



LANDFIRE Remap

Kurtis Nelson

U.S. Geological Survey

Earth Resources Observation and Science Center

Sioux Falls, South Dakota

What is LANDFIRE?

- A vegetation, fire, and fuel characteristic data creation program that is:
 - Designed to create and periodically update comprehensive vegetation, fire, and fuel characteristics data
 - A shared program between the wildland fire management programs of the U.S. Department of Agriculture Forest Service and U.S. Department of the Interior



- LANDFIRE is the first and only complete, nationally consistent product of its kind, covering all lands of the United States and associated insular areas.



LANDFIRE Mapping Effort

- Mapping began in 2004 using c2001 Landsat imagery to generate a suite of products and associated databases
- LANDFIRE product foundation is now 15-years-old
- Subtle vegetation and landscape changes may not be reflected in the current LANDFIRE product versions

Version	LF c2001 National	2001	2008	2010	2012	2014
Type	Base Map	Revision	Update	Update	Update	Update

Current versions

Potential future versions

Version	LF c2015 ReMap	2016	2018	2020	2022	2024
Type	Base Map	Update	Update	Update	Update	Update



LANDFIRE Data Products

- **Reference**
 - Public LFRDB
 - Public Events
 - FVSRDB
- **Disturbance**
 - Disturbance 1999-2014
 - Fuel Disturbance
 - Vegetation Disturbance
 - Vegetation Transition Magnitude
 - FVTDB
 - NFVTDB
 - FVSDDb
- **Vegetation**
 - Existing Vegetation Type
 - Existing Vegetation Height
 - Existing Vegetation Cover
 - Biophysical Settings
 - Environmental Site Potential
 - Vegetation Dynamics Models
- **Fuel**
 - Fire Behavior Fuel Models
 - Anderson 13
 - Scott/Burgan 40
 - CFFDRS
 - Forest Canopy Cover
 - Forest Canopy Height
 - Forest Canopy Base Height
 - Forest Canopy Bulk Density
 - Fuel Characteristic Classification System
 - Fuel Loading Models
 - Landscape Files
 - Fuel Rulesets DB
- **Fire Regimes**
 - Fire Regime Groups
 - Mean Fire Return Interval
 - Percent Low-severity Fire
 - Percent Mixed-severity Fire
 - Percent Replacement-severity Fire
 - Vegetation Condition Class
 - Vegetation Departure
 - Succession Class
- **Topographic**
 - Elevation
 - Slope
 - Aspect

LANDFIRE Remap

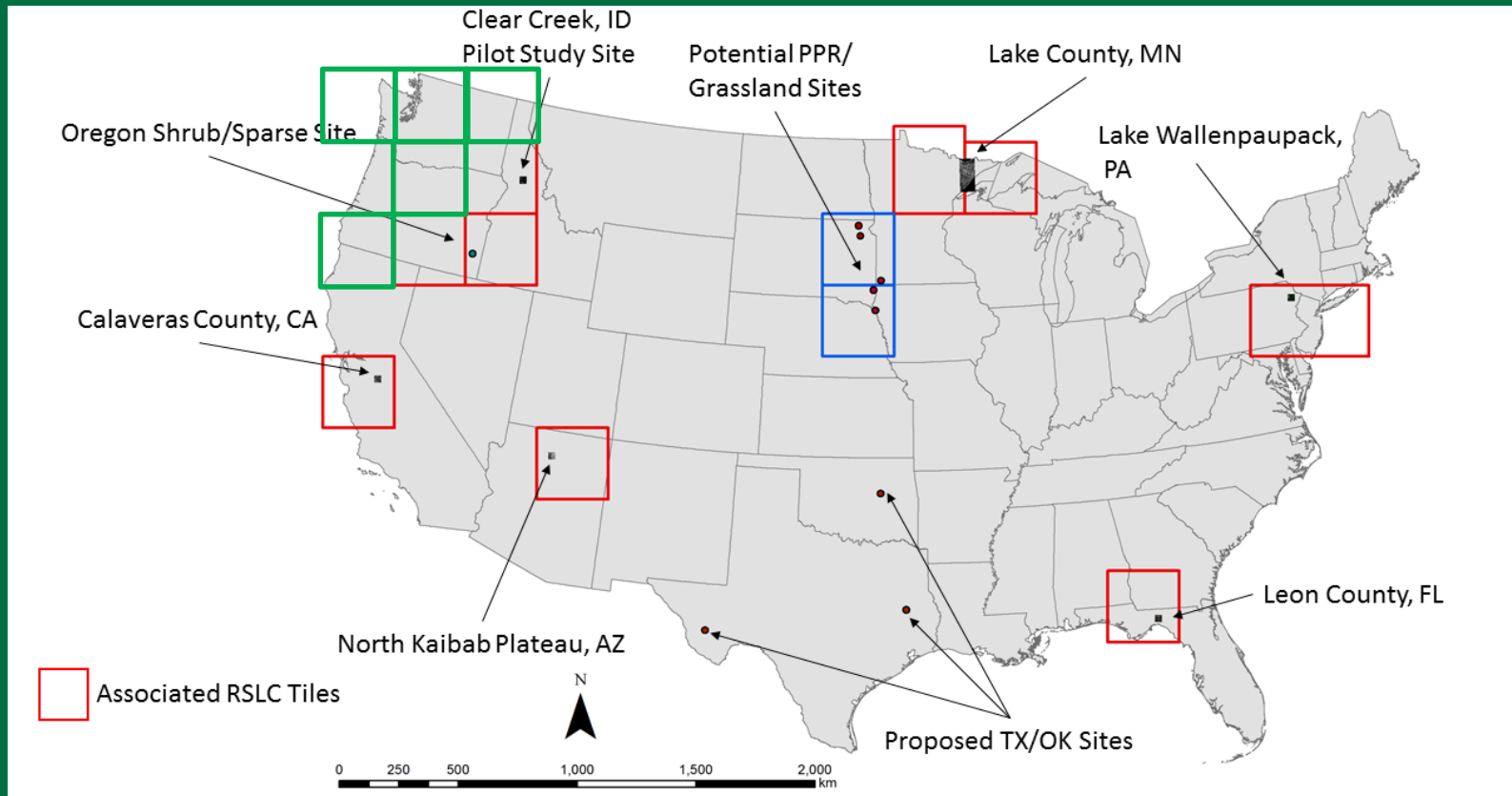
Remap will produce new base maps for the LANDFIRE product suite

