Minutes Hydro TWG 5/9/2019

Led by Danielle Favreau

Attendees:

Jerry Korol	Geoffrey Klein	Evan Brown
Sabine Krier	Maya Daurio	Bekki Waskovich
William (Bill) Whitehead	Troy (MT)	Jay Stevens
Drew Nemecek	Jason Wright	Linda Davis
Alison Tompkins	Cyndi Coultor	Missy Harris

Updates, Danielle Favreau:

USGS is updating the VisFilter attribute with 8 different scales; 1:24,000 to 1:5,000,000. This will limit what is visible at smaller scales, making it easier to read at different scales. Danielle will send out an email with Idaho Hydro News when available.

WBD Model Changes. Increasing the LineSource attribute field length. Decreasing HUType attribute field length. Adding ReferenceGNIS_IDs attribute so that every HUC has a tieback to the GNIS name ID. Danielle will let people know when it is complete.

NHD Plus. The most wanted areas in need of updates has been posted. NHD Plus is now in Beta and work has started on the official version.

Markup Reviewer. There are constant improvements being made. Use this tool for submitting small edits and is available for everyone to use. Contact Danielle or Linda if you have questions.

NHD Tools. Still on ArcMap 10.5.1 and there has been no decision yet about what to do next. There is no backwards compatibility. Tools will be coming on the web.

Deriving Stream Networks from LiDAR for State Endowment Lands – Geoffrey Klein, RS Analyst, IDL, gklein@idl.idaho.gov

Please see slide deck-streamsfromLiDAR_idl.pdf.

Introduction

- Couer de Alene region buys a lot of LiDAR in order to improve the stream layer
- A lot of data is still being QA/QC
- Some data is proprietary and cannot be shared
- Things that need improvement
    - Level of accuracy of stream and road layers

Channels are way more accurate

- Looking for defined stream channel bed
    - Changes in timber practices are based on stream location
- Defining streams into 2 categories
    - Type 1 – has fish
    - Type 2 – no fish
    - A lot of work is going into finding out which is which
- Limitations
    - Accuracy issues with adjacent "forest butte" (See slide 7)
    - Looking at effects on the stream by management practices

Deriving the streams

- Problems
    - Data so accurate that is shows the stream lines following the roads when culverts are in use
        - Bridge and culvert data is not as accurate as LiDAR data
        - Still had to find points where streams cross roads
        - Helps in creating new culver/bridge layers, but takes a lot of manual hours
- Using ArcPro to easily share data across the state for hydrologist and other staff input (see slide 10)
    - Geoprocessing tools work fast and clean
        - The stream delineation tool has been working very well
        - Task Designer can be shared with others and is very useful to pass work on
- Process
    - See slide 11 for Process chart
    - DEM Burn areas
        - Change elevation raster data to lower value, then Fill
            - You end up with a hole in roads that helps you with stream creation
    - Flow Accumulation
        - Set threshold for finding streams in order to not create too many new streams
        - A lot of field validation was done to make sure a stream is actually there
        - Geology and soil type can really affect the accuracy of stream existence
        - Next step
            - Get to stream predictive modeling
                - Give a spot a predictive rating on actual stream existence
                - Hard to scope out

Stream Monitoring Project (Slides 14-18)

- Introduction

        - For more information, contact Geoff and he will put you into contact with the Project Lead
        - Haven't had any historic change tracking
        - Started taking samples for environmental changes
            - Looking at fish populations
            - Using drones to model stream channels for monitoring purposes
                - How is the channel changing and how is run off changing
            - Will continue yearly monitoring and possible reconstruction practices
- PhoDAR
    - Take a bunch of geologged pictures, run algorithms to turn it into a 3D model
    - By using NDVI from drone data, chlorophyll levels can be calculated
    - Right now, data is being collected and 3D models are being created
    - PhoDAR doesn't penetrate tree canopy and can't see what the stream is doing under the vegetation
    - Different modeling products include; Pix4D, AGI Soft

LiDAR based NHD and WBD Delineation in Western Oregon – Jay Stevens, BLM, gstevens@blm.gov

- See presentation slides and recording below
    - 04/26 NHD Adv. Team meeting presentation (PPT and recording).
    - Presentations were very similar, although not exact.

Other Business

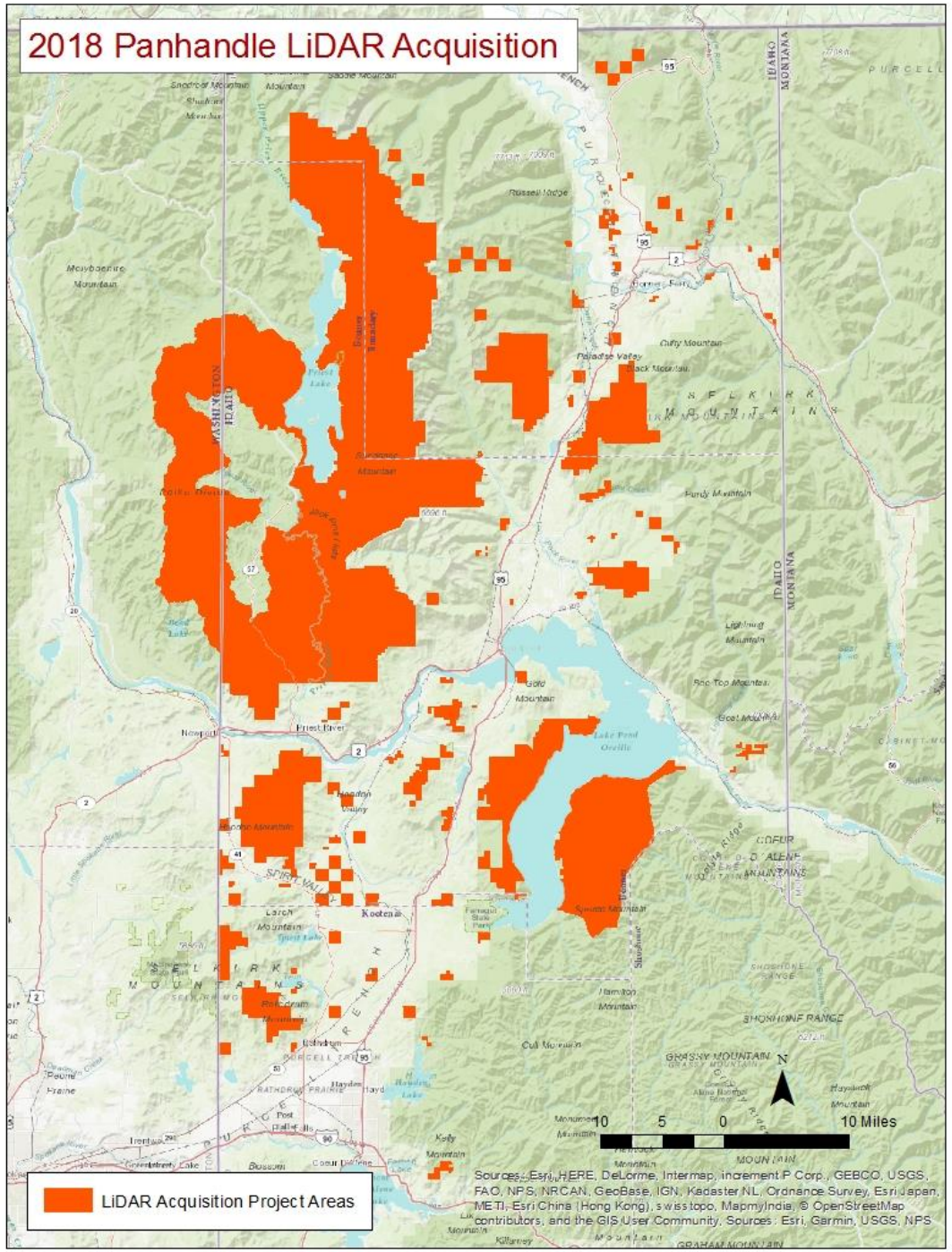
No other business presented.

