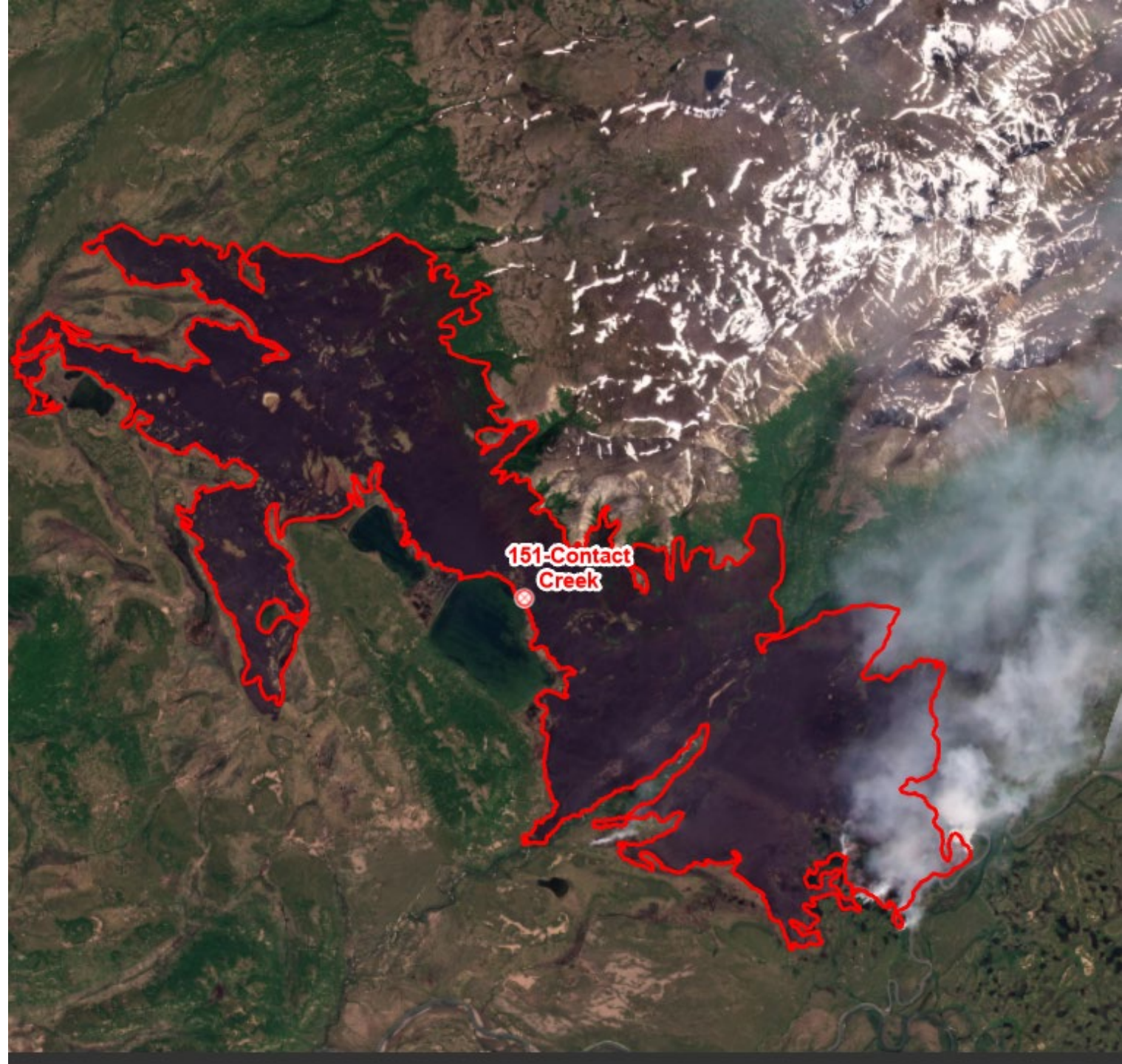


# Planet Imagery Use Cases for Forestry and Fire Protection

- Daniel LaBarre
- GIS Analyst
- Alaska Department of Natural Resources Division of Forestry & Fire Protection