The Remap effort will:

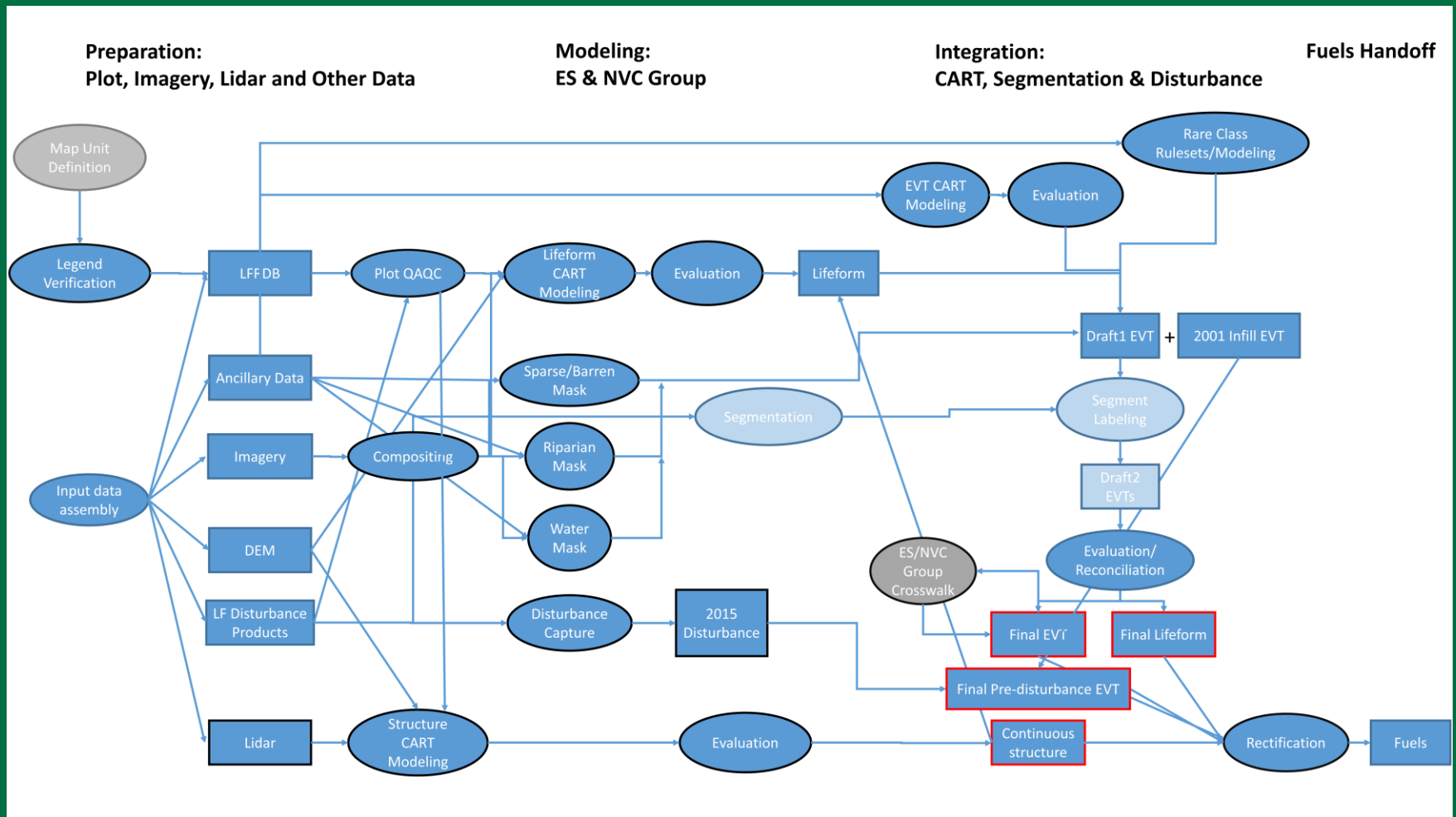
- Evaluate past production processes and methods
- Assimilate prior feedback and review comments
- Explore different mapping methods to maximize the use of available data and past mapping efforts
- Explore new and expanded data sources (imagery, lidar, field data)
- Offer a characteristic representation of contemporary conditions for areas that are undergoing change