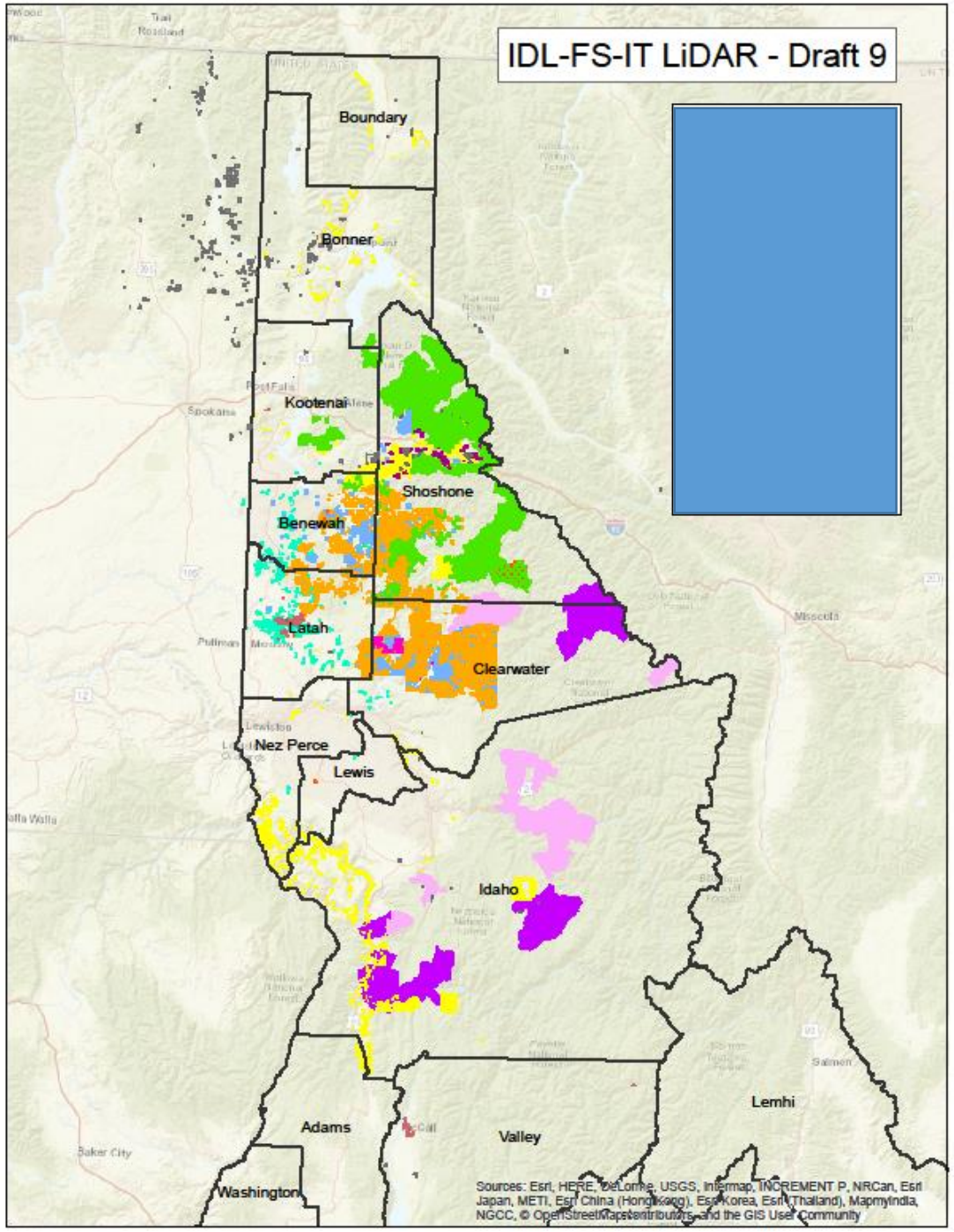
Next TWG is September 12, 2019!

