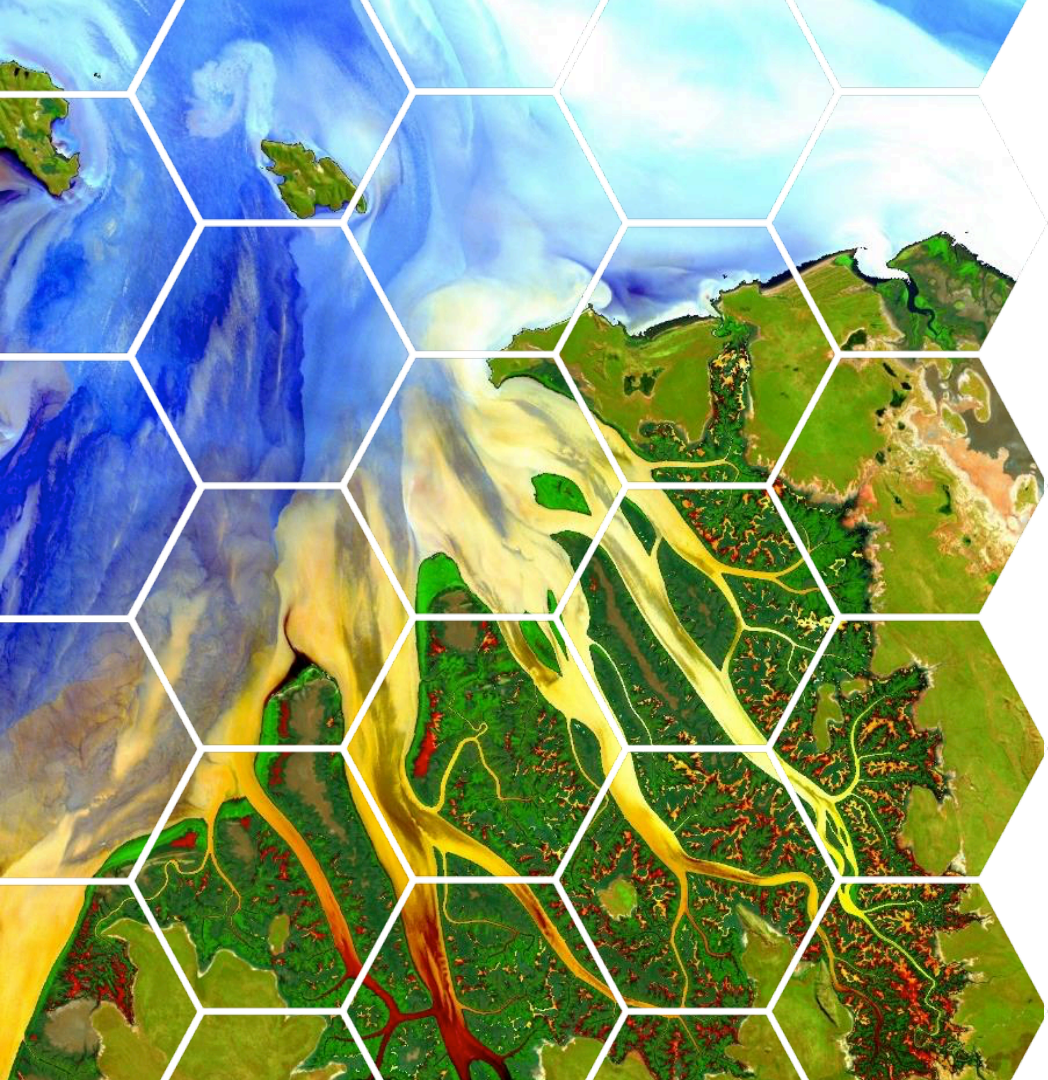


NASA DEVELOP:

A Program Introduction

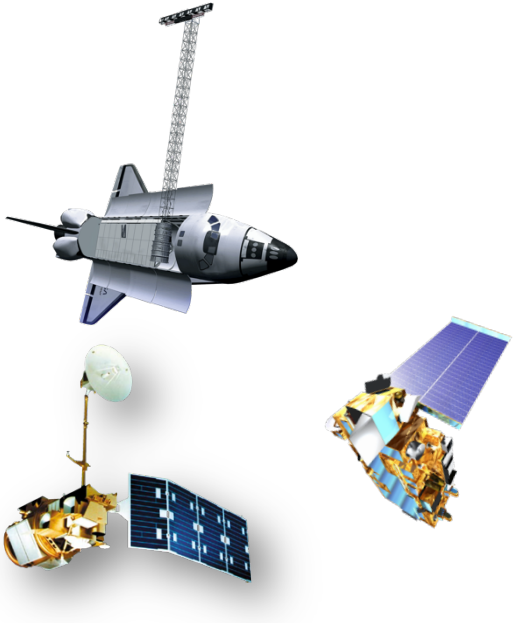
Jenna Williams
Center Lead

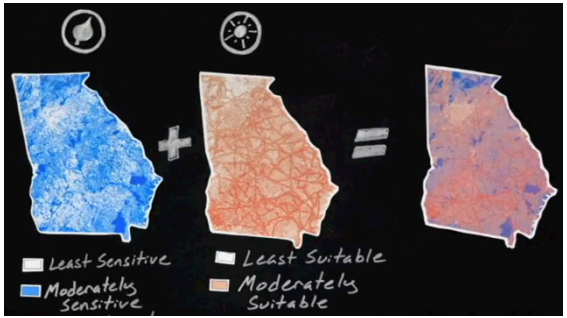
John Dilger
Geoinformatics Fellow

What is DEVELOP?

NASA Earth Observations
Feasibility Studies
Early Career Professionals
10-week Projects
Enhances Decision Making

NASA DEVELOP





NASA Applied Sciences

Discovering Innovative & Practical Applications of NASA Earth Science

Transportation & Infrastructure

Disasters

Urban Development

Water Resources

Ecological Forecasting

Agriculture & Food Security

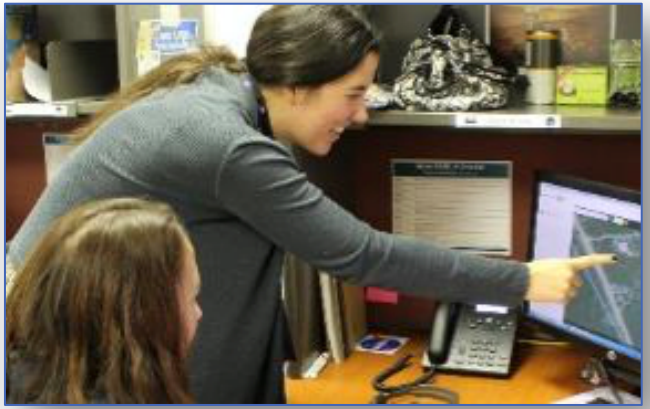
Energy

Health & Air Quality

Capacity Building

Applied Sciences' Capacity Building Program increases awareness within non-traditional audiences

ARSET



DEVELOP

SERVIR

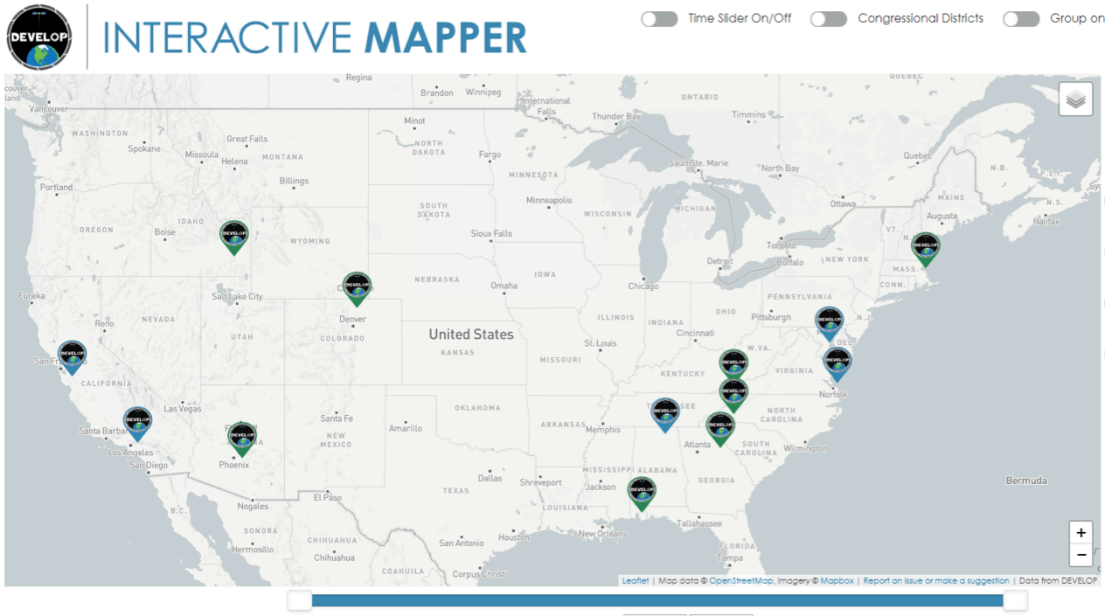
DEVELOP Node Locations

NASA Centers

1. *Ames Research Center – Moffett Field, CA*
2. *Goddard Space Flight Center – Greenbelt, MD*
3. *Jet Propulsion Laboratory – Pasadena, CA*
4. *Langley Research Center – Hampton, VA*
5. *Marshall Space Flight Center – Huntsville, AL*