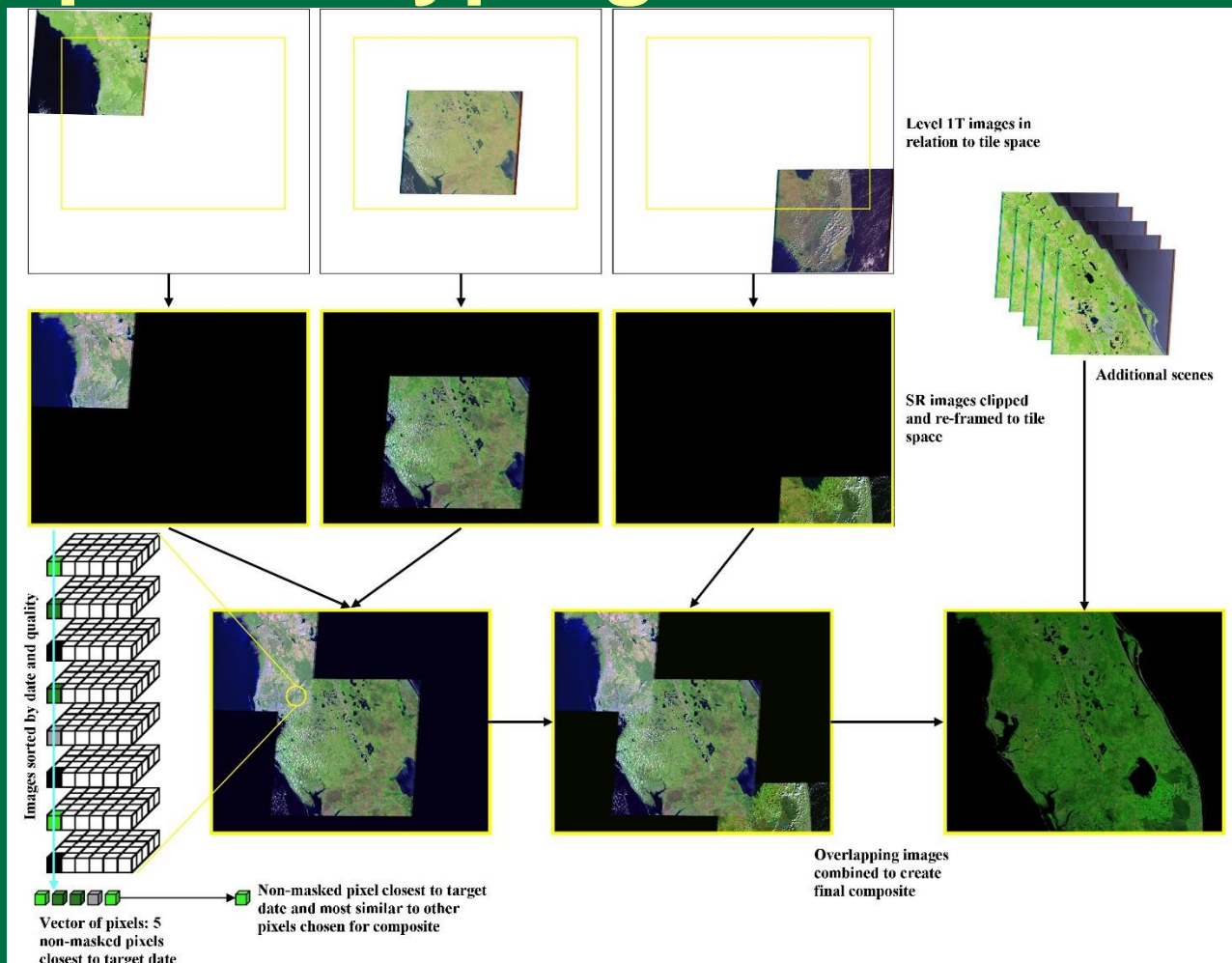
Remap Prototyping



Remap Prototyping



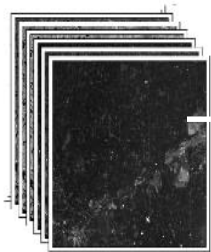
Remap Prototyping



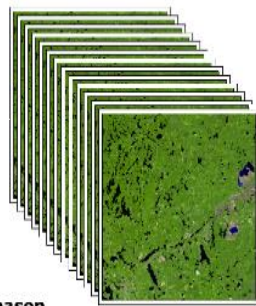
Remap Prototyping

ETM+ & OLI

Blue
Green
Red
NIR
SWIR-1
SWIR-2
CFMask

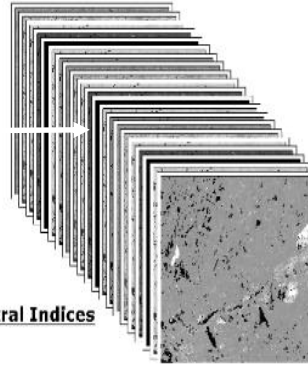


Growing Season Landsat Composites



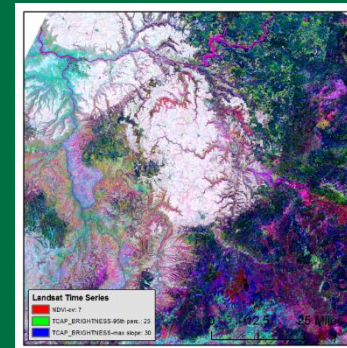
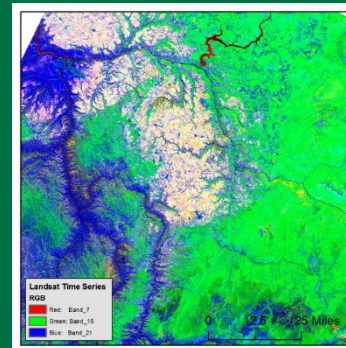
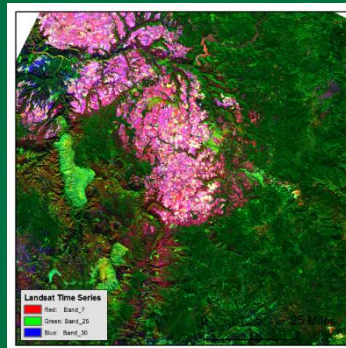
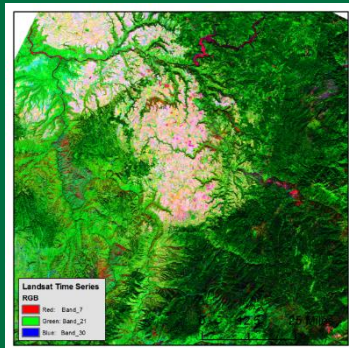
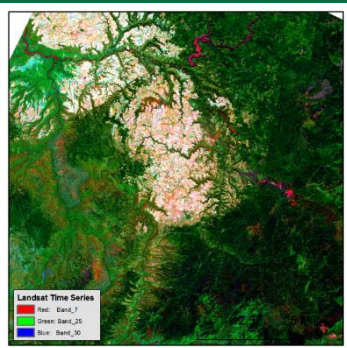
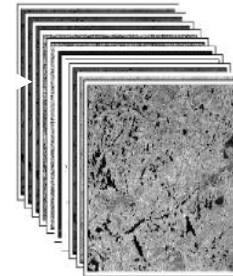
Spectral Indices