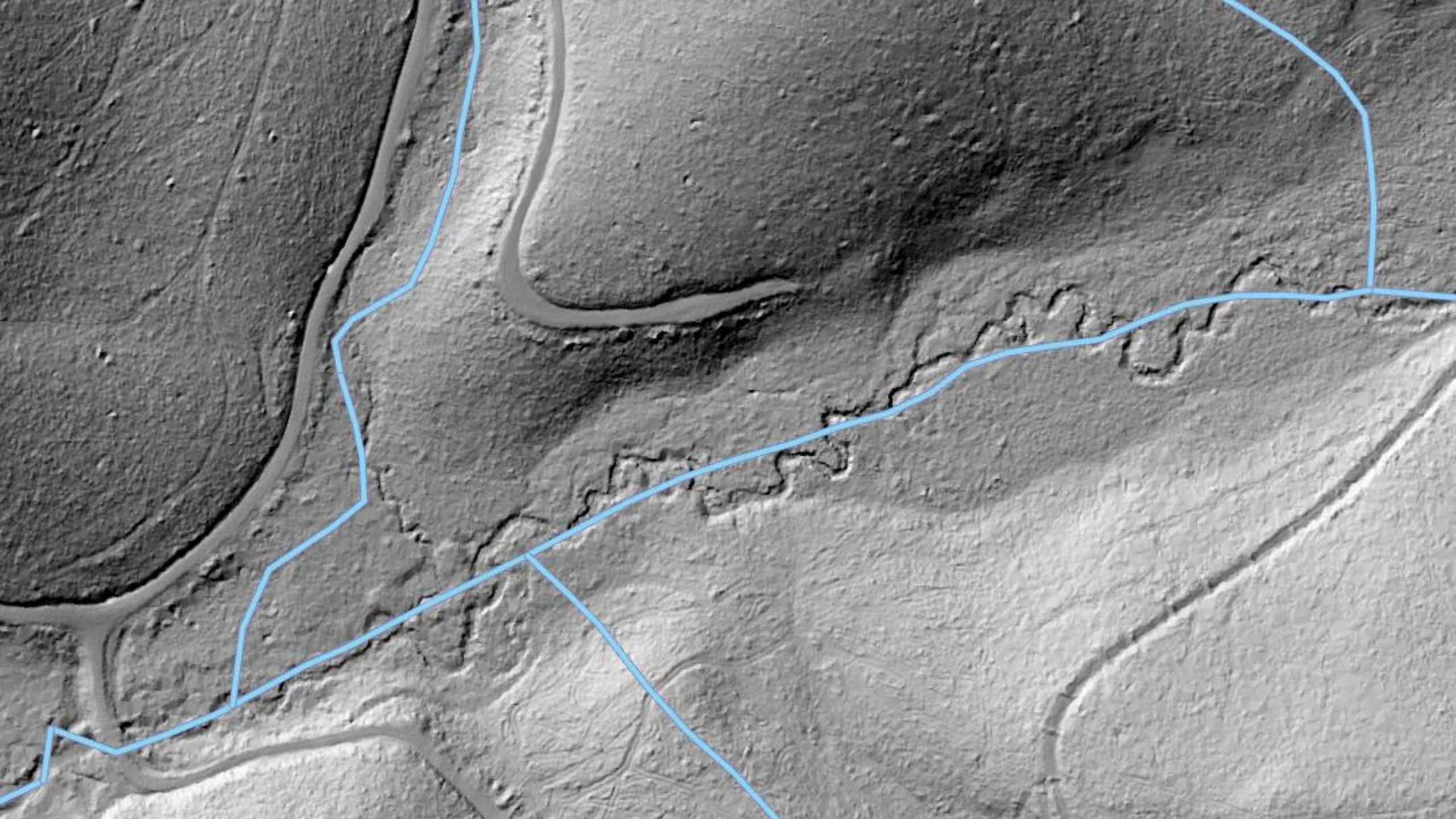
Geoff Klein

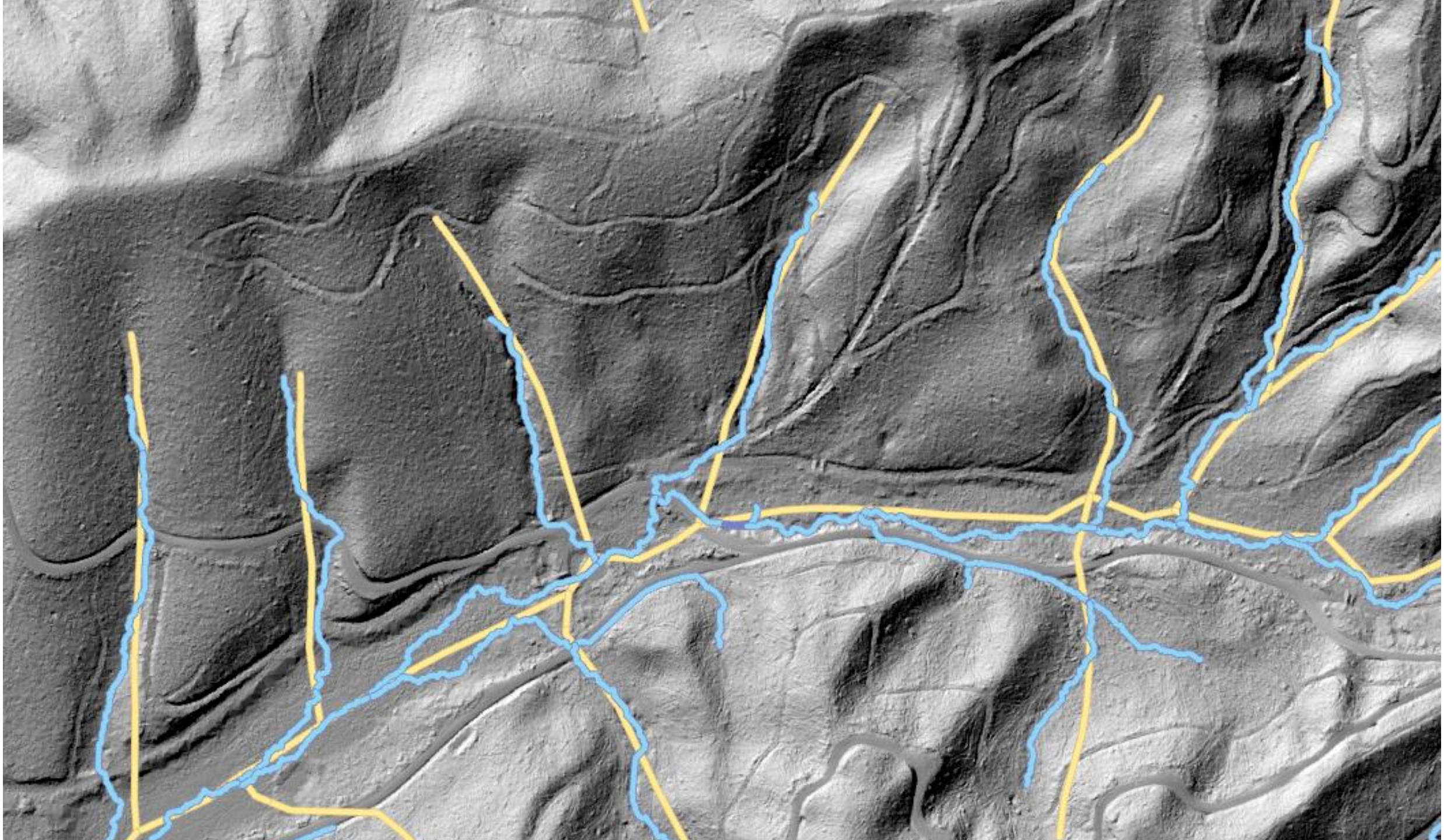
RS Analyst

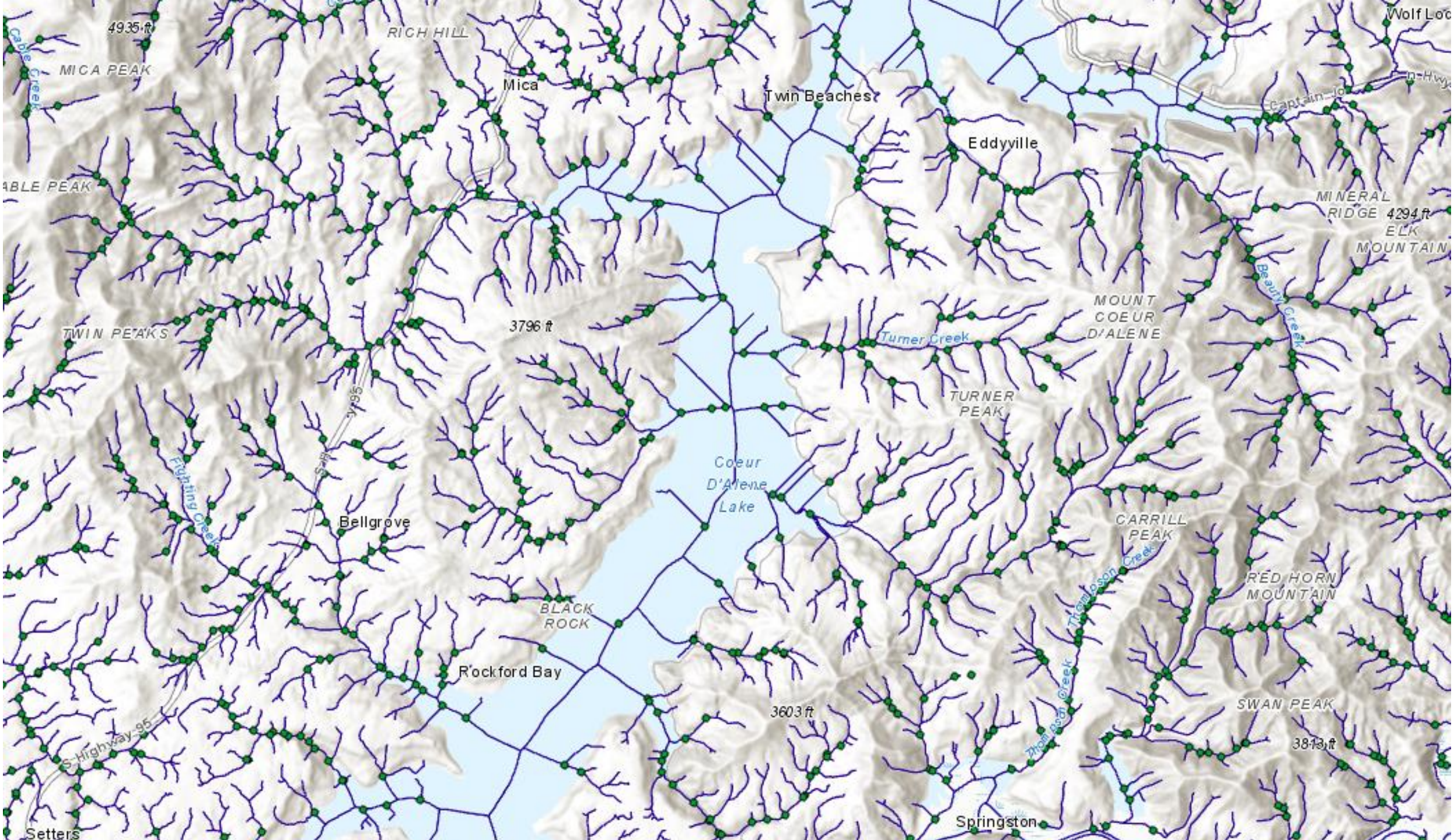
Idaho Department of Lands

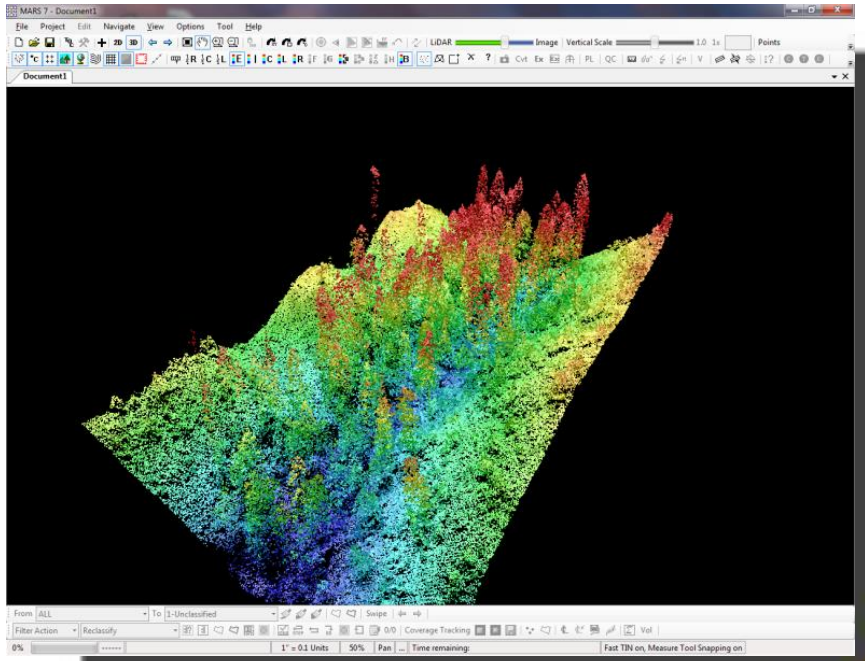

2018 Panhandle LiDAR Acquisition
LiDAR Acquisition Project Areas
10 5 0 10 Miles
N
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, Sources: Esri, Garmin, USGS, NPS

