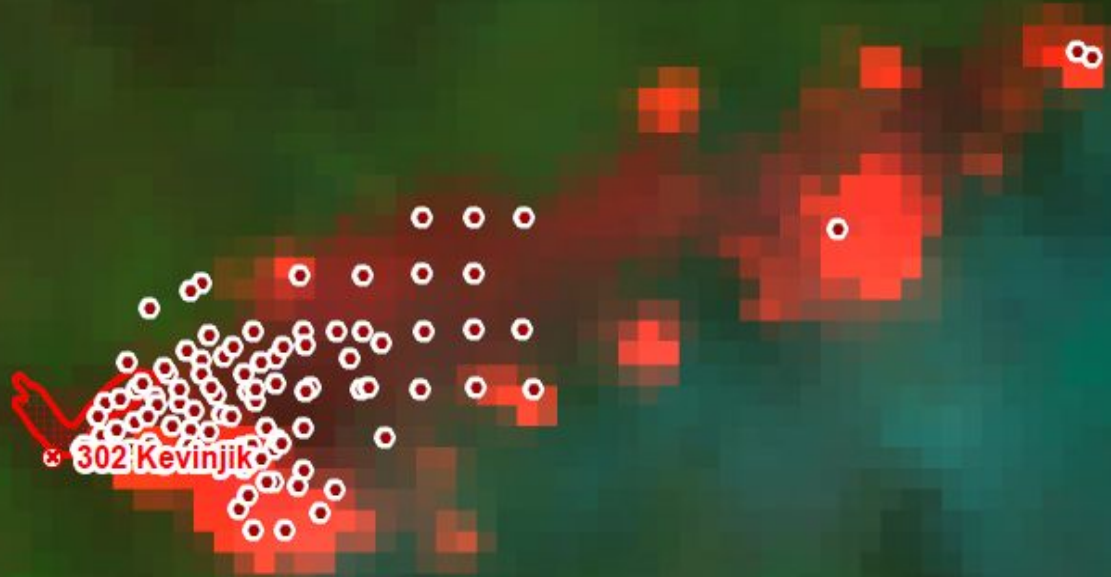


A Guide to Alaska-specific Data Resources Available for Fire Behavior Modelling



Jenn Jenkins

BLM Alaska State Office - Alaska Fire Service

Presentation Roadmap

Resources available to Fire Behavior Analysts (FBAN) and Long Term Fire Analysts (LTAN).

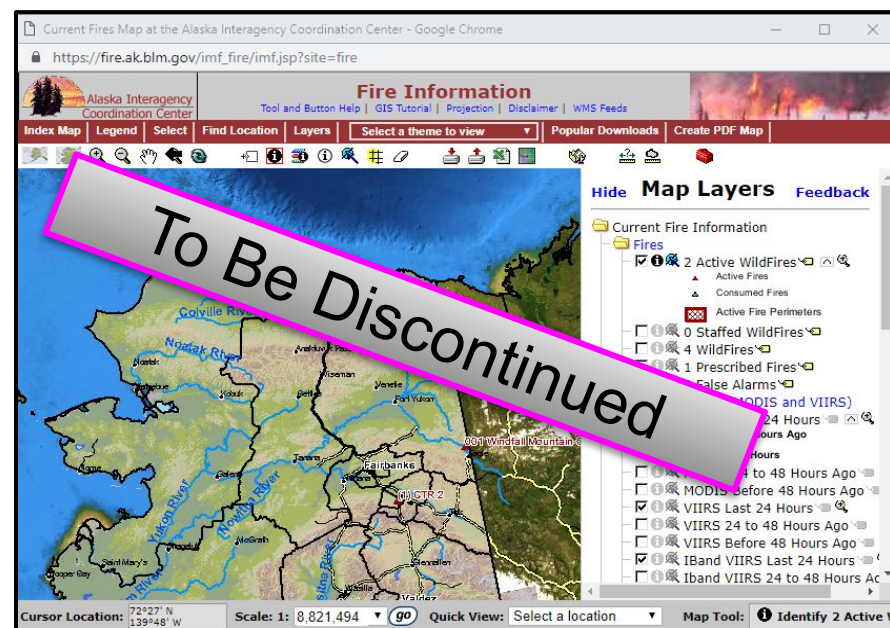
- Wildland Fire Perimeters
- Fire Heat Points
- Satellite Imagery
- Supplemental Data (and shortcuts)
- Questions, Discussion & Demonstration

AK Wildland Fire Perimeters

- ➔ AICC / AFS “Fire Perimeters” is the authoritative source.
 - ➔ AFS, DOF, and USFS submit perimeters to AFS GIS Staff → incorporated into Fire Perimeters.
 - ➔ IMT’s required to submit perimeters to AFS GIS Staff → incorporated into Fire Perimeters.
- ➔ GeoMAC data ≠ AICC / AFS data.
- ➔ Only a few AK Wildland Fires have info available from the NIFC FTP site.

