA WV West 2M - 2004 FEMA Lidar: Gilmer County, WV 2M - 2009 Cabell County, WV Lidar 2M - 2009 USACE Bluestone Lake and Downstream Lidar 2M - 2010 - 2011 WVDEP DMR Lidar Project 3FT - 2018 Logan County, WV Lidar	Text (100)
DateIdentified	Date Identified	Date the failure was identified by WVGISTC technicians or the general public / date the failure point was created	Date	Date
Identified_By	Identified By	Name / initials of technician who identified the failure	Creator Name	Text (50)
VerifiedBy	Verified By	Name / initials of technician who verified a failure was present (Identified By QC)	Verifier Name	Text (50)
Field_Verified	Field Verified	Whether or not the failure was field verified	Yes / Null	Text (254)
Field_Verified_By	Field Verified by	Organization that performed field verification	WVU / WVGES	Text (50)
Source	Hyperlink	Link to any supplementary materials, such as news articles or other descriptive documents	Link	Text (254)
Comments	Comments	Comments made by mapper/verifier	Comments	Text (254)
Attachment	Attachment	Link to landslide photo(s)	Yes / No	Text (3)
In_Floodplain	In Floodplain	Whether or not the failure is in the 100-year floodplain	Null / unpopulated	Text (3)

Landslide Lines and Polygons

August, 2026

Methodology

In collaboration with the West Virginia Geological and Economic Survey, landslide lines and polygons were drawn based upon QL2 LiDAR-identified landslide incidence points previously mapped as a part of FEMA's HMGP grant. Landslide lines and polygons were mapped throughout the state using LiDAR elevation data products, including hillshade and slopeshade grids, as well as multiband terrain and aerial imagery. Polygons and lines were drawn for clearly distinguishable features; lines were drawn for narrower features such as debris flows or thin, elongated slides.



- Landslide Lines (n = 323)
- Landslide Polygons (n = 91,865)
- County Boundary

Landslide Incidence

West Virginia Landslide Project

April 2022

