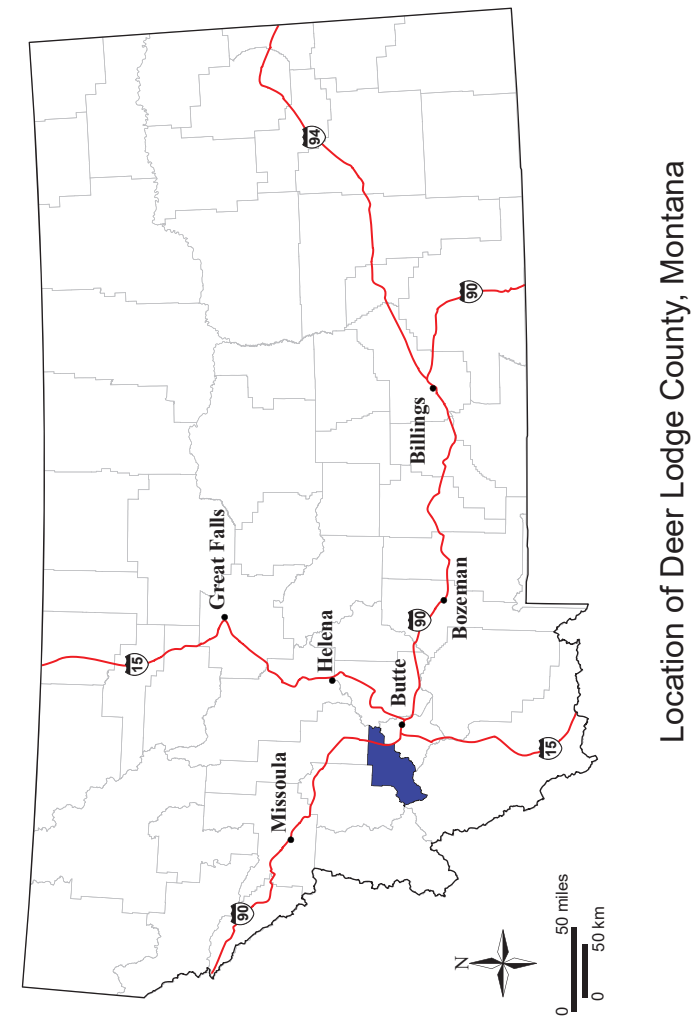
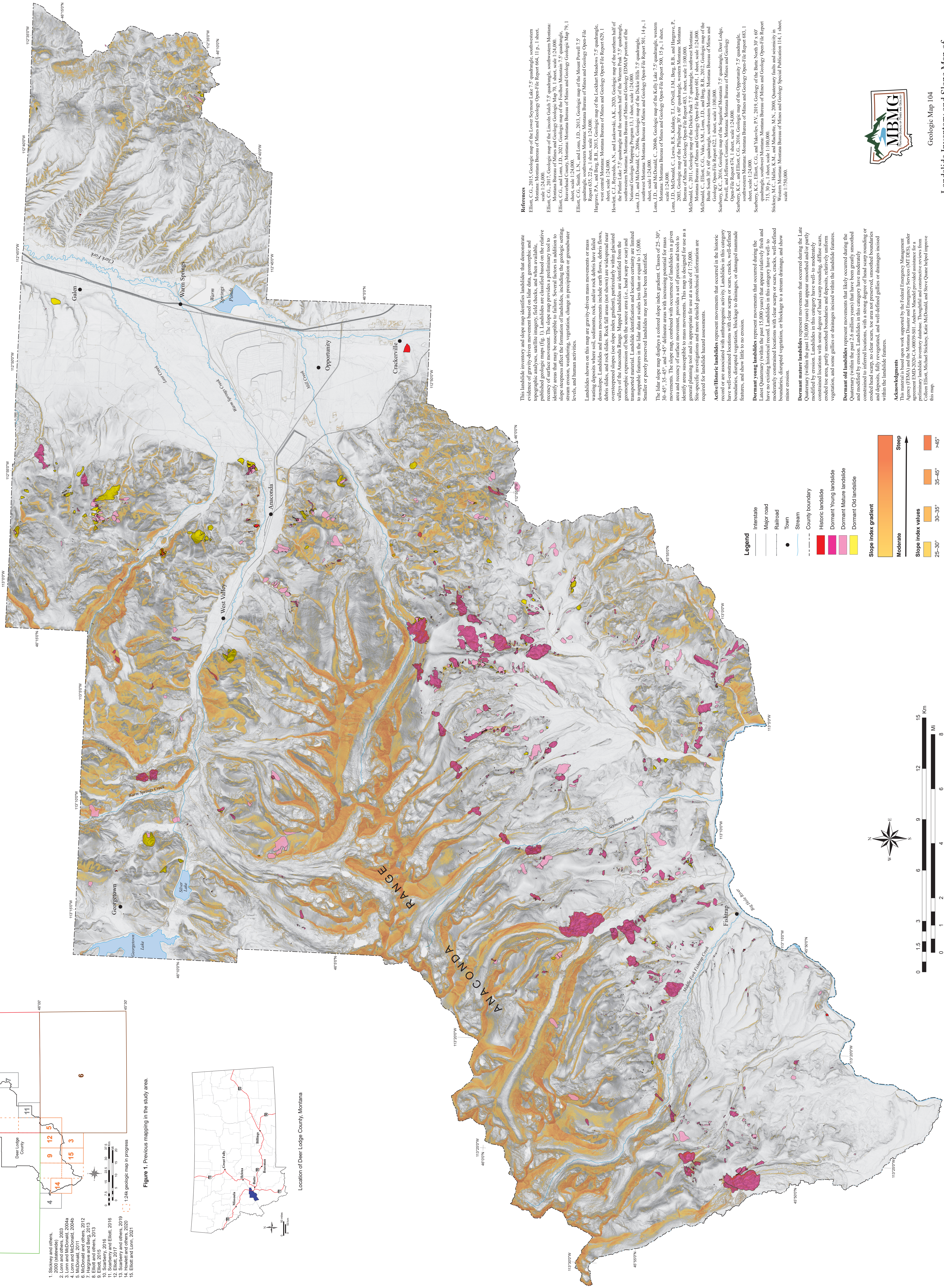