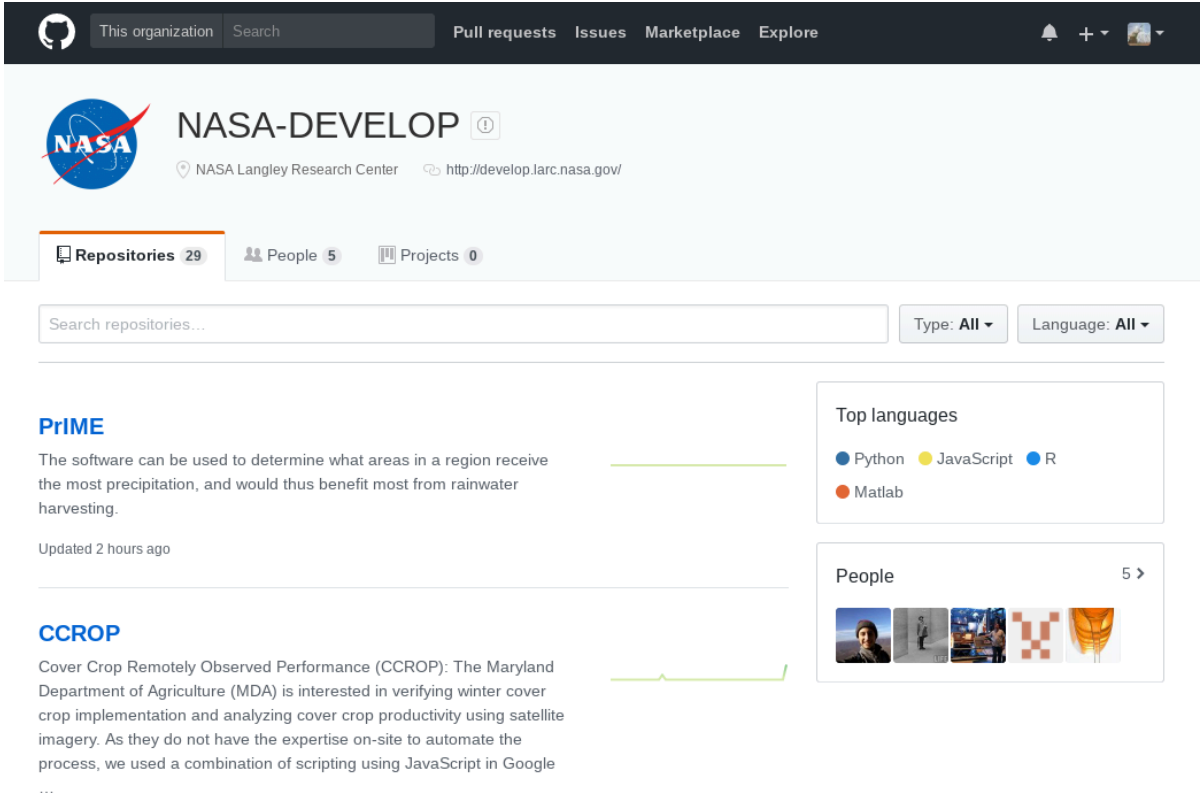
Regional Locations

6. *BLM at Idaho State University – Pocatello, ID*
7. *Maricopa County Department of Public Health and Arizona State University – Tempe, AZ*
8. *Mobile County Health Department – Mobile, AL*
9. *NOAA National Centers for Environmental Information – Asheville, NC*
10. *University of Georgia – Athens, GA*
11. *USGS at Colorado State University – Fort Collins, CO*
12. *Wise County Clerk of Court's Office – Wise, VA*
13. *Boston University – Boston, MA*