EVI
NDVI
Tassled Cap Brightness

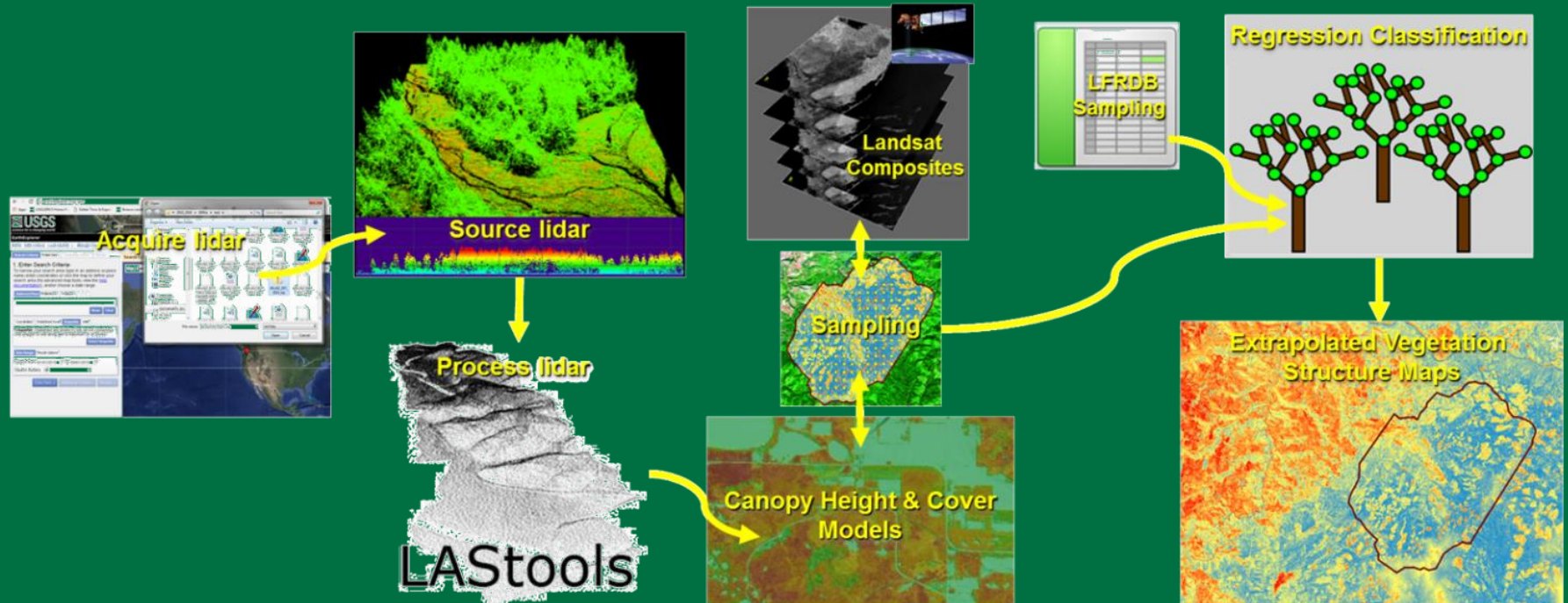


Temporal Statistics

5th percentile
25th percentile
50th percentile
75th percentile
95th percentile
Coefficient of variation
Mean
Maximum slope
Minimum slope