AK Wildland Fire Perimeters

- ➔ AICC / AFS moving away from AICC ArcIMS.
- ➔ As of 04/22/2019, data download capacity still intact - **but could change any time.**
- ➔ Good news! There are other ways to access these data.



AK Wildland Fire Perimeters


ArcMap & ArcGIS Pro users strongly encouraged to use the Map and Features Services from AICC / AFS.

<https://fire.ak.blm.gov/predsvcs/maps.php>

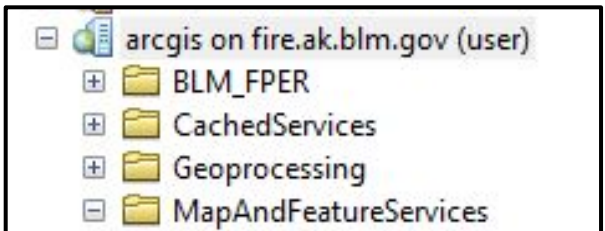
Predictive Services - Maps/Imagery/Geospatial
BLM ArcGIS Online Web Mapping Services
 Alaska Wildland Fire Information
 User Guides
 Alaska Wildland Fire Information User Guide 
 Alaska Wildland Fire Perimeter Submission Guide 2019 
 AICC ArcGIS Server Services
 AICC ArcGIS Server Services 

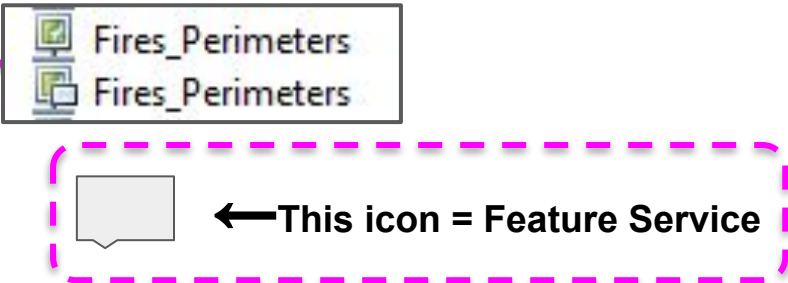
New page 

Folders:

- [BLM_FPER](#)
- [CachedServices](#)
- [Geoprocessing](#)
- [MapAndFeatureServices](#) 
- [Testing](#)
- [Utilities](#)

New page 





← This icon = Feature Service

<https://fire.ak.blm.gov/arcgis/rest/services/MapAndFeatureServices>

AK Wildland Fire Perimeters

<https://fire.ak.blm.gov/predsvcs/maps.php>

Predictive Services - Maps/Imagery/Geospatial

BLM ArcGIS Online Web Mapping Services

[Alaska Wildland Fire Information](#)

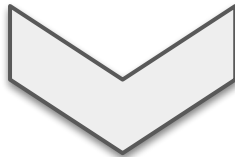
User Guides

[Alaska Wildland Fire Information User Guide](#) 

[Alaska Wildland Fire Perimeter Submission Guide 2019](#) 

AICC ArcGIS Server Services

[AICC ArcGIS Server Services](#)



Data and Metadata

[Individual Fire Perimeters \(Separate Page\)](#)

+ *Metadata*

+ *Data Templates (zip)*

+ *Data (zipped Text Files)*

+ *Data (zipped filegeodatabases)*

New for 2019. Staged shapefiles.zip for WFDSS (and other uses).

Individual Fire Perimeters By Year

- **2019**

[022_Picnic_Beach_20190416_1800](#) 

+ **2018**

- *Data (zipped filegeodatabases)*

[AlaskaFireHistory_Location_Points_1939_2018](#) 

[AlaskaFireHistory_Perimeter_Polygons_1940_2018.gdb](#) 

Fire Heat Points

➔➔ Fire Heat Points from AICC / AFS

- ➔➔ VIIRS I-Band, VIIRS AF, and MODIS heat detection data pulled directly from UAF-GINA.
- ➔➔ UAF-GINA is the only source of direct-readout (aka *near-real-time*) satellite-derived fire detection data products for Alaska.
- ➔➔ Data processing and distribution occurs within 30 to 50 minutes of satellite pass (VIIRS requires longer processing time).
 - AICC / AFS Heat Points ≠ Heat Points in WFDSS

Fire Heat Points

- ➔ Access to near-real-time VIIRS & MODIS fire heat point data.
- ➔ Map and Features Services from AICC / AFS.
- ➔ View data using Alaska Wildland Fire Information

The screenshot shows the "Alaska Wildland Fire Information" web application. The top navigation bar includes "Wildland Fires", "Lightning", "Fire Spotter", "Reporting and Admin.", and "Fire History and Fuels". The main map area displays a map of Alaska with a search bar and navigation controls. A "Layer List" panel is open, showing the following layers:

- 1:250K Quad Boundaries
- Towns (from ADNR)
- Lightning - Today
- Fire Heat Points (VIIRS, last 48 hrs)

Below the layers, an "Age Class" legend is visible:

- 0-12 hrs (red dot)
- 12-24 hrs (orange dot)
- 24-48 hrs (blue dot)