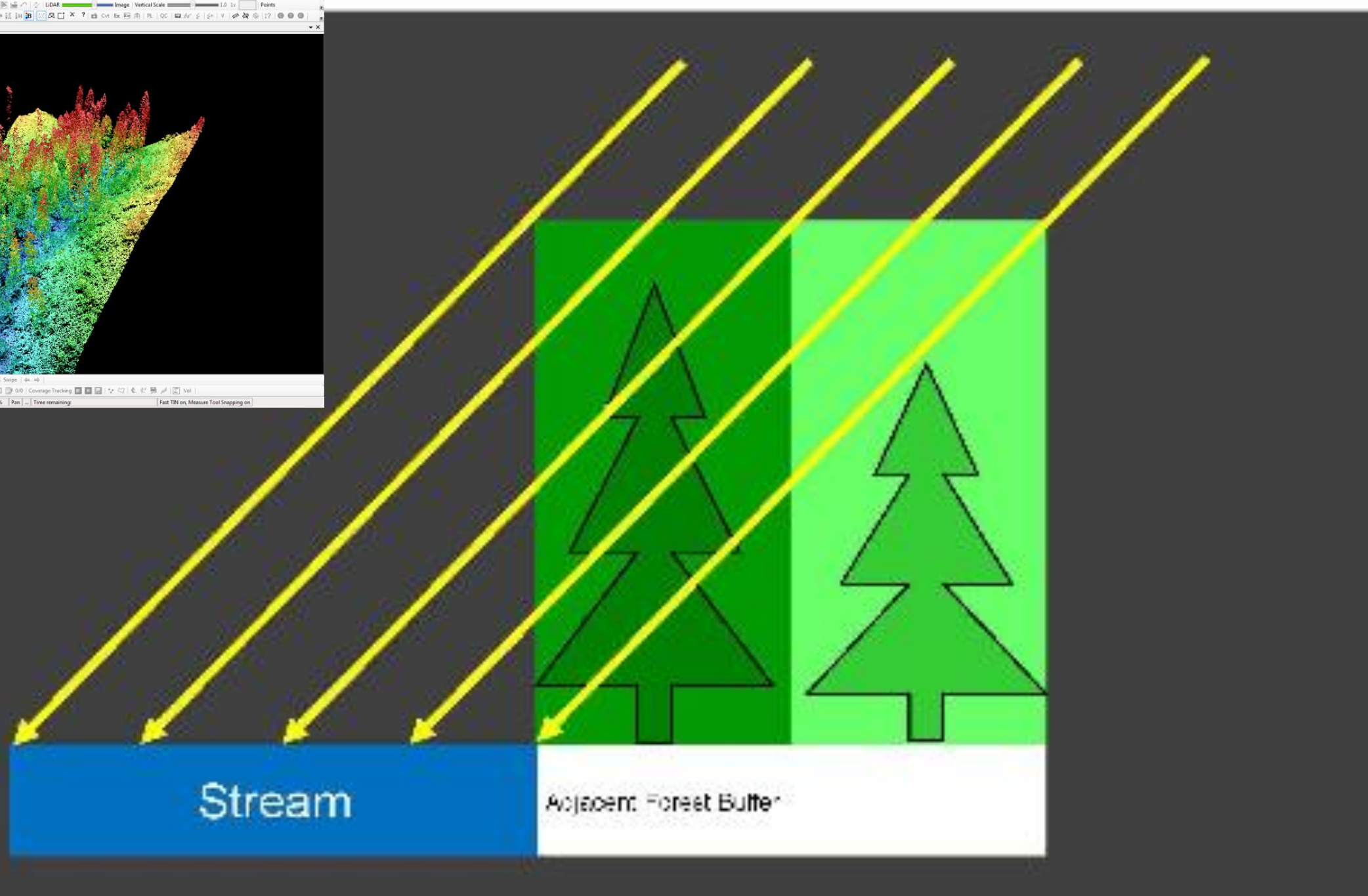

IDL-FS-IT LiDAR - Draft 9
Boundary
Bonner
Kootenai
Shoshone
Benewah
Latah
Clearwater
Nez Perce
Lewis
Idaho
Adams
Valley
Lemhi
Washington
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