# What is Planet Imagery?

- Daily streaming of 3m imagery
- Weekly and monthly base maps
- Tasking of .5m Imagery
- Available via an online web app named Planet Explorer & an ArcPro Plugin

# Use Cases to Date

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Fire Perimeters

Fire Origin Location

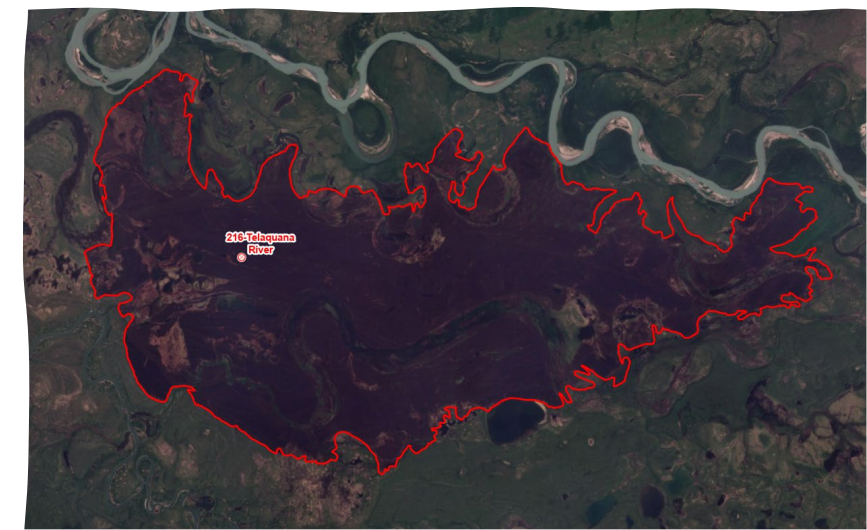
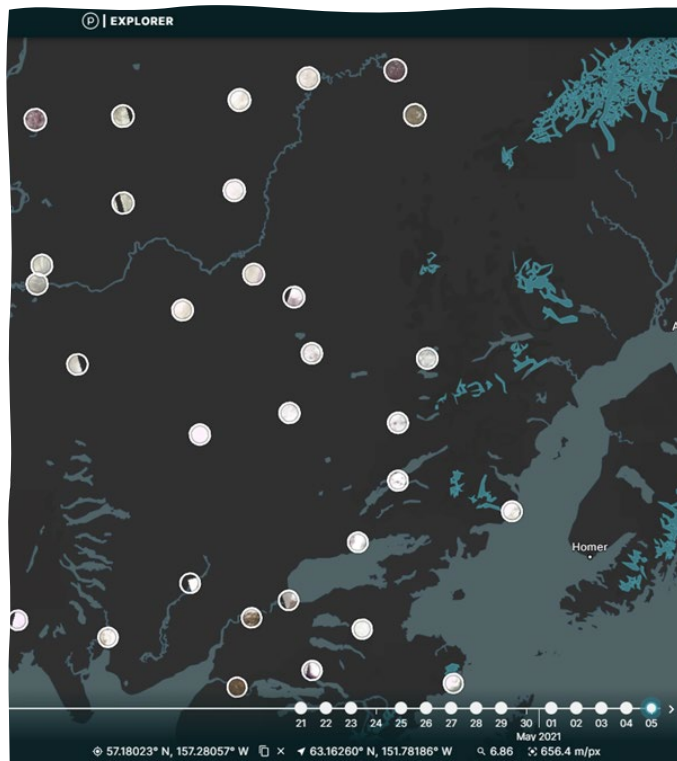
Monitoring Suppression Activities

