

ETWG Geomorphology Focus Group

Description: A group to share information on geomorphology tools and projects, especially those using topographic data to assess geomorphic features and change.

Points Of Contact: Pete McCarthy (pmmcarth@usgs.gov), Roland Viger (rviger@usgs.gov)

Meetings: [Geomorph Tools Group](#): Determined by participant availability prior to meeting.

To join, email cdi@usgs.gov.

Introduction

These pages focus on projects using topographic data to assess geomorphic features and change. Some broad topics that may be of interest to this group:

- What are the benefits and shortcomings of various topographic data sources relative to specific features and processes? Key topographic data sources include lidar (airborne, terrestrial), structure from motion (UAV aerial imagery, historic photos), topobathymetry, and more traditional data sources (e.g., NED)
- How can lidar and other high-resolution topographic data be used to detect geomorphic change and what geomorphic metrics are the most applicable to quantifying change? How do we distinguish actual changes from error inherent in multi-date topography?
- What are the best GIS tools/software that currently exist for geomorphic analyses (e.g. [Geomorphon](#), [GeoNet](#), [Geomorphic Change Detection](#), [DEM Geomorphology Toolbox](#), [FACET](#), [Grass](#), [Saga](#), [Whitebox GAT](#)).
- Is there a suite of geomorphic metrics that could be used in a 'screening analysis' to rapidly categorize watersheds/floodplains/channels relative to their anticipated behavior (and what behaviors are we interested in)?

References:

- [Evaluation and testing of standardized forest vegetation metrics derived from lidar data](#)
- [Mapping Species Distributions](#) - Janet Franklin
- F.T. Manen, et al, [Habitat models to assist plant protection efforts in Shenandoah National Park, Virginia, USA](#)
- J.A. Young, et al, [A terrain-based paired-site sampling design to assess biodiversity losses from eastern hemlock decline](#)
- Geomorphometry.org website: <http://geomorphometry.org/>
- Workshop: "[Advancing the Analysis of High Resolution Topography](#)", OpenTopography.org, Broomfield, CO, August 21-24, 2018