

# **DIGITAL MAPPING TECHNIQUES 2020**

**The following was presented at DMT'20  
(June 8 - 10, 2020 - A Virtual Event)**

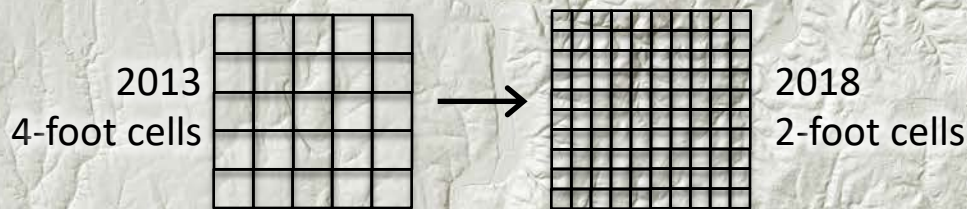
**The contents of this document are provisional**

**See Presentations and Proceedings  
from the DMT Meetings (1997-2020)**

**<http://ngmdb.usgs.gov/info/dmt/>**

# Using 2-foot LiDAR DEMs for geologic mapping in Montgomery County, MD

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Logan Hall, Eastern Shore Regional GIS Cooperative (ESRGC)

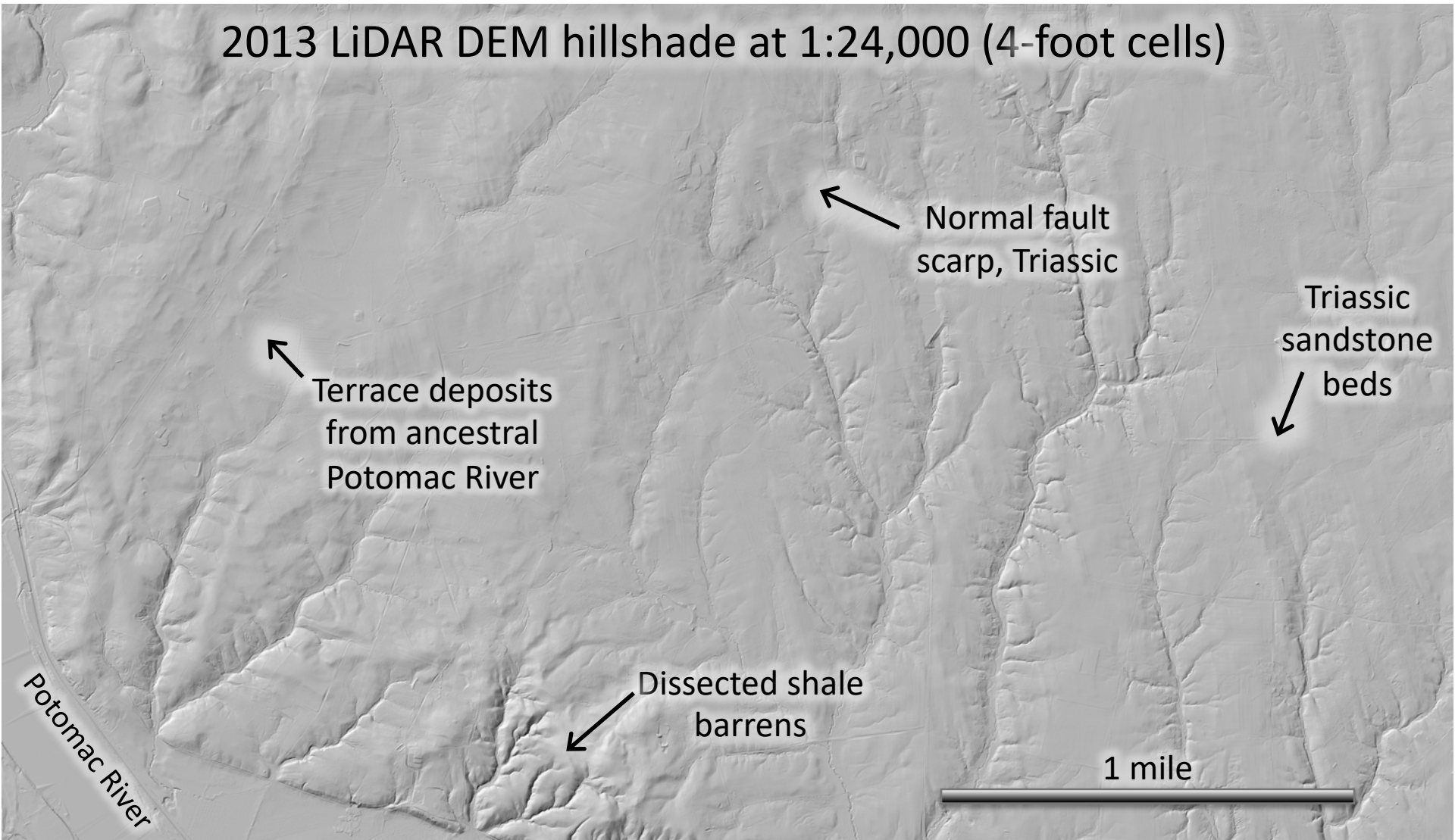


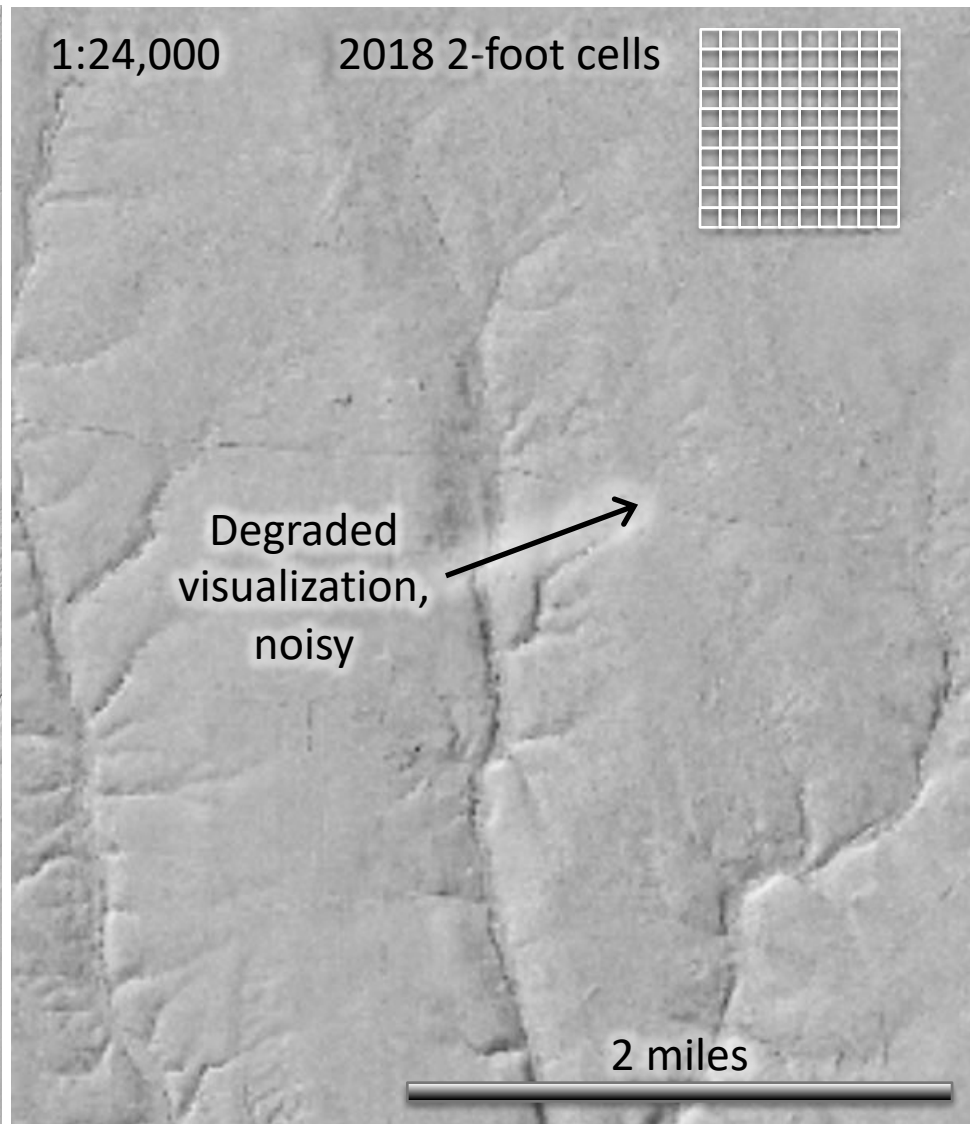
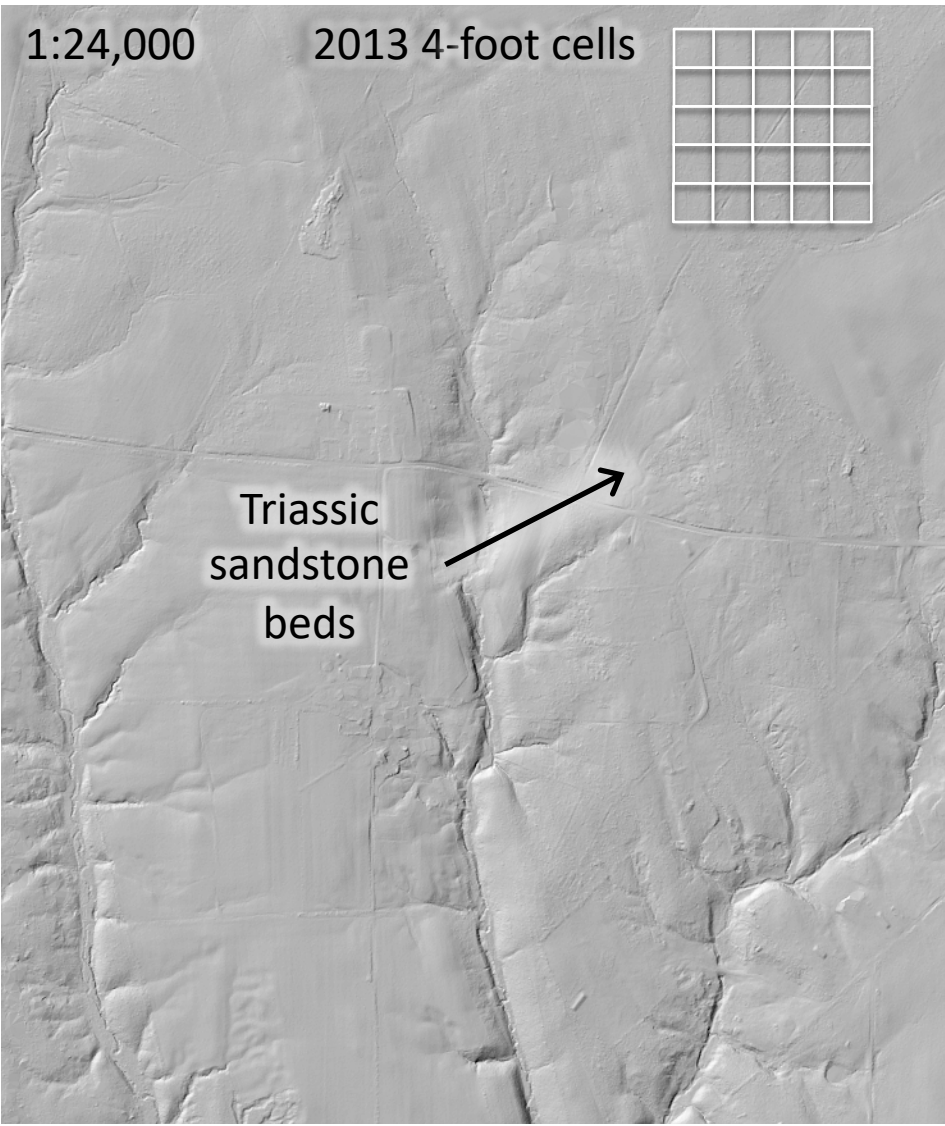
# What I want in a DEM