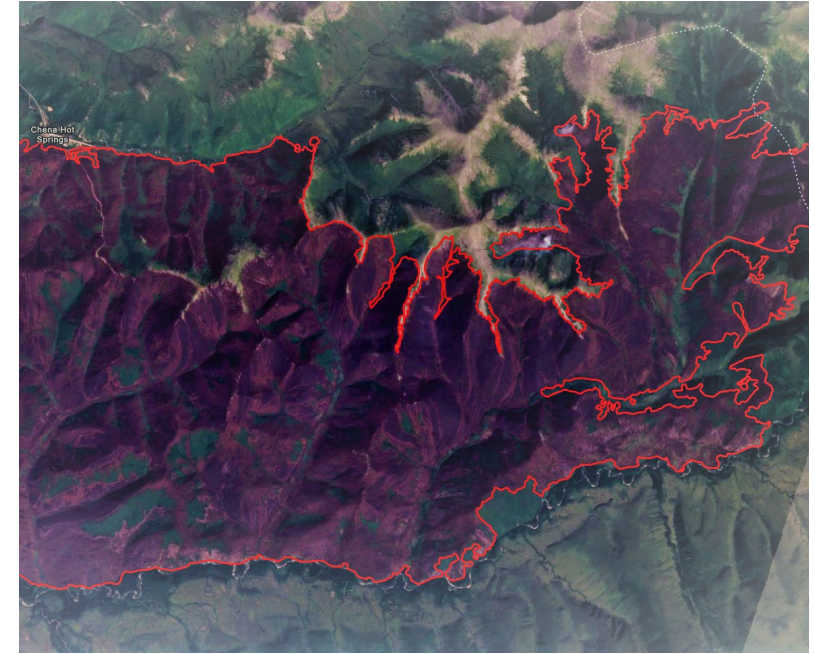
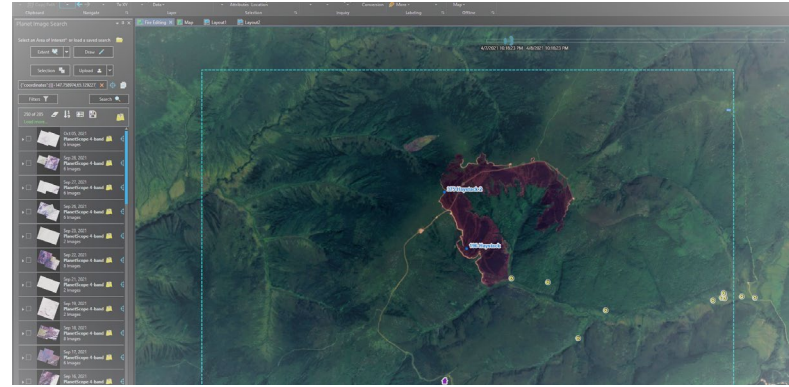
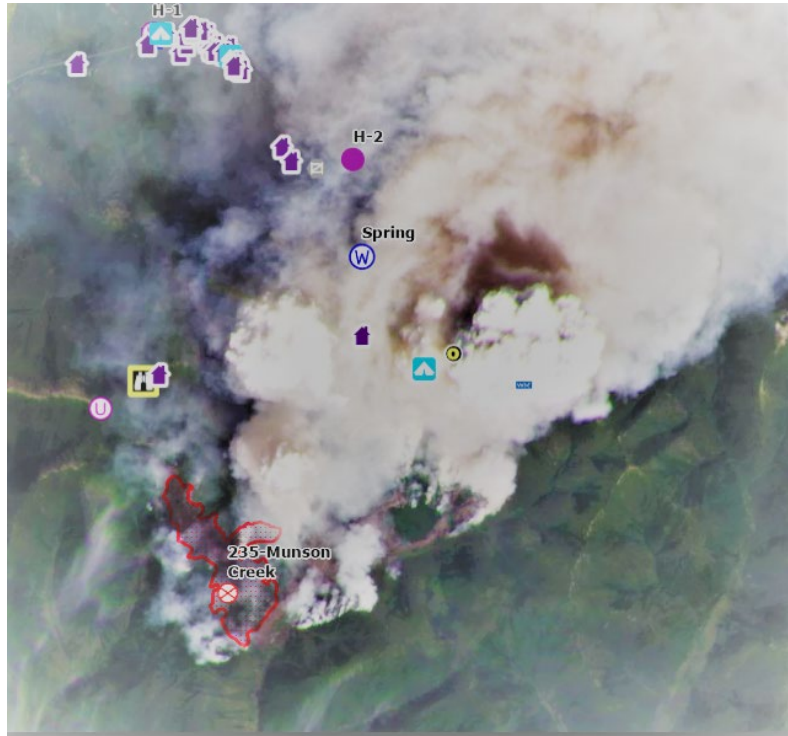
Snow Free Day for Weather and Fire Fuels Modeling