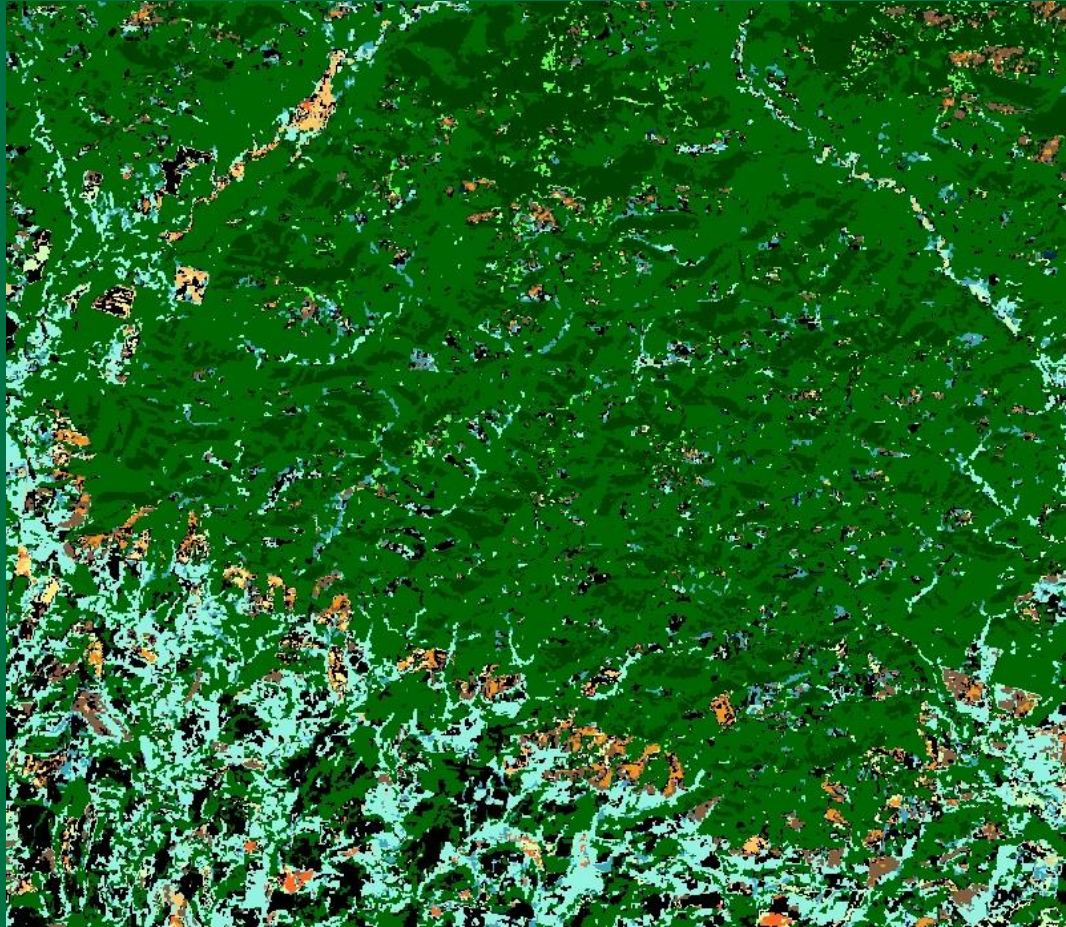
Remap Prototyping



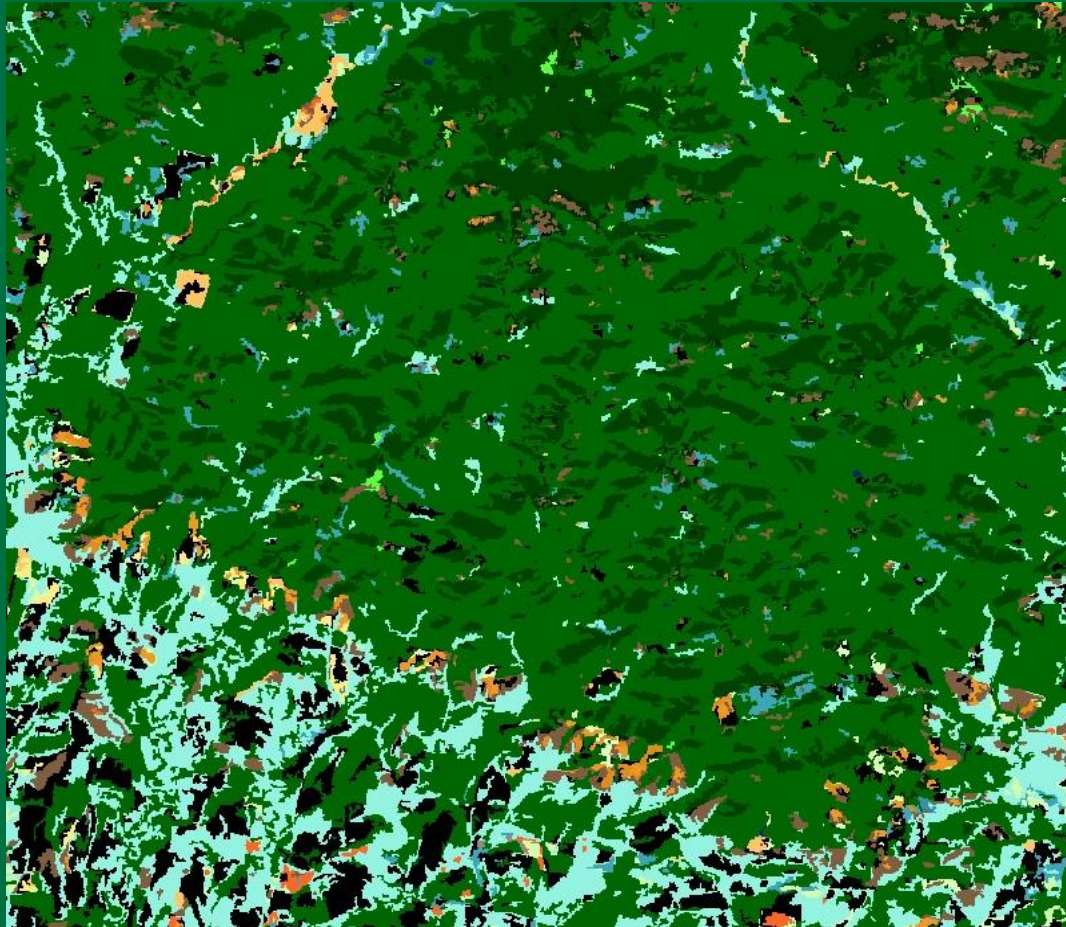
Remap Prototyping



Remap Prototyping



Remap Prototyping



Remap Timing

- Reference data processing
 - Ongoing
- Vegetation prototyping / documentation
 - Complete around May for CONUS
 - Ramp up AK efforts summer 2017
- Fuels prototyping
 - Ongoing, CONUS complete by summer 2017
- Data production
 - CONUS starting summer 2017, first products complete by fall 2017

Alaska Prototyping

- Plot data solicitation and processing
 - Ongoing
- Vegetation legends / keys
 - Being developed through NatureServe & partners
- Vegetation mapping methods
 - Select prototype sites, explore available datasets, test mapping methods, evaluate products
- Fuels mapping methods
 - Implement updated guidebook, follow-on with vegetation prototypes