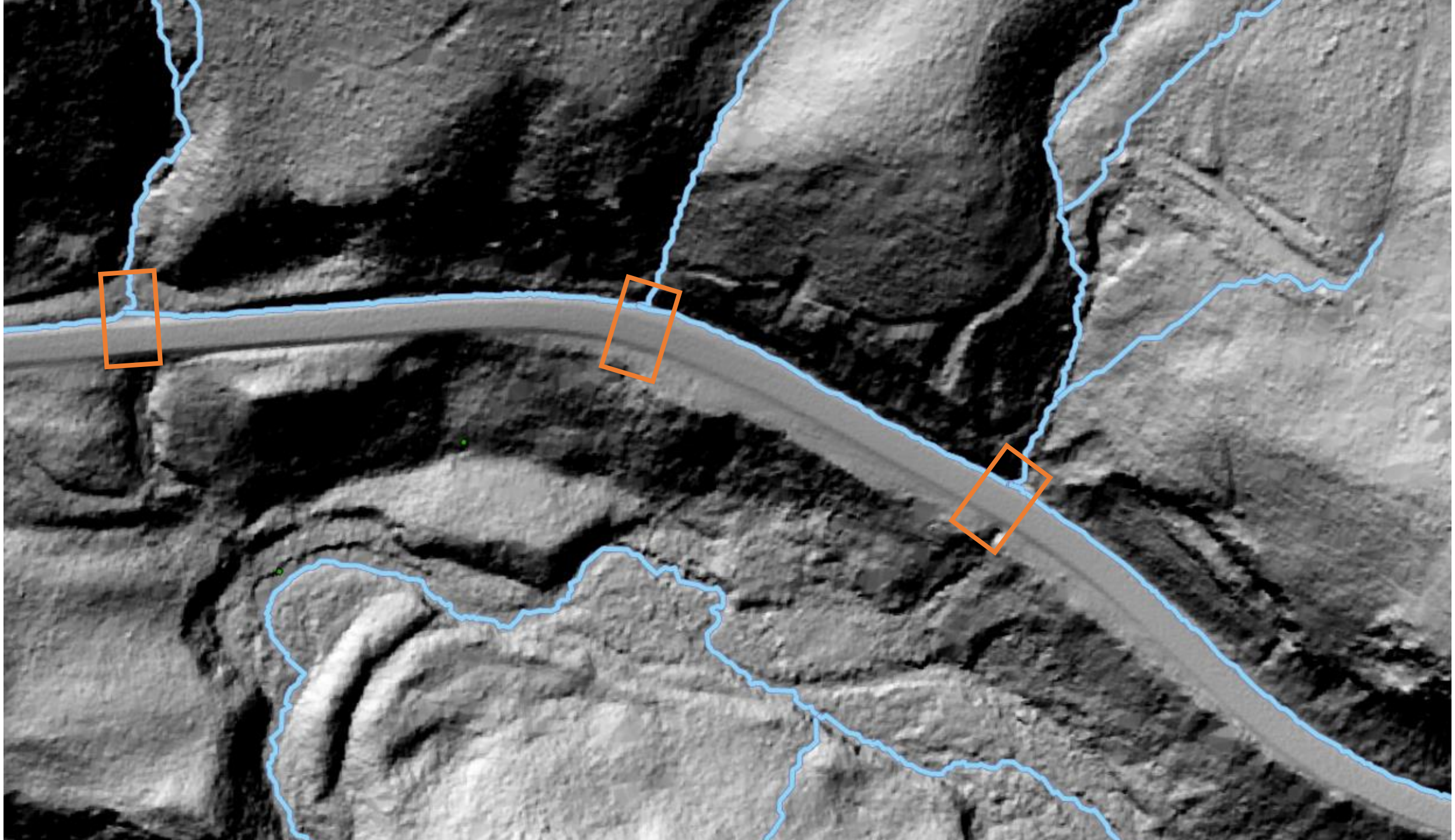


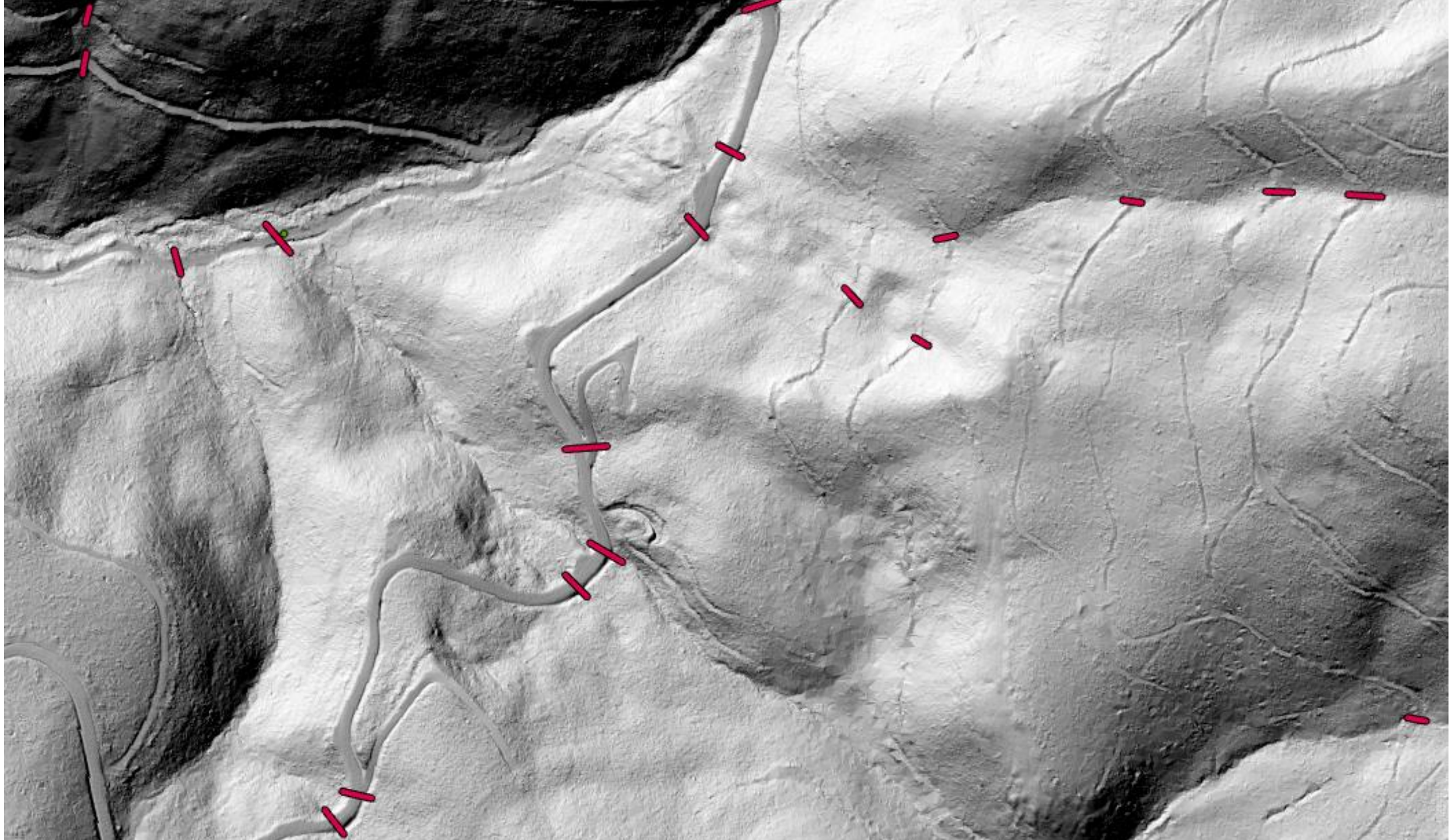


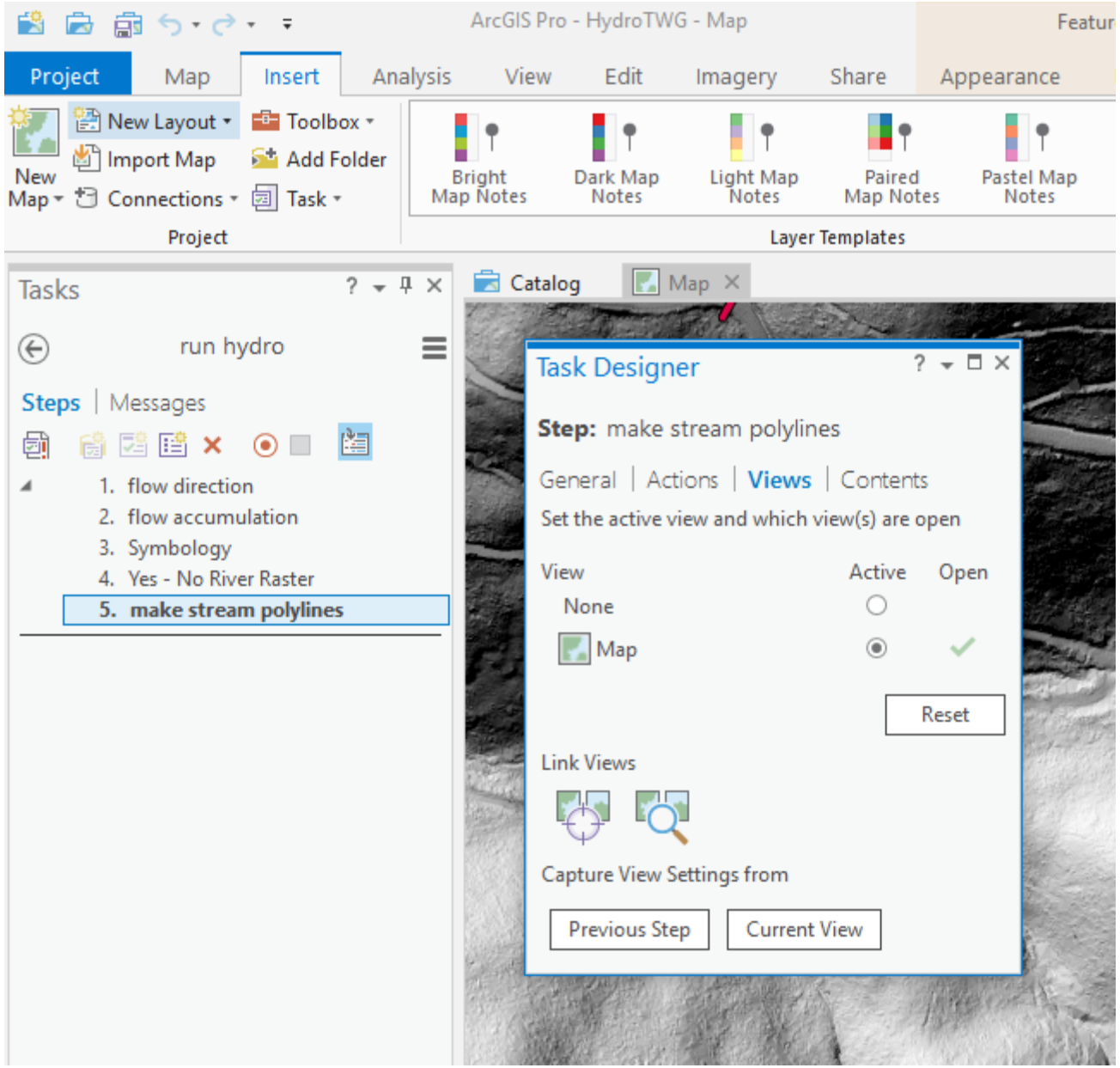

4935 ft
RICH HILL
MICA PEAK
Cable Creek
Mica
Twin Beaches
Eddyville
Wolf Lodge
Captain John Hwy
ABLE PEAK
MINERAL RIDGE
4294 ft
ELK MOUNTAIN
Beauty Creek
MOUNT COEUR D'ALENE
3796 ft
TWIN PEAKS
Turner Creek
TURNER PEAK
Fighting Creek
Coeur D'Alene Lake
Bellgrove
CARRILL PEAK
Thompson Creek
RED HORN MOUNTAIN
BLACK ROCK
Rockford Bay
3603 ft
SWAN PEAK
3813 ft
S Highway 95
Setters
Springston