Timber Sale Inspections

Road Layout

Forest Practices Act Enforcement

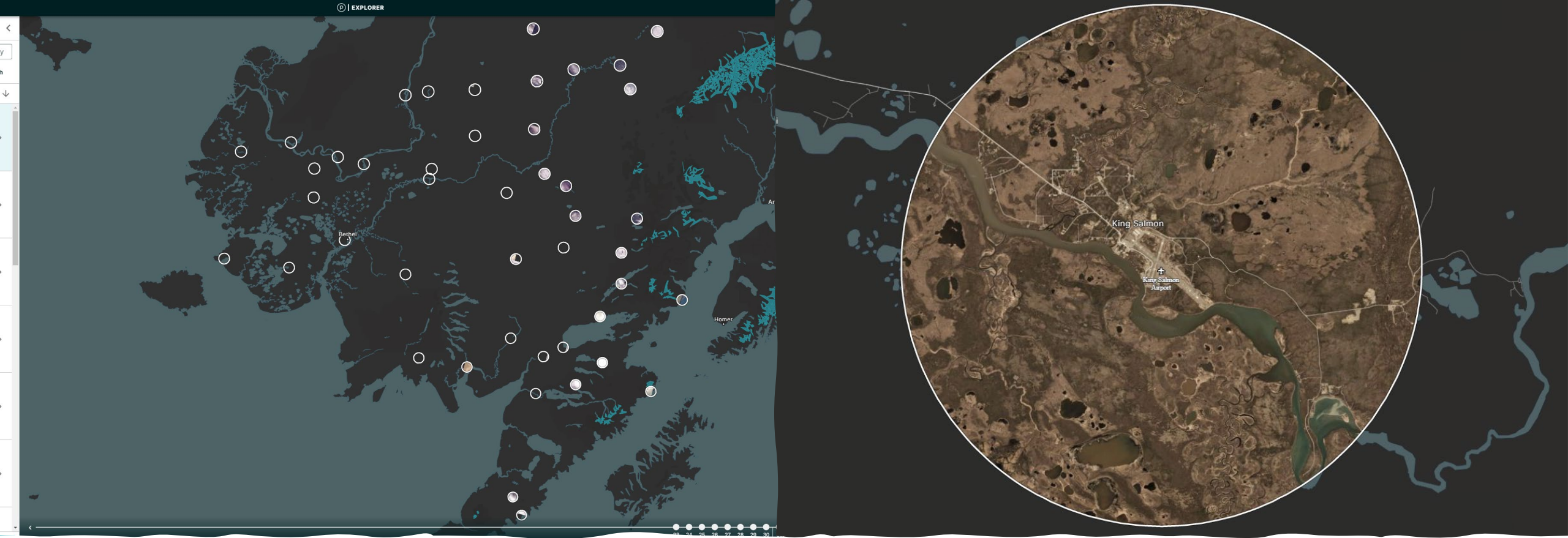




# Daily Fire Perimeter Updates

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This was where we realized the greatest benefit for the Fire Protection Branch