13 Locations
10 week projects
3 Terms/year

DEVELOP GitHub



End Goal

Process

Examples

Lassen Volcanic NP Disasters

AMES Research Center

Summer and Fall 2017

Project Parner

- Lassen Volcanic NP

Project Collaborator

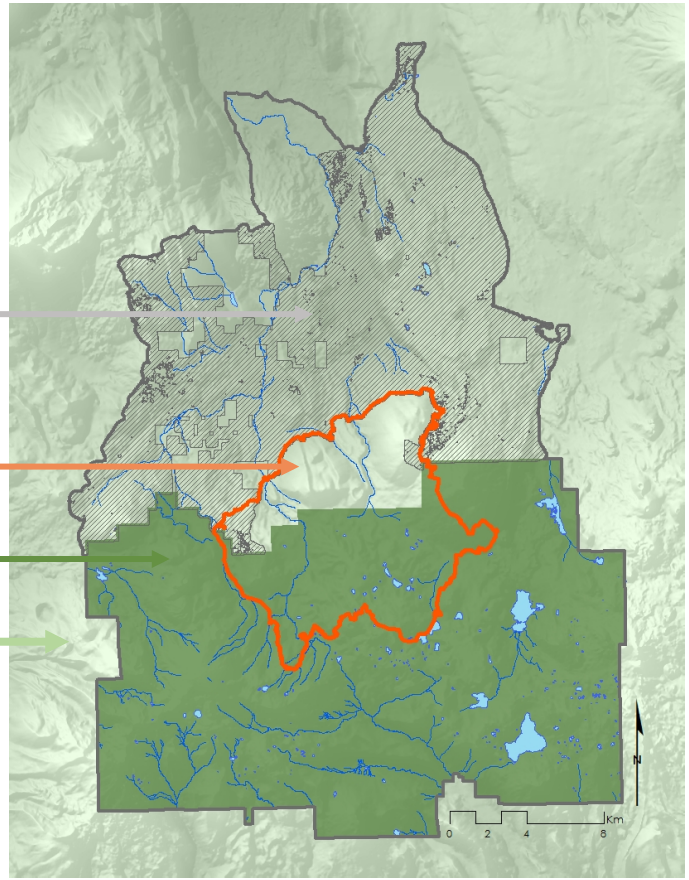
- U.S. Forest Service

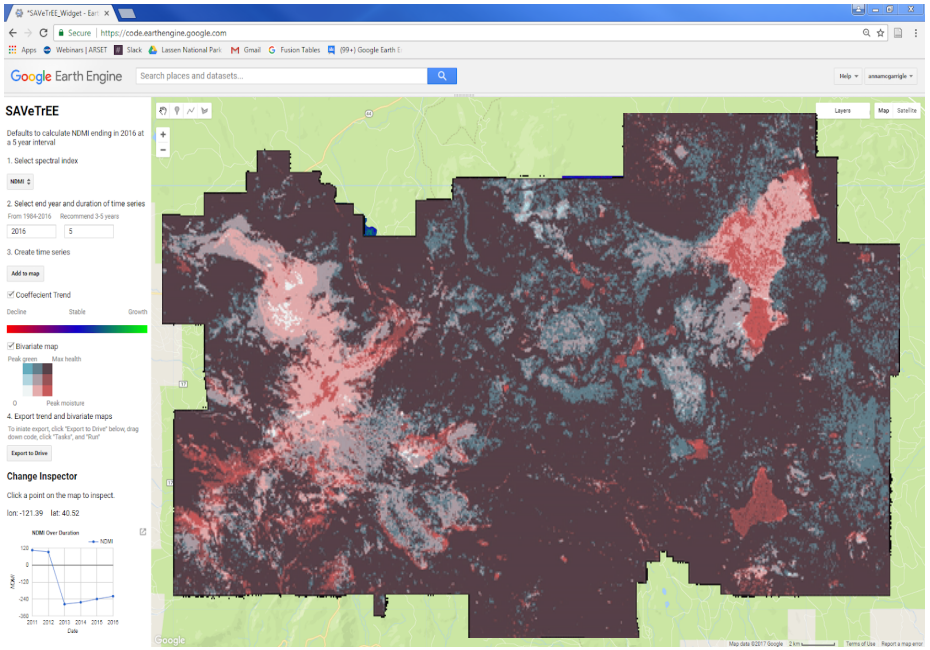