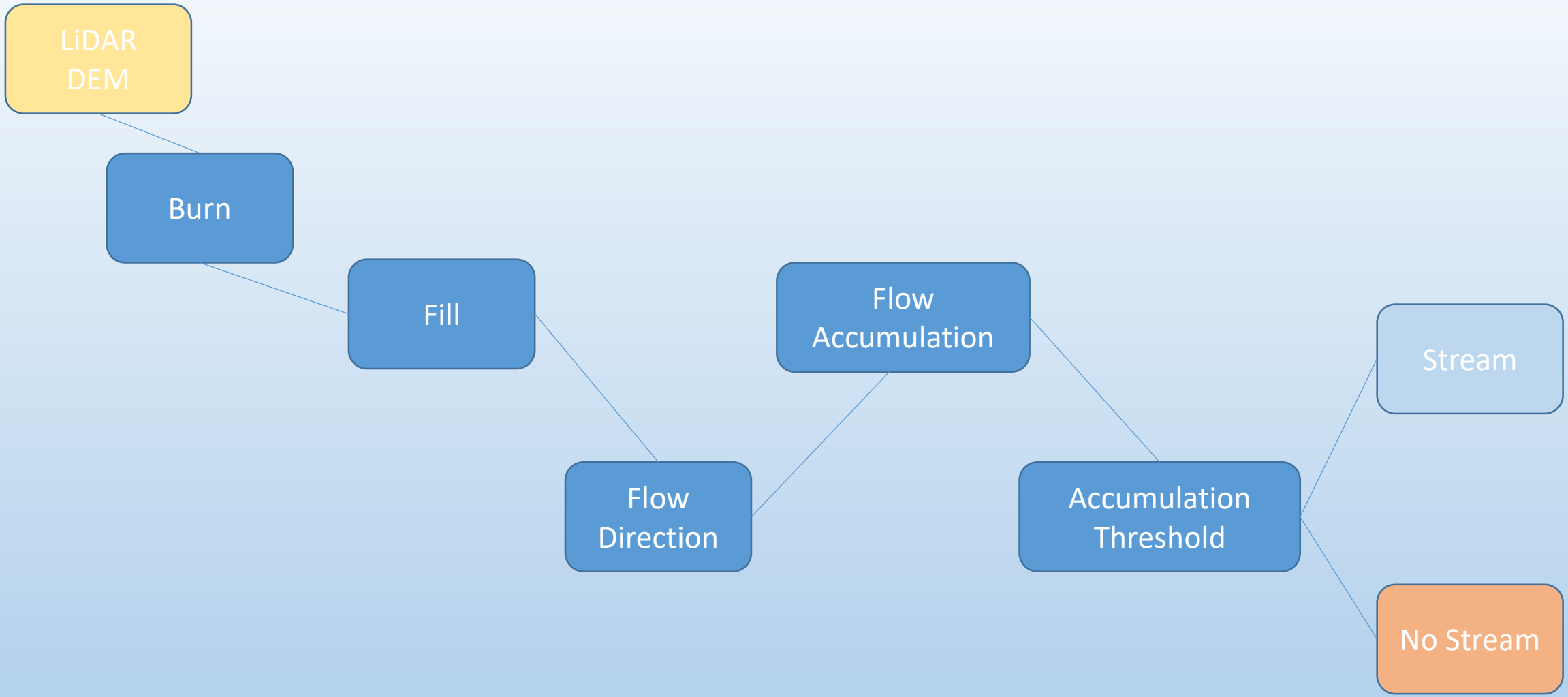

MARS 7 - Document1
File Project Edit Navigate View Options Tool Help
Document1

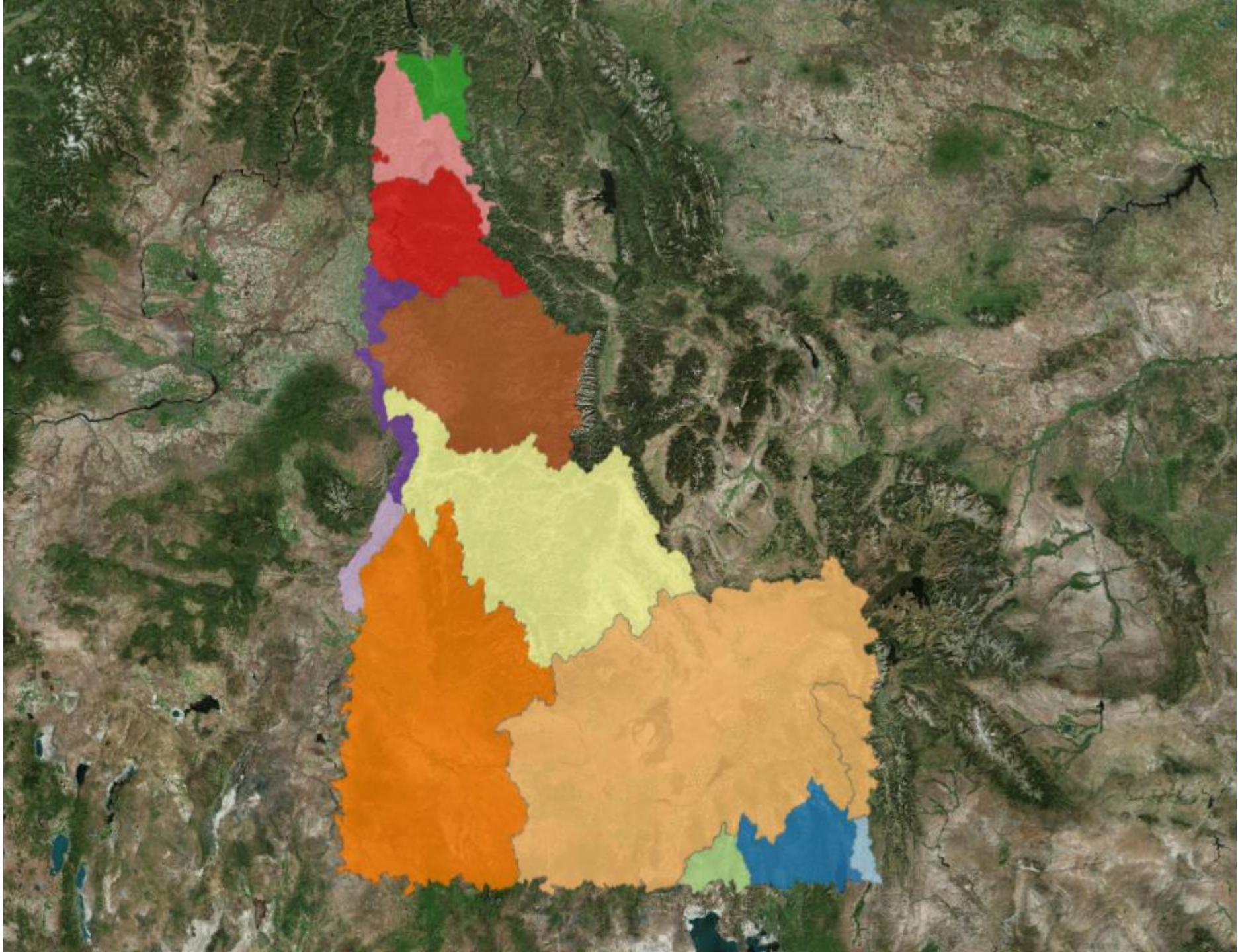

Stream
Adjacent Forest Buffer

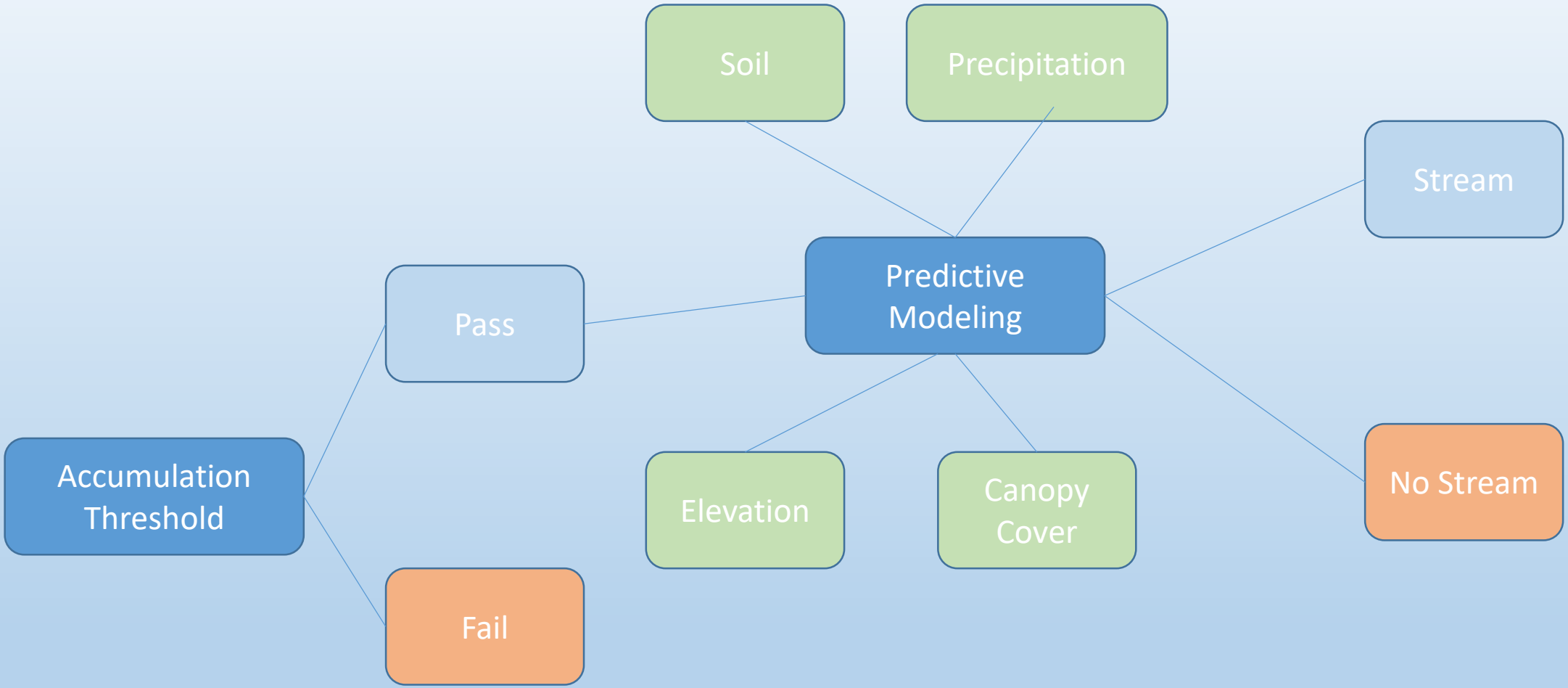


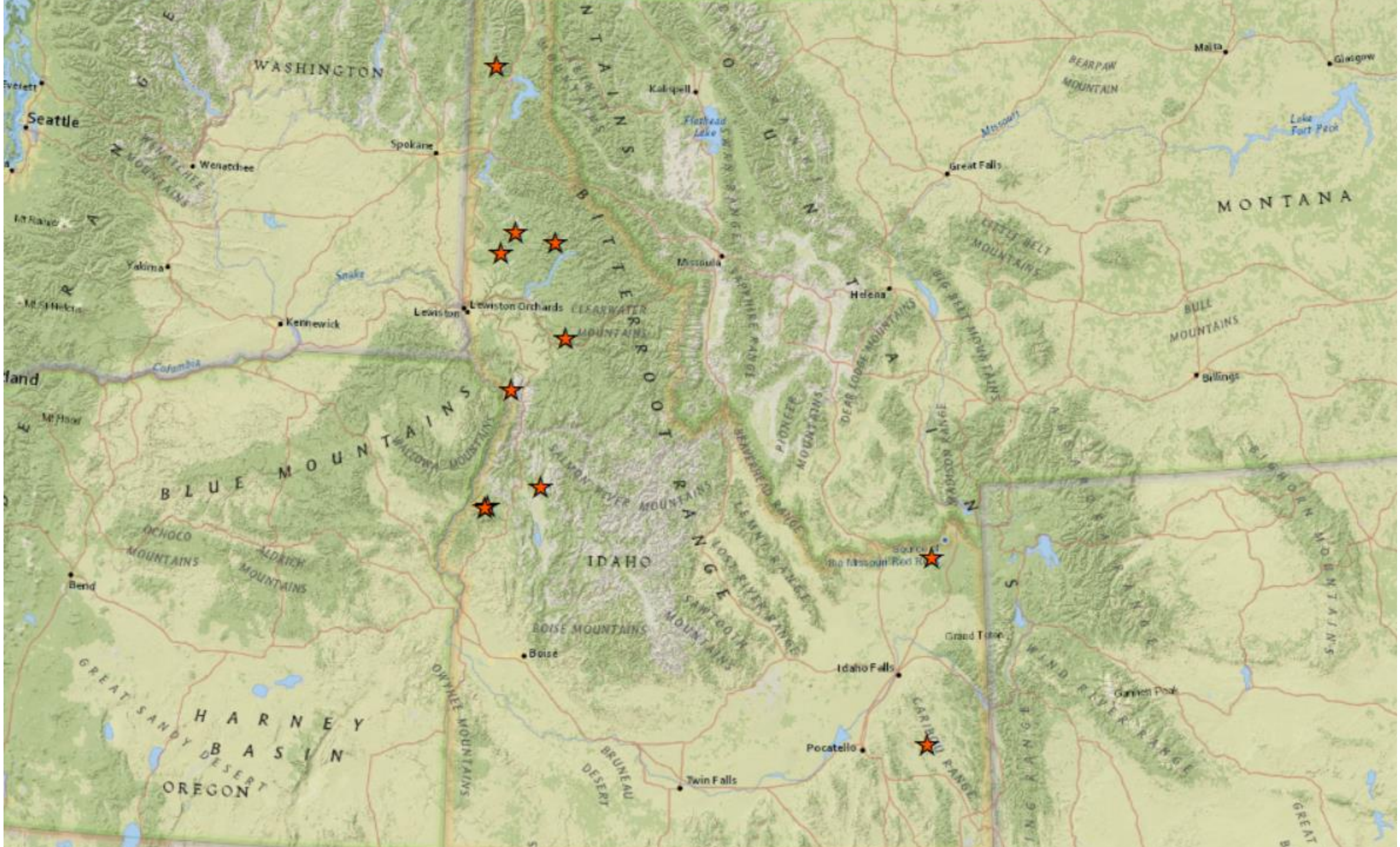


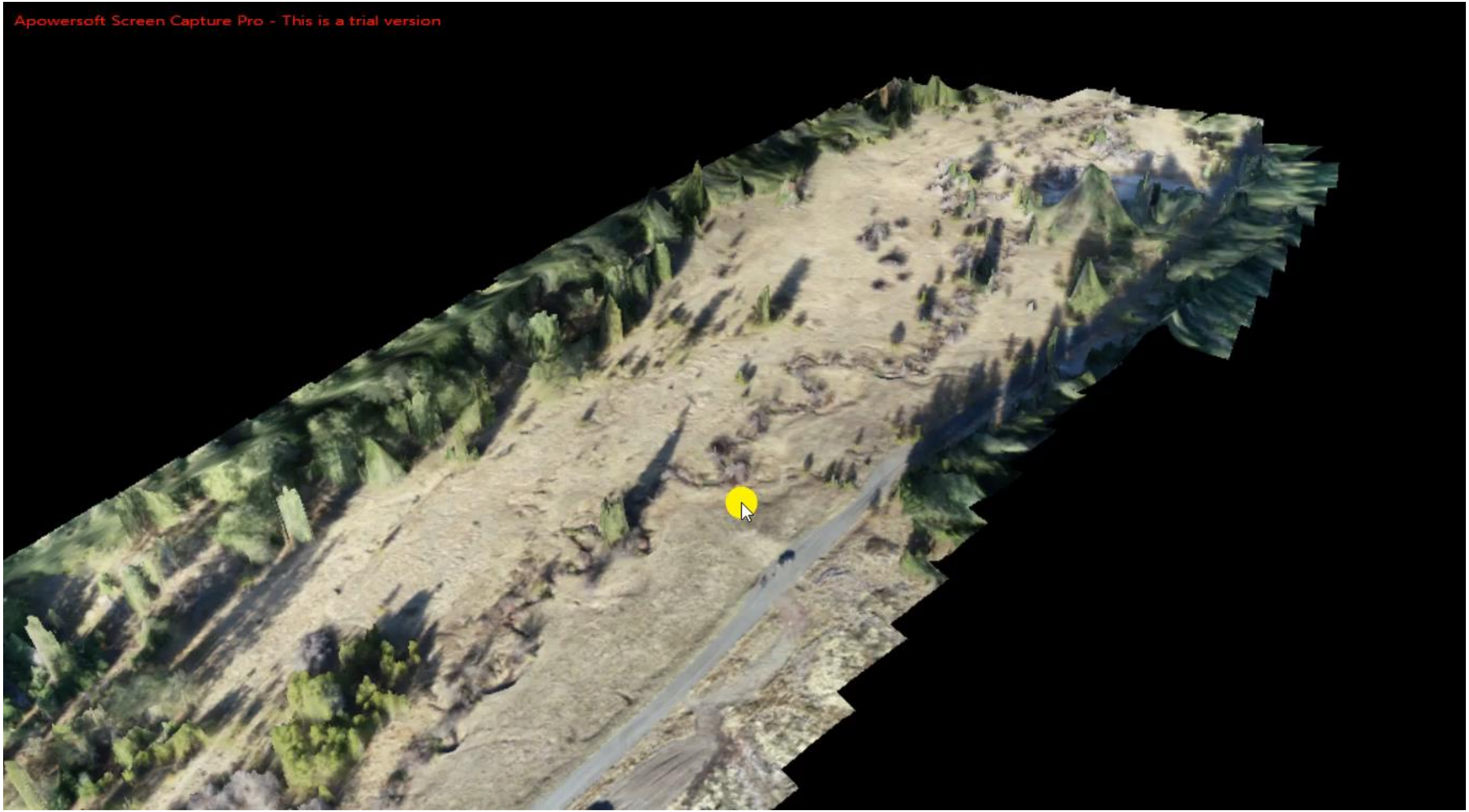

ArcGIS Pro - HydroTWG - Map
Featur
Project
Map
Insert
Analysis
View
Edit
Imagery
Share
Appearance
New Map
New Layout
Import Map
Connections
Toolbox
Add Folder
Task
Project
Bright Map Notes
Dark Map Notes
Light Map Notes