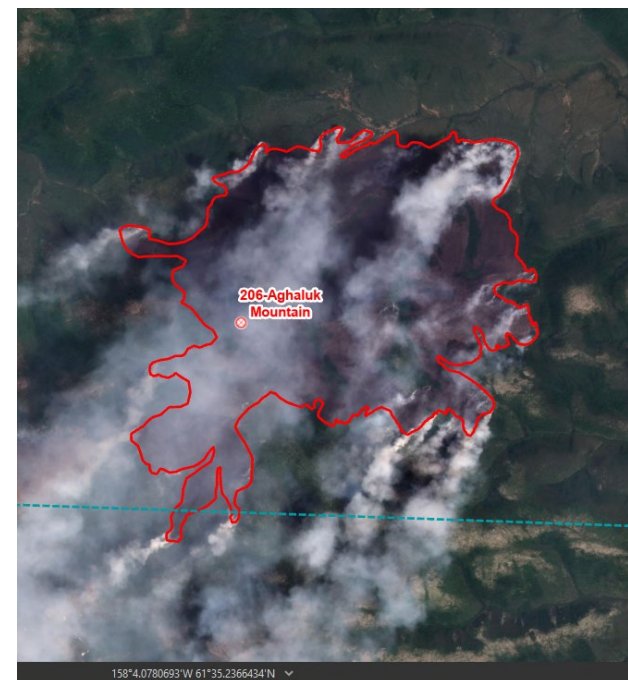
# Determining Snow Free Day for Weather and Fire Fuels Modeling

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# Other Fire Protection Benefits Realized

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- Find and digitize suppression lines, etc.
  - Better planning during active incident and during rehab phase
- See fire activity and local wind patterns
  - More accurate situational awareness
- Ability to find more accurate Fire origins
  - Less time spent on investigations



# Resources Benefits Realized

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- Timber Sale Layout
  - Species Differentiation
  - Previous sales are visible making future easier to layout accurately
- Timber Sale Inspections
  - Riparian Buffers
  - Unit Boundary
  - Sale Progress Tracking
  - FRPA Inspections



# Alaska Forest Resources and Practices Act(FRPA)

## What is it?

### Purpose

“The Act is designed to protect fish habitat and water quality and ensure prompt reforestation of forest land while providing for a healthy timber industry. The FRPA ensures that both the timber and commercial fishing industries can continue to provide long-term jobs.”



State of Alaska, © OpenStreetMap, Microsoft, Esri, Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Paris, Canada

Coordinate System: NAD83 2011 0 165 330 Feet  
State Plane AK Zone 1 FIPS 5001  
Map Scale: 1 inch = 330 Feet

Latitude/Longitude : 59.5749N 139.6915W  
Relative center position of the retention area examined.

Retention area data collection details:  
Instrument - garmin 62stc  
Position Control - point +/- 3 meter filtered and averaged to maintain position accuracy 1m-3m.  
Position correction - periodic boundary location using 75' steel loggers tape verifying gps control.  
Weather conditions - intermittent heavy rain and wind, overcast, 1000+ft ceiling, and 5 to 10 mile visibility throughout the collection period.  
Satellite constellations proved consistent during the collection period with established 3m or better accuracy provided.

Yakutat FRPA Inspection  
09/21/2022  
Canoe Pass Harvest Unit - 2020-6  
Contractor: Yak-Timber  
Land Owner: Yak Tat Kwaan  
Buffer Retention Area Harvest Map

## Map Depiction Description

Blue line - Cataloged fish stream location  
Red Polygon - Timber Retention Area

### Observations:

The inspection of this stream reach observed that the FRPA required tree retention area had been harvested, however a portion of stream vegetation remained that did not contain trees but was populated with alder and other brush species adjacent to the stream channel. Logging debris and equipment crossing locations were also identified within the stream channel. The equipment crossing location are identified in yellow.

State of Alaska  
Division of Forestry  
Haines Office

Prepared by : GJP - SOA/DNR, DOF 10/22



"Develop, conserve, enhance, and manage the state's forests to provide a sustainable yield of forest resources for Alaska..."



# Conclusion & Acknowledgements

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- Valuable tool for Resources and Fire Protection
  - The more Planet gets used, the more use cases are found
  - Not a silver bullet
- 
- Leslie Jones for starting the Pilot Program
  - Foresters and Fire Managers who use the imagery