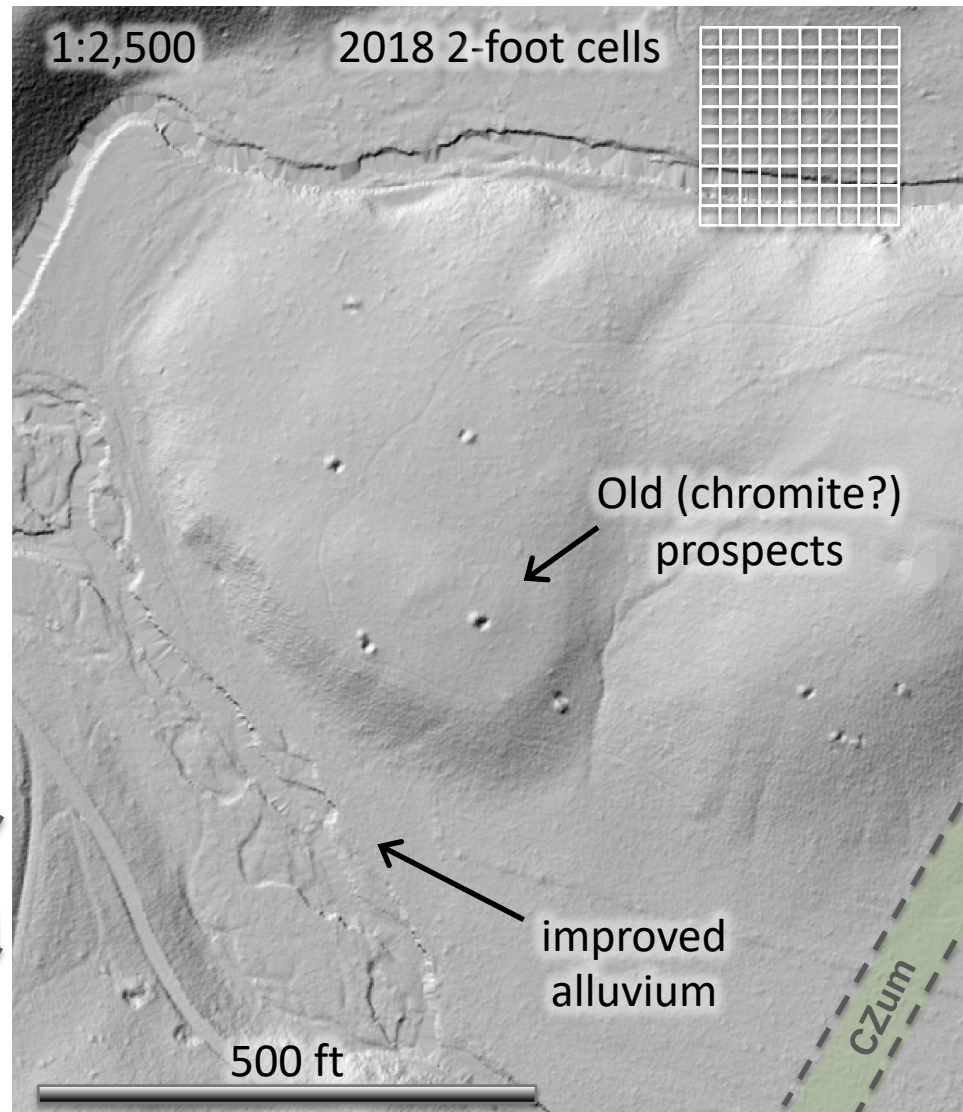
for 1:24,000 (STATEMAP) mapping:

- Hillshade (or slope, shaded relief, TPI...) for visualization of topography
- Usable in field and office from 1:100,000 (county) – 1:2,000 (outcrop)
- In the field: on iPad (OFFLINE!) as tile package basemap in ESRI Collector
- In the office: in ArcMap for drawing contacts, faults, alluvium, etc