Alaska Prototyping

FIA

Sentinel



NRI

ICESat-2

Lidar

G-LiHT

NISAR

3DEP

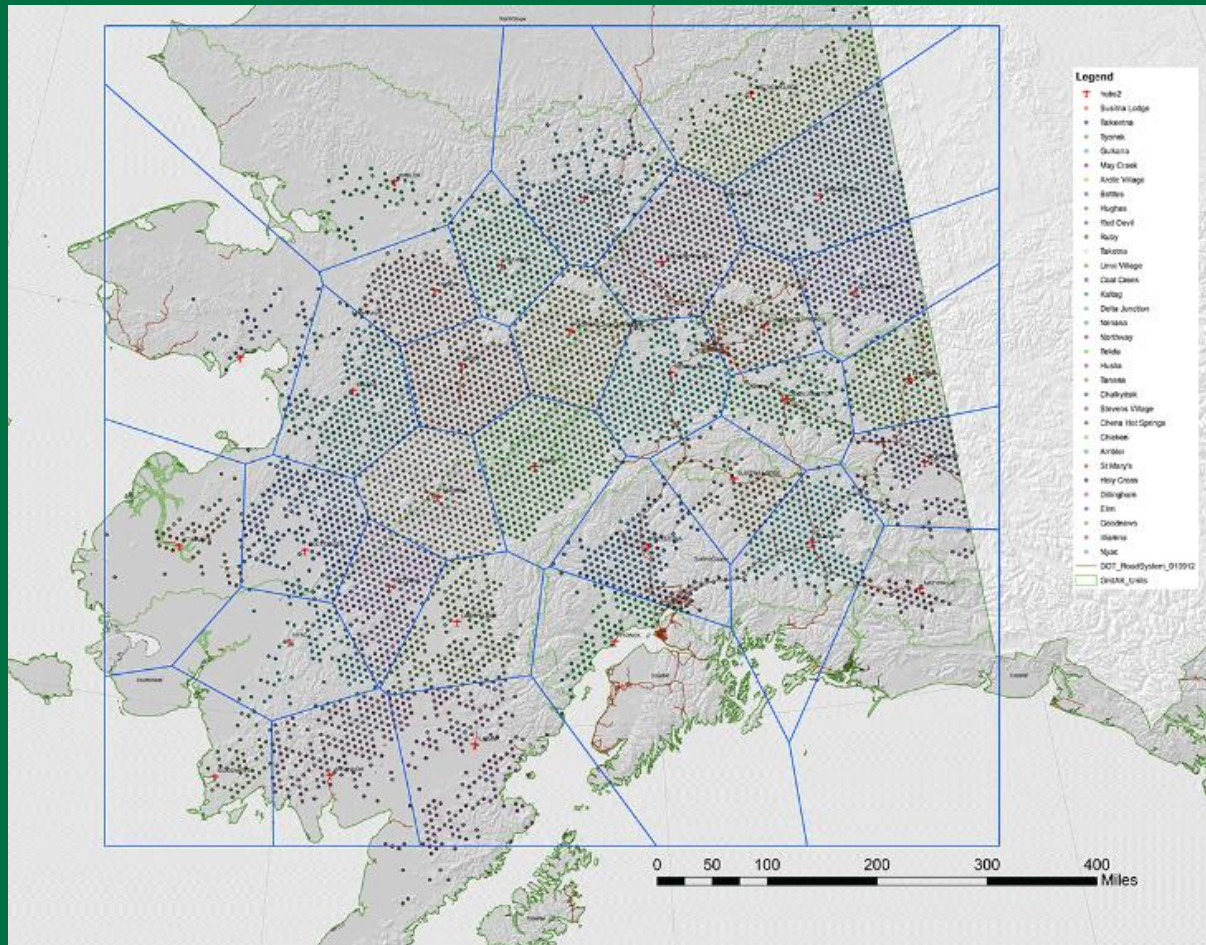
LCMAP

Landsat 8

GEDI

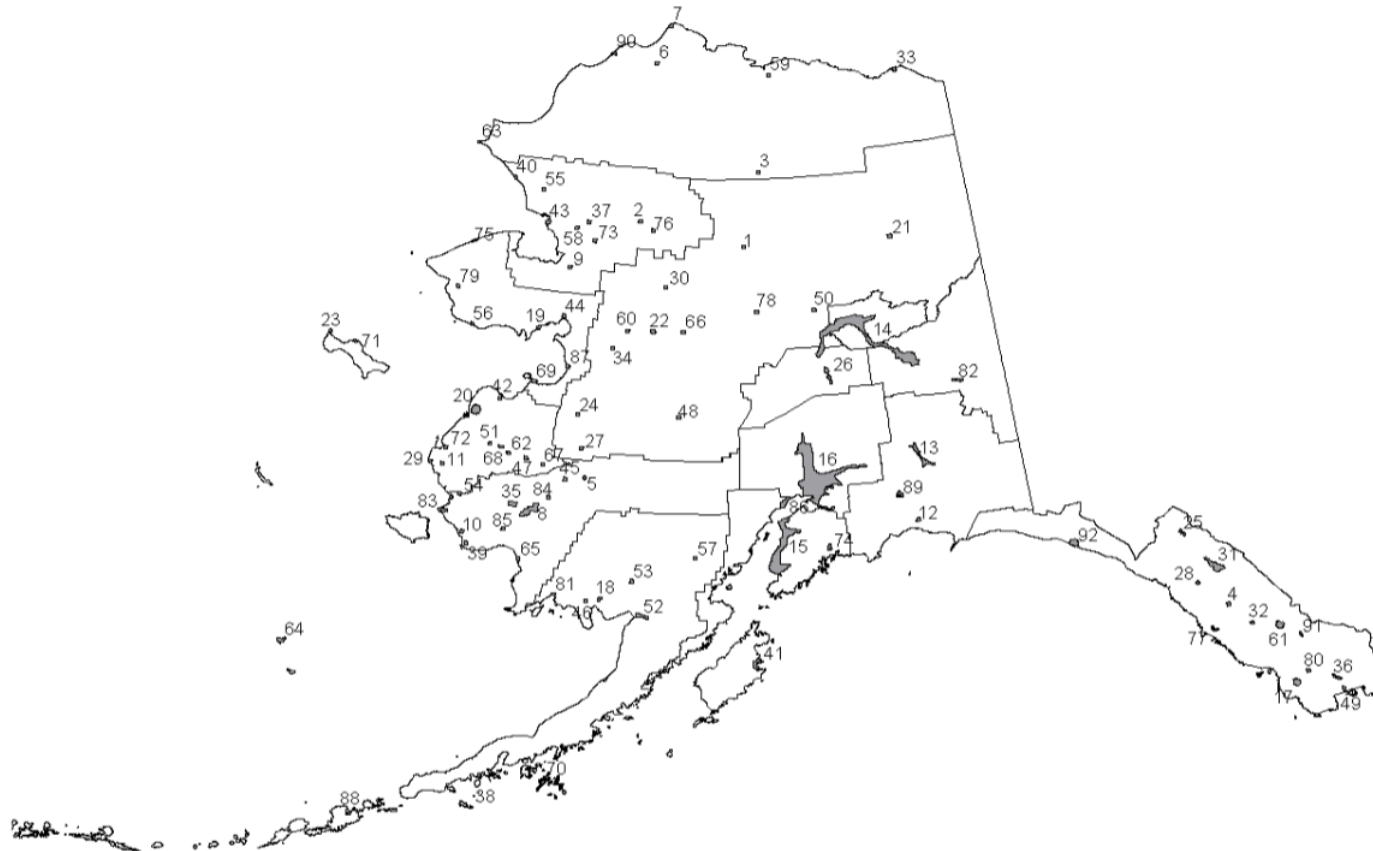


Alaska Prototyping - FIA