Figure 1. Previous mapping in the study area.



Location of Deer Lodge County, Montana



This landslide inventory and slope map identifies landslides that demonstrate evidence of gravity-driven movement based on lidar data, geomorphic and published geologic maps (Fig. 1). Landslides are classified based on the relative recency of surface movement. The slope map provides a preliminary tool to identify areas that may be susceptible to failure. Several factors in addition to slope steepness affect the formation of landslides, including the geologic setting, stream erosion, weathering, vegetation, change in precipitation or groundwater levels, and human activities.

Landslides shown on this map are gravity-driven mass movements or mass wasting deposits where soil, sediments, rock, and/or rock debris have failed downslope. Landslides and mass movements include earth flows, debris flows, debris avalanches, debris slides, debris flows, debris slides, debris flows, overstepped slopes (see slope index gradient), particularly within glaciated valleys of the Anacostia Range. Mapped landslides are identified from the geomorphic expression of both the source area (i.e., head scarp or scar) and transported material. Landslide identification and location certainty are limited to the best available data and are subject to change as more data become available. Smaller or poorly preserved landslides may not have been identified.

The lidar slope map displays a colored slope index gradient. Classes of 25–30°, 30–45°, 35–45°, and >45° delineate areas with increasing potential for mass movements. The slope map, combined with geologic maps, identifies areas susceptible to mass movements. This map is designed for use as a general planning tool and is appropriate for use at a scale of 1:75,000. Site-specific investigations and more detailed geotechnical information are required for landslide hazard assessments.

**Active/historic landslides** represent movements that occurred in the historic record or are associated with anthropogenic activity. Landslides in this category have well-constrained locations with clear scarps or scars, cracks, well-defined boundaries, disrupted vegetation, bledage to drainages, or damaged manmade features, and show little to no erosion.

**Dormant young landslides** represent movements that occurred during the Late Pleistocene to the present (15,000 years) that appear relatively fresh and have no existing historical record. Landslides in this category have well-to-moderately well-constrained locations with clear scarps or scars, cracks, well-defined boundaries, disrupted vegetation, or bledage to stream drainages, and show minor erosion.

**Dormant mature landslides** represent movements that occurred during the Late Quaternary (within the past 15,000 years) that appear smoothed and/or partly constrained locations with some degree of head scarp rounding, diffuse scars, eroded toe area, partly smoothed boundaries and deposits, relatively uniform vegetation, and some gullies or drainages incised within the landslide features.

**Dormant old landslides** represent movements that likely occurred during the Quaternary (within the past 2.6 million years) that have been greatly smoothed and modified by erosion. Landslides in this category have moderately constrained to inferred locations, with a strong degree of head scarp rounding or eroded head scarp, no clear scars, toe area not preserved, smoothed boundaries with little to no erosion, and well-defined gullies or drainages incised within the landslide features.

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Geologic Map 04  
Landslide Inventory and Slope Map of  
Deer Lodge County, Southwest Montana

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2025