## 2013 LiDAR DEM hillshade at 1:24,000 (4-foot cells)









# The problem:

I can't use my new 2-foot LiDAR at all scales

- At 1:100,000-1:5,000: visualization of topography in a typical ArcMap hillshade (slope, etc) is degraded/noisy, *I can't have this.*
- At 1:5,000-1:2,500: major improvement in detail, *I gotta have this.*

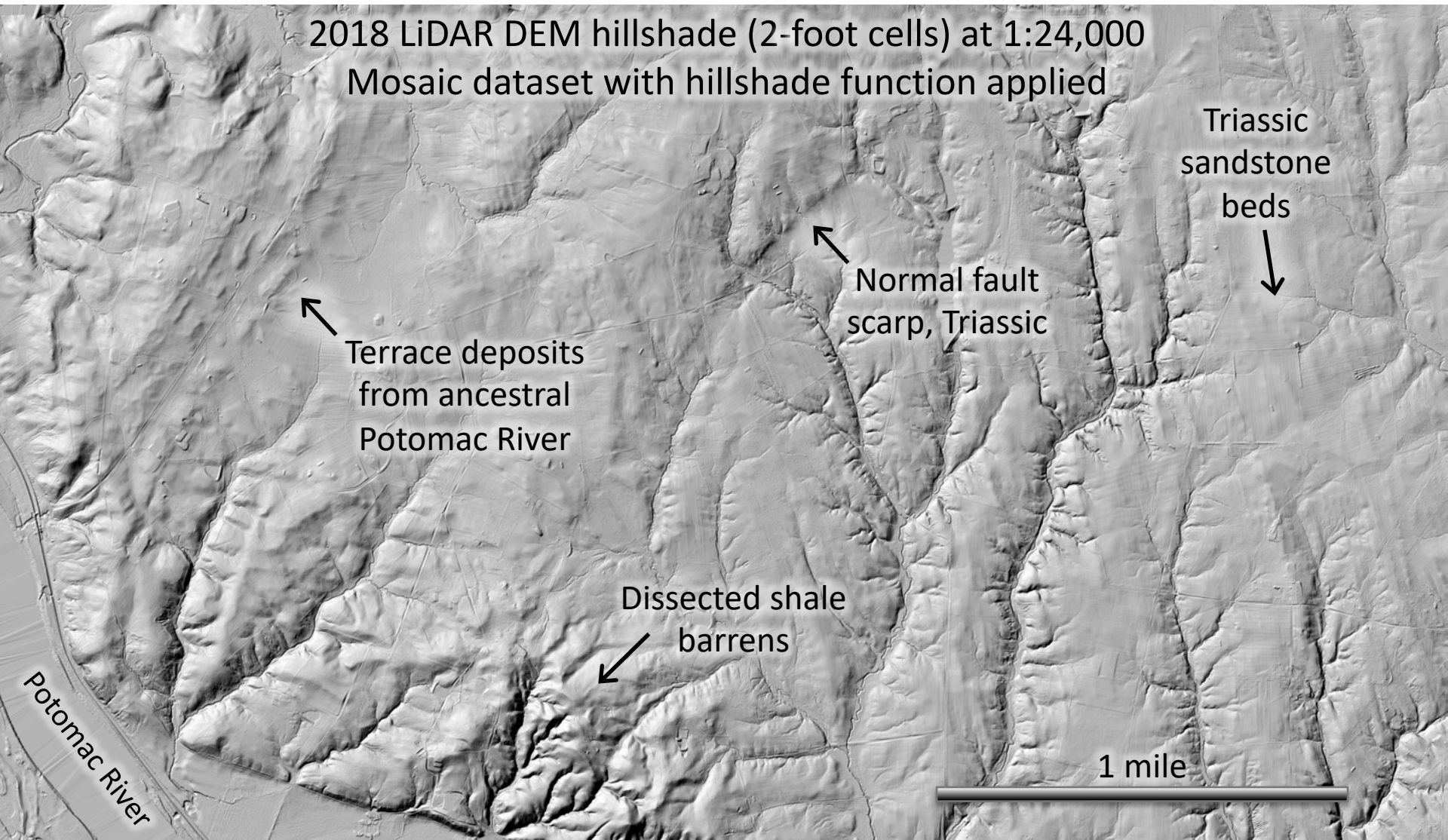


# The solution:

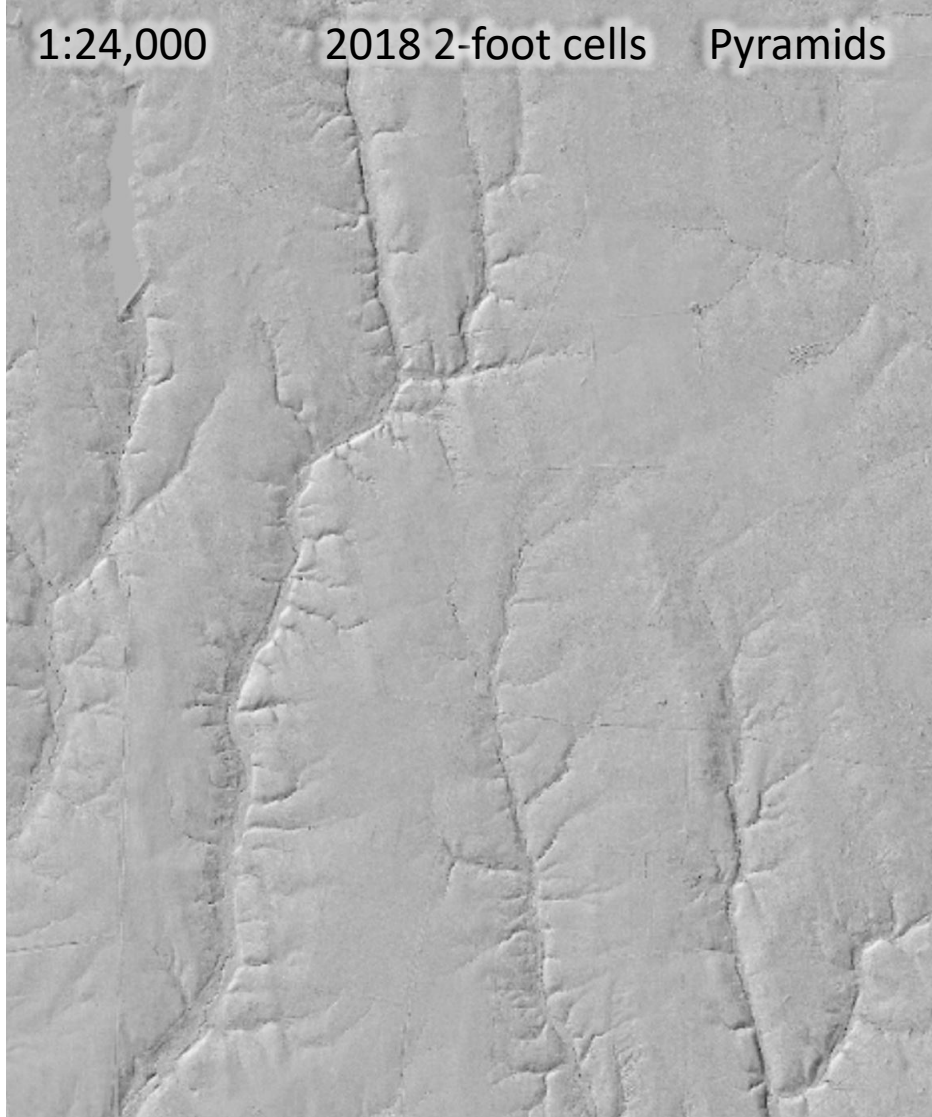
## MOSAIC datasets

- MD iMap online REST services of hillshade, slope, shaded relief from the 2-foot 2018 DEM, are great at all scales
- These are produced by Logan Hall at ESRGC for MDiMap
- Logan Hall says: he uses Mosaic raster datasets with functions applied
- Mosaics use overviews for downsampling NOT pyramids
- Total success! (you'll see on next slide)
- *Why? Because overviews use .tifs?*
- I am able produce a tile package for offline field use on iPad





1:24,000 2018 2-foot cells Pyramids



1:24,000 2018 2-foot cells Mosaic overviews