Community Concerns

- Fuel Loading
- Wilderness Stewardship
- Fire Risk Management

End Products

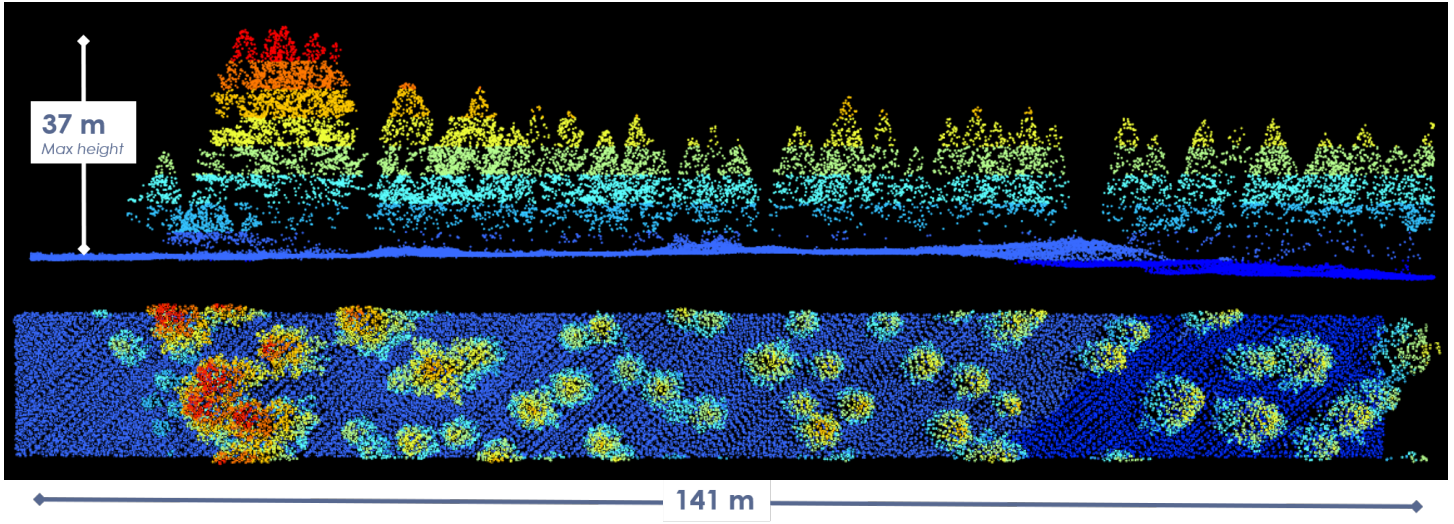
LiDAR Analysis



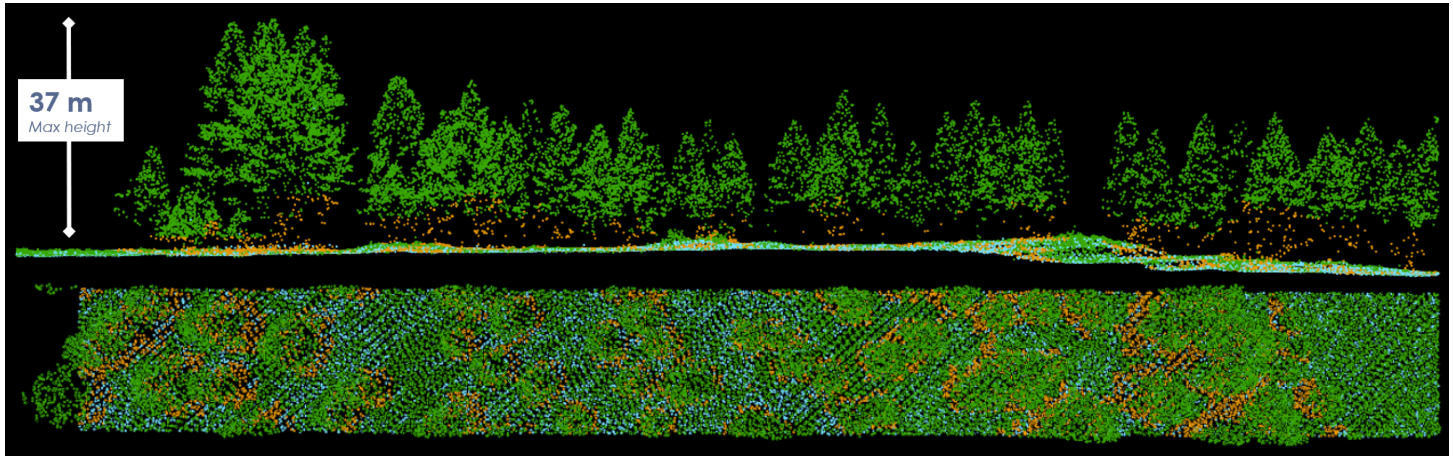


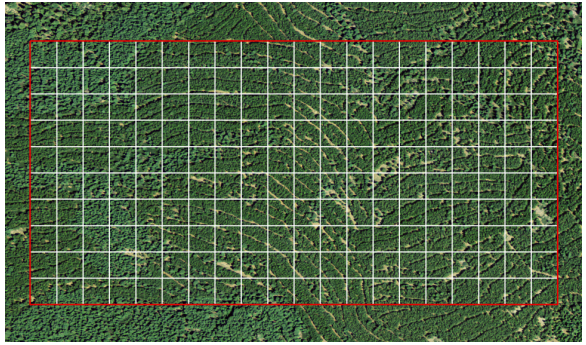
Simple Analysis of Vegetation Trends in Earth Engine (SAVETREE)