Paired Map Notes
Pastel Map Notes
Layer Templates
Tasks
run hydro
Steps
Messages
1. flow direction
2. flow accumulation
3. Symbology
4. Yes - No River Raster
5. make stream polylines
Catalog
Map
Task Designer
Step: make stream polylines
General
Actions
Views
Contents
Set the active view and which view(s) are open
View
Active
Open
None
Map
Reset
Link Views
Capture View Settings from
Previous Step
Current View

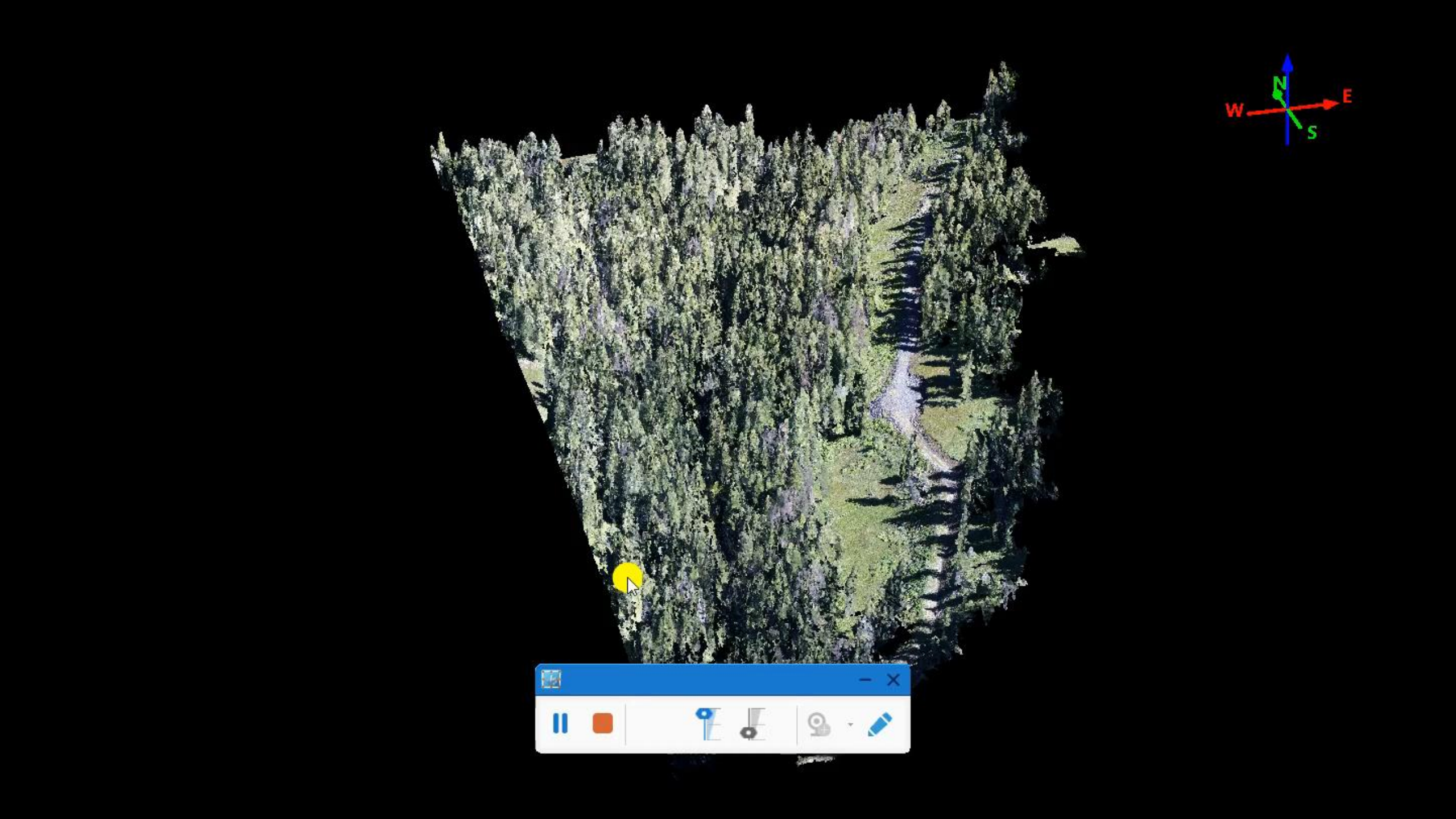

LiDAR DEM
Burn
Fill
Flow Direction
Flow Accumulation
Accumulation Threshold
Stream
No Stream