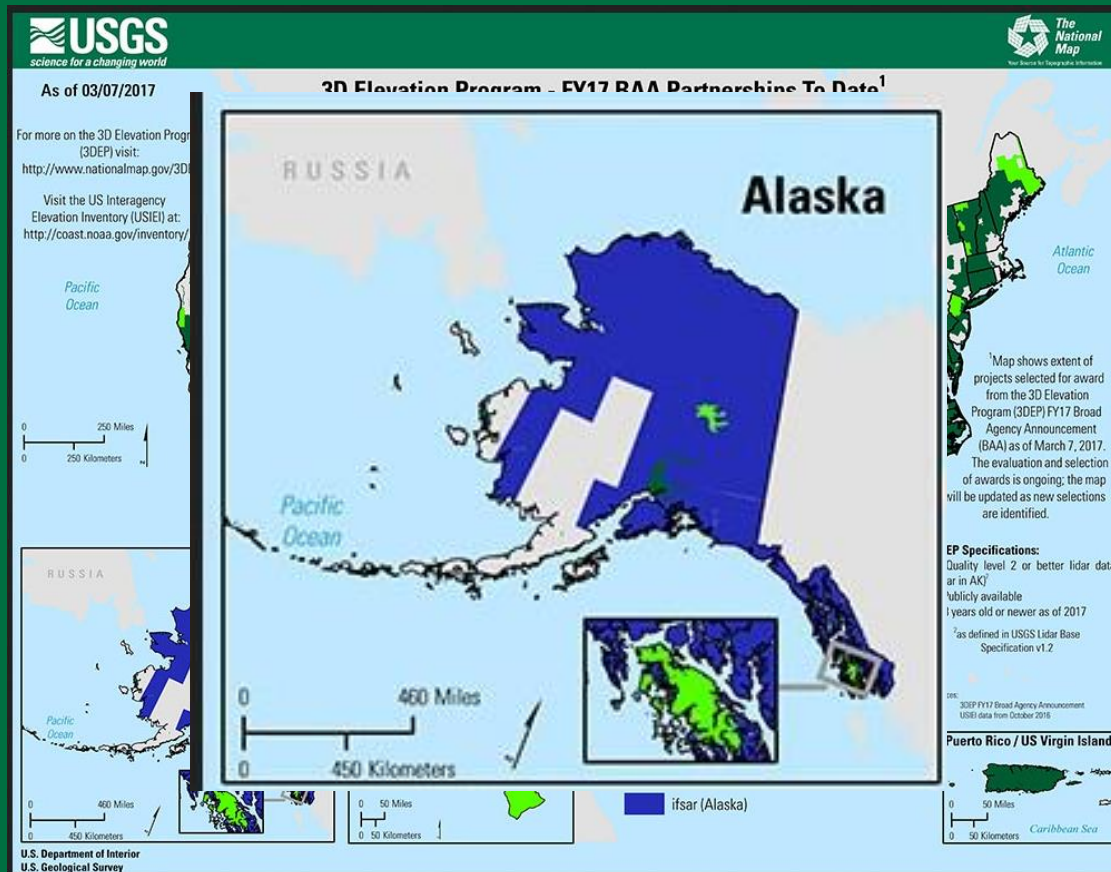


Alaska Prototyping - NRI

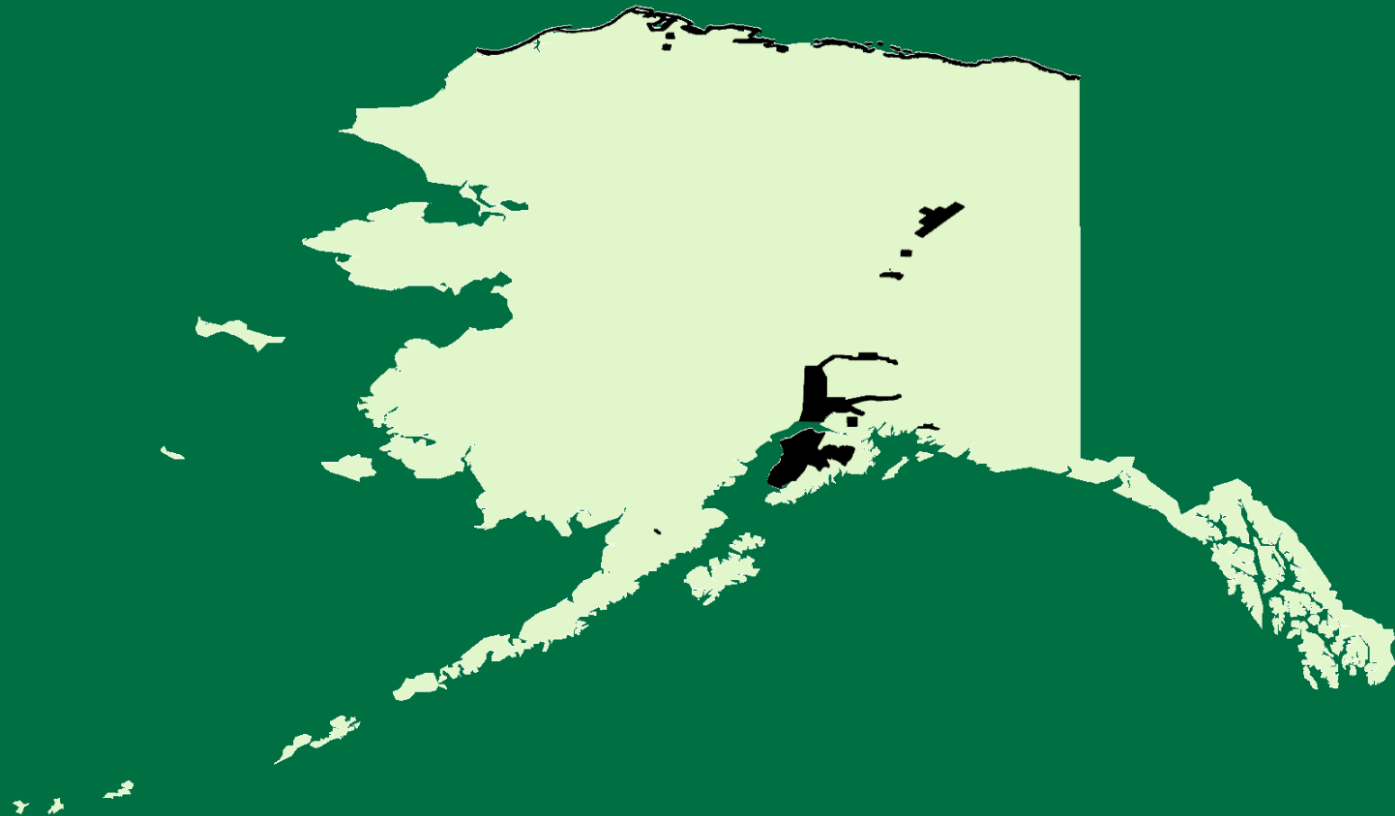
Figure 2 – Alaska NRI High-Intensity Sampling Areas – Identified for Sampling Design