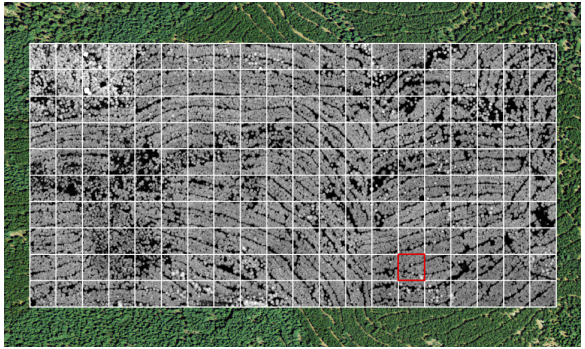
Canopy Height Model

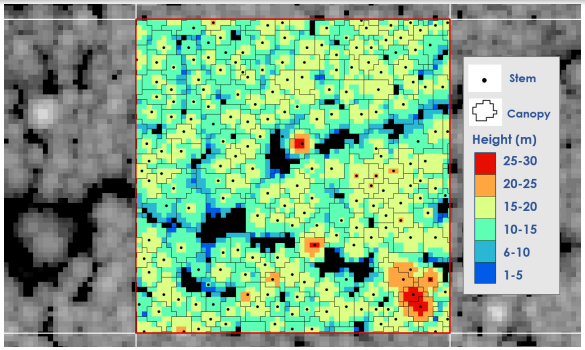


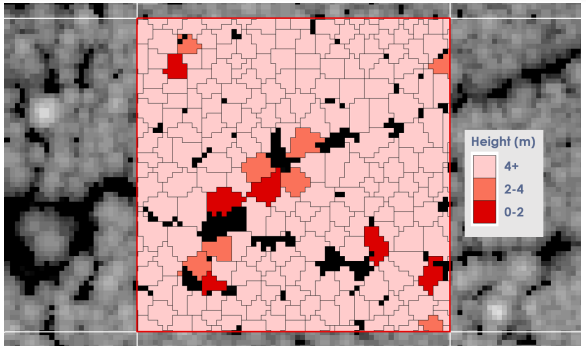
Extract Ladder Fuel

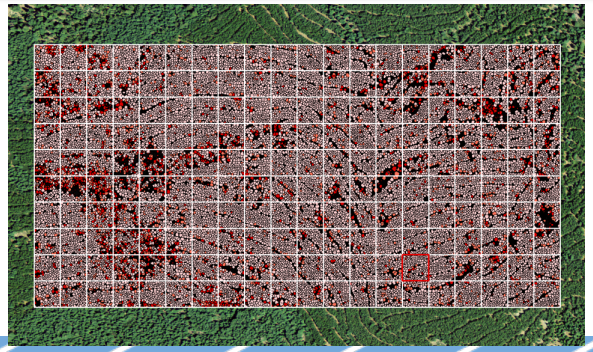


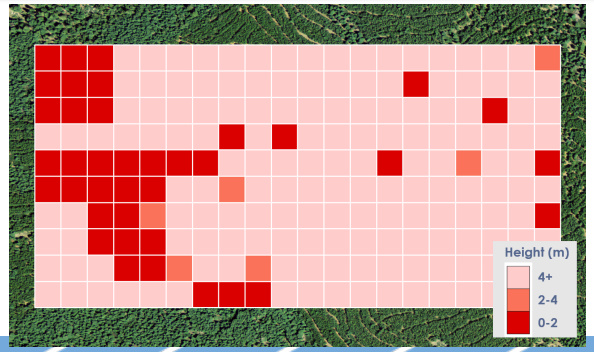


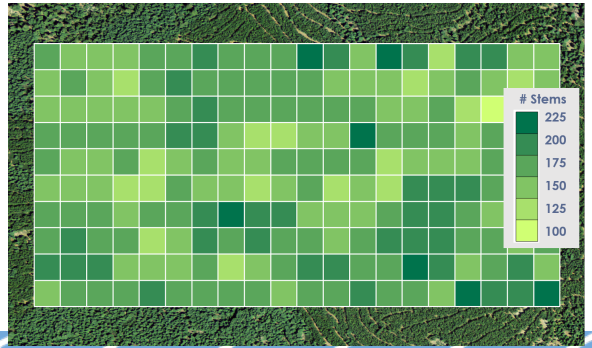








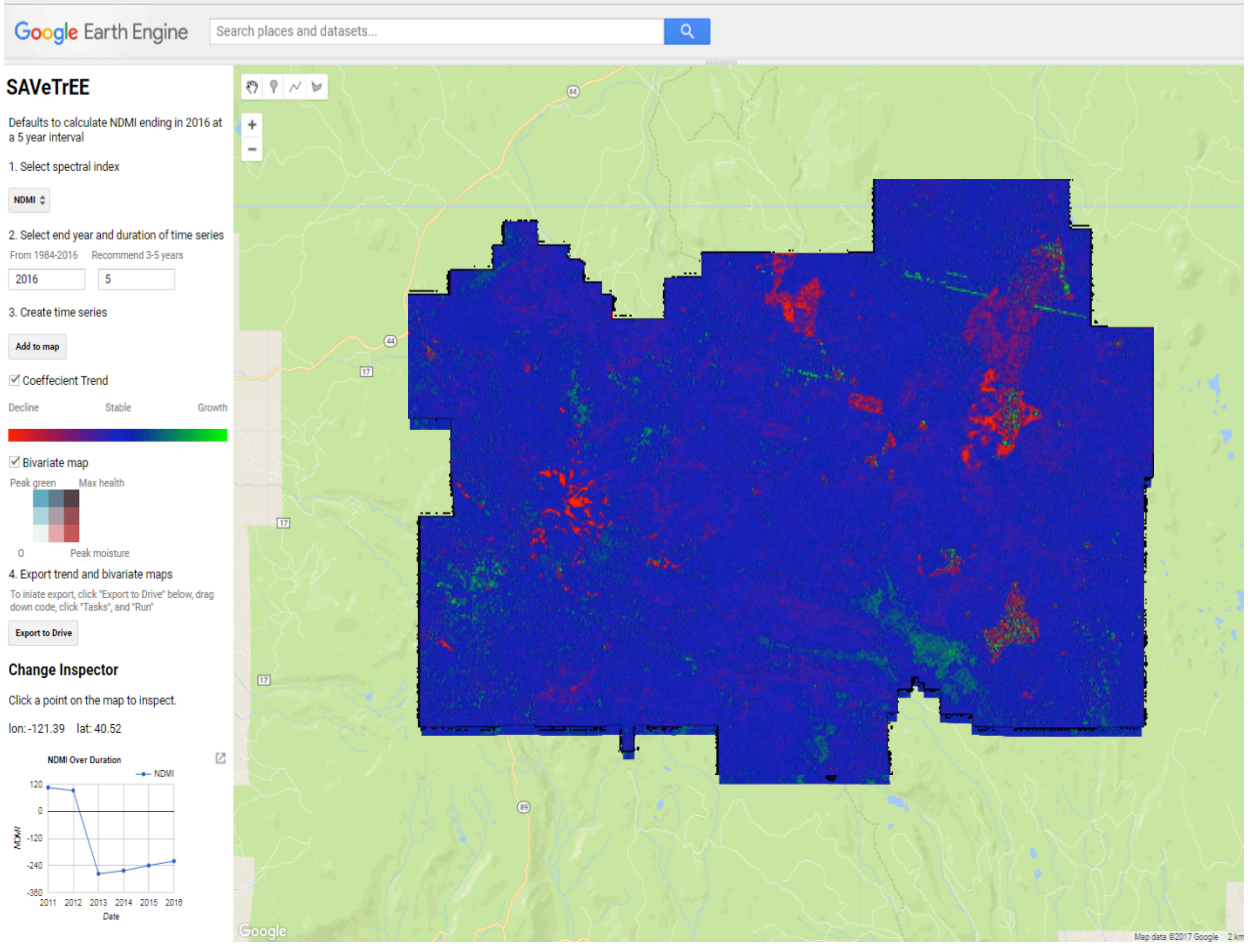




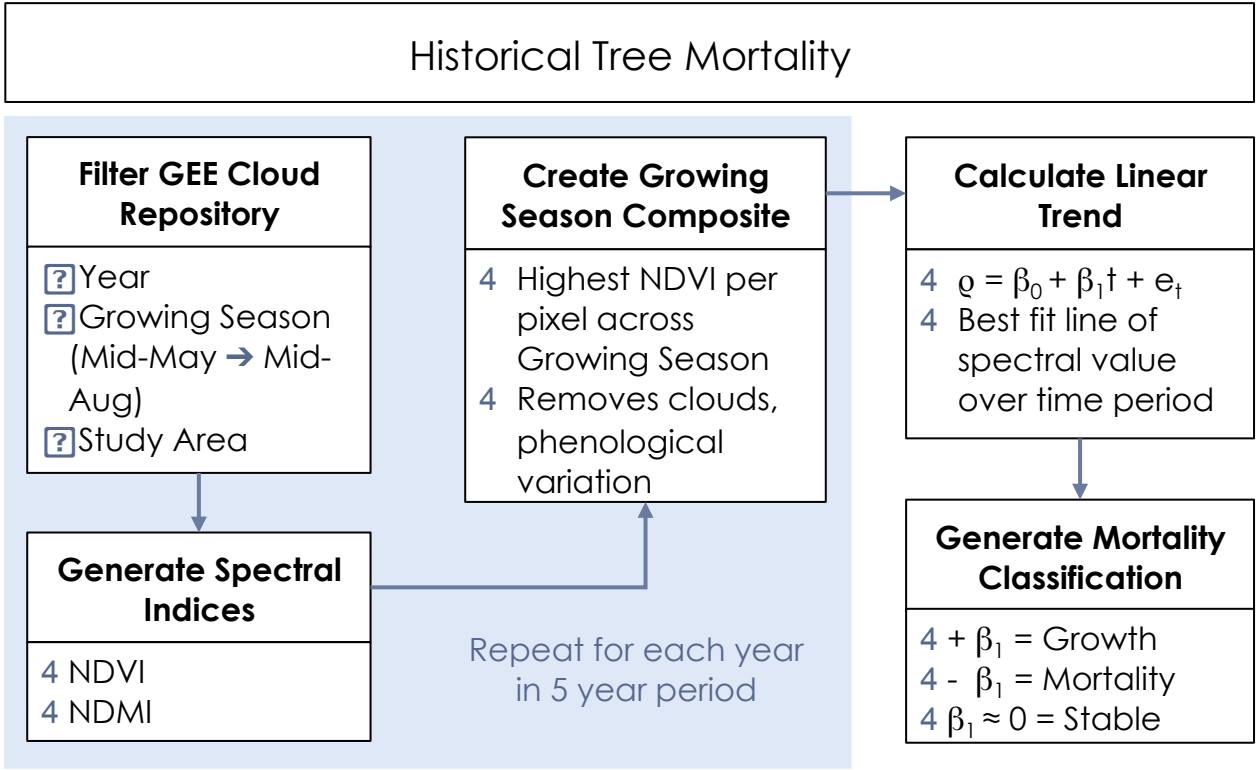
LiDAR Analysis

- Edge effects on surface fire spread at forest-grassland interface.
- High canopy understories increase risks of canopy fires due to continuous surface fuels created from ladders.