Soil
Precipitation
Stream
Pass
Predictive Modeling
Accumulation Threshold
Elevation
Canopy Cover
No Stream
Fail


WASHINGTON
Seattle
Wenatchee
Spokane
Kalispell
Flathead Lake
Great Falls
Malta
Glasgow
BEARPAW MOUNTAIN
Lake Fort Peck
MONTANA
Missoula
Helena
Yakima
Snake
Lewiston
Lewiston Orchards
Kennewick
Columbia
CLEARWATER MOUNTAINS
BITTERROOT RANGE
SAPPHIRE RANGE
PIONEER MOUNTAINS
DEAR LODGE MOUNTAINS
BIG BELT MOUNTAINS
LITTLE BELT MOUNTAINS
BULL MOUNTAINS
Billings
BLUE MOUNTAINS
WALLOWA MOUNTAINS
SALMON RIVER MOUNTAINS
BEAVERHEAD RANGE
LEMHI RANGE
LOST RIVER RANGE
SAWTOOTH MOUNTAINS
OCHOCO MOUNTAINS
ALDRICH MOUNTAINS
Bend
IDAHO
BOISE MOUNTAINS
Boise
Idaho Falls
Grand Teton
Gannett Peak
WIND RIVER RANGE
BIGHORN MOUNTAINS
GREAT SANDY DESERT
HARNEY BASIN
OREGON
OWYHEE MOUNTAINS
BRUNEAU DESERT
Twin Falls
Pocatello
CARIBOU RANGE


Apowersoft Screen Capture Pro - This is a trial version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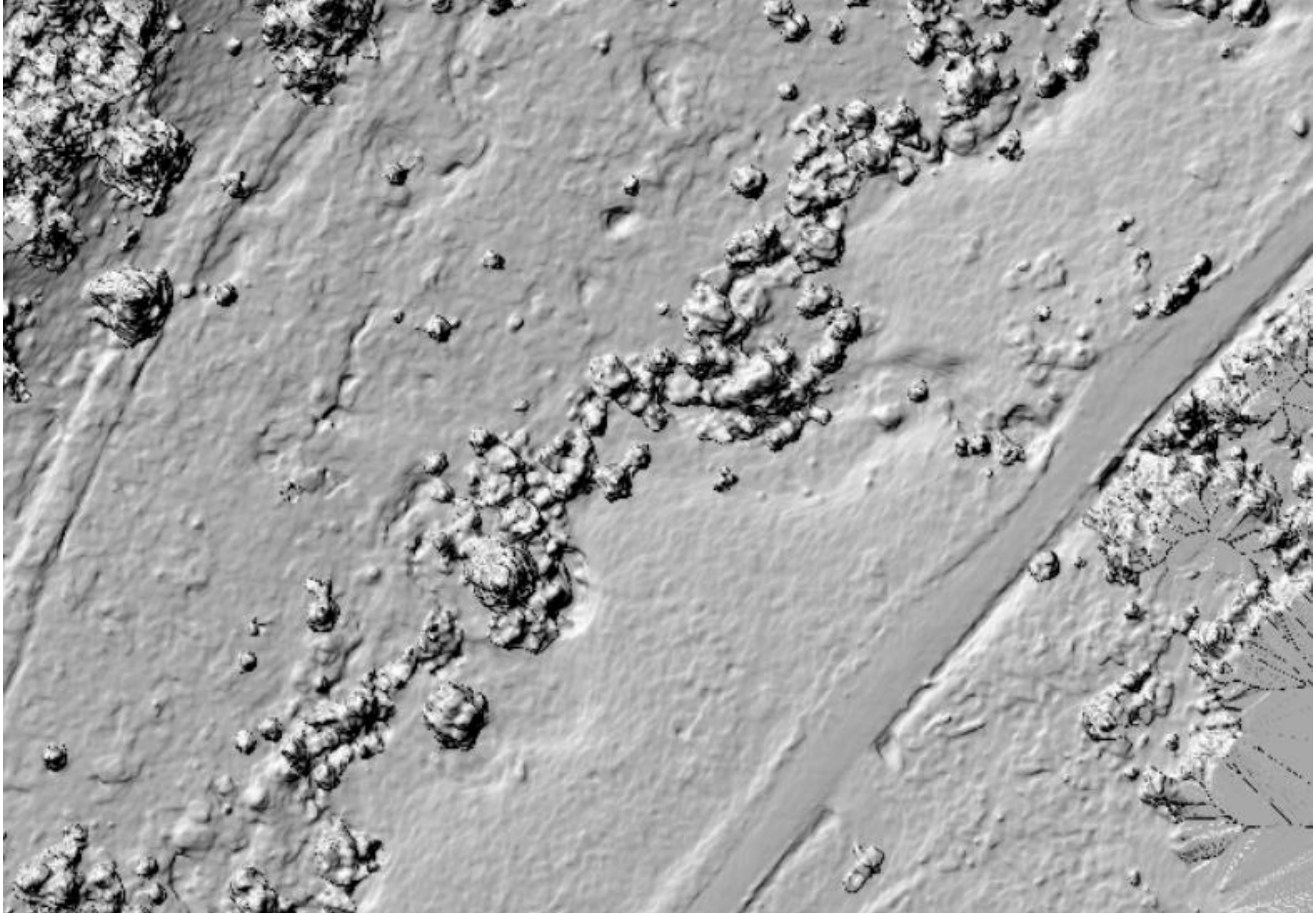

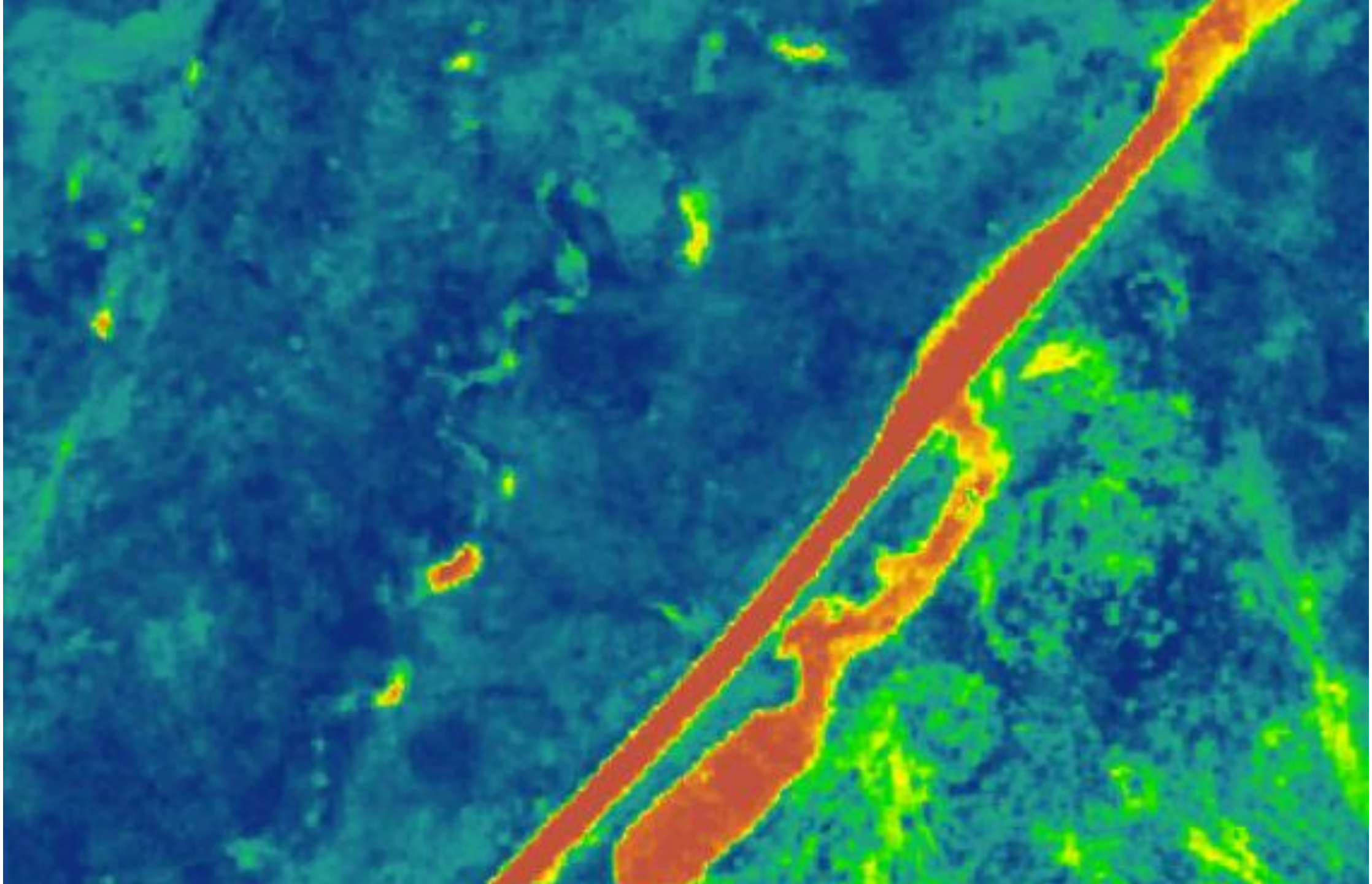

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