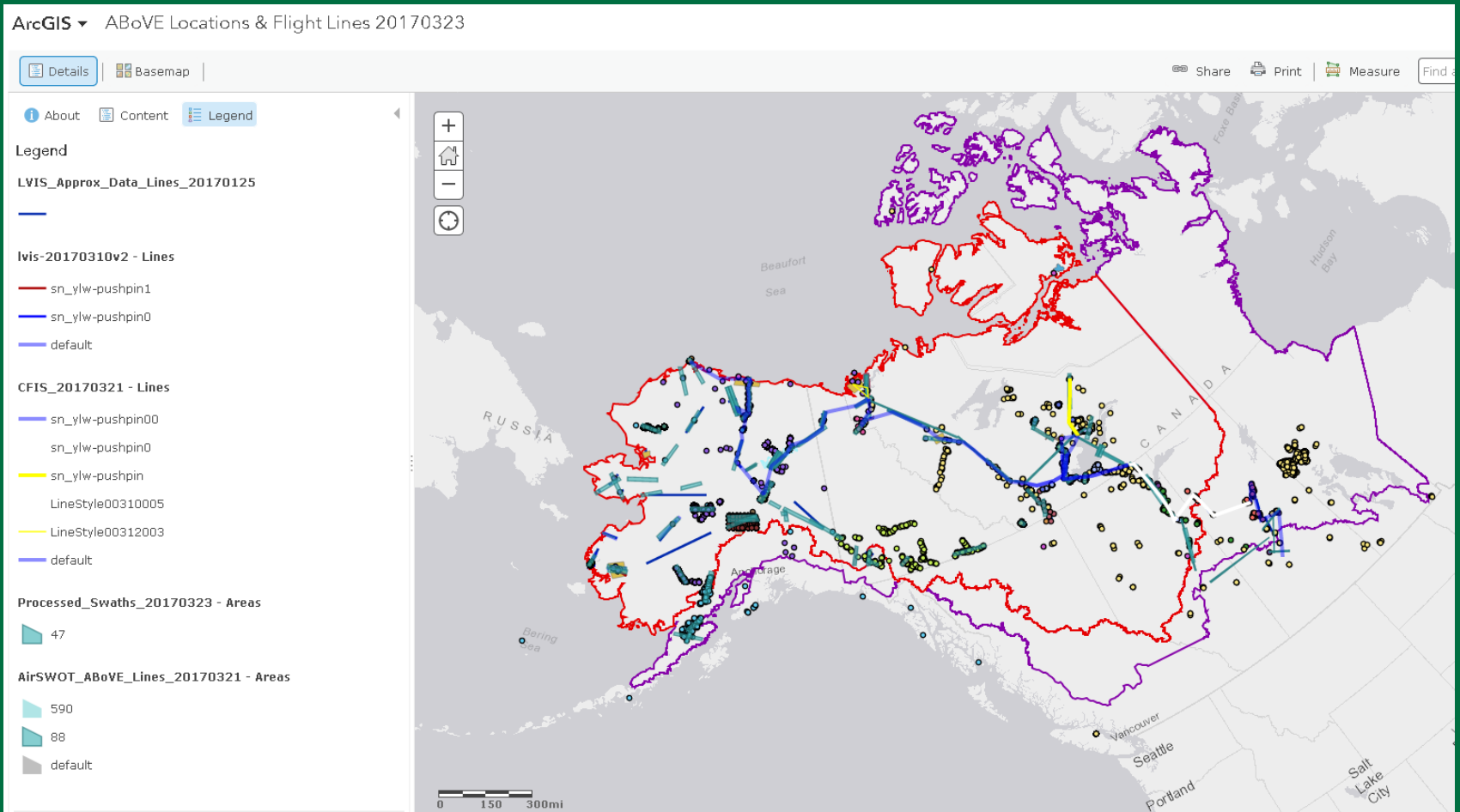
Alaska Prototyping – 3DEP



Alaska Prototyping - lidar



Alaska Prototyping - ABoVE



More Information

LANDFIRE www.landfire.gov

Home About Data Products Contribute Data Methods & Applications Improvements Search Help

Alerts Notifications Get Data

**D
A
T
A**

Reference Disturbance Vegetation Fuel Fire Regime Topographic

LF 2014 Available for:

- CBD
- CBH
- CC
- CH
- EVC
- EVH
- EVT
- BPS
- VCC
- FDIST
- FBFM13
- FBFM40
- VDIST
- VTM
- DIST2013
- DIST2014
- ESP
- VDEP
- SCLASS

LF 2014 CONUS is now released...

LAND

- land cover change
- endangered species monitoring
- climate-carbon-ecological modeling/research
- wildlife / habitat activities

FIRE

- fuel treatments
- fire suppression
- fire management planning
- active fire management

Intersection:

- regional / national use
- budget allocation
- natural resource management
- strategic decision support
- updated regularly

LANDFIRE ... more than fire

SERVICES	LANDFIRE NEWS	GET DATA
<ul style="list-style-type: none"> » Landscape (.LCP) File » Web Service Calls (WCS) » Modifying Geospatial Data Guidebook » LF Videos & Tutorials » Frequently Asked Questions 	<ul style="list-style-type: none"> » LF 2014 CONUS released new » LF Data Product Review » LF Engagement Opportunities » LF Bulletins/Postcards Subscribe 	<p>Access a dynamic map to view and download data</p> <p>Download bulk mosaic data for US, AK, HI</p>
<p>Connect with LANDFIRE</p> <p>YouTube Twitter Contact Us/ Need Help</p>		<p>TOOLS</p> <ul style="list-style-type: none"> » Data Distribution Site » LF Data Access Tool (LFDAT) Windows 10 » LF Total Fuel Change Tool (LFTFCT)

Forest Service: Accessibility / Privacy Policy / Important Notices / FOIA
DOI: Accessibility / Privacy Policy / Important Notices / FOIA

Helpdesk@ landfire.gov

Kurtis Nelson
knelson@usgs.gov
(605) 594-2805