- Fuel treatments at these interfaces can reduce risks to entire forest patches

SAVETREE


Google Earth Engine
Search places and datasets...
SAVeTrEE
Defaults to calculate NDMI ending in 2016 at a 5 year interval
1. Select spectral index
NDMI
2. Select end year and duration of time series
From 1984-2016
Recommend 3-5 years
2016
5
3. Create time series
Add to map
Coeffecient Trend
Decline
Stable
Growth
Bivariate map
Peak green
Max health
0
Peak moisture
4. Export trend and bivariate maps
To iniate export, click "Export to Drive" below, drag down code, click "Tasks", and "Run"
Export to Drive
Change Inspector
Click a point on the map to inspect.
lon: -121.39
lat: 40.52
NDMI Over Duration
NDMI
120
0
-120
-240
-360
2011
2012
2013
2014
2015
2016
Date
Google
Map data ©2017 Google
2 km

Methodology



SAVETREE DEMO

Up And Coming

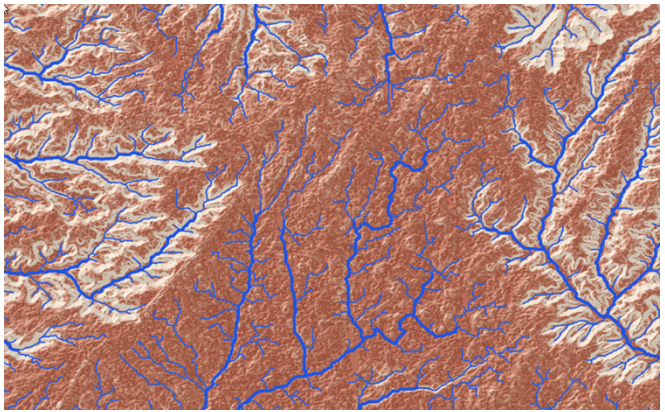
Goddard

An Interactive Model of Mosquito Presence and Distribution to Assist Vector-Borne Disease Management in Western Europe

9 New projects to GitHub

Idaho

Monitoring and Forecasting Precipitation Patterns and Erosion Potential to Enhance Archaeological Preservation and Decision Making



Questions?

develop.geoinformatics@gmail.com

https://develop.larc.nasa.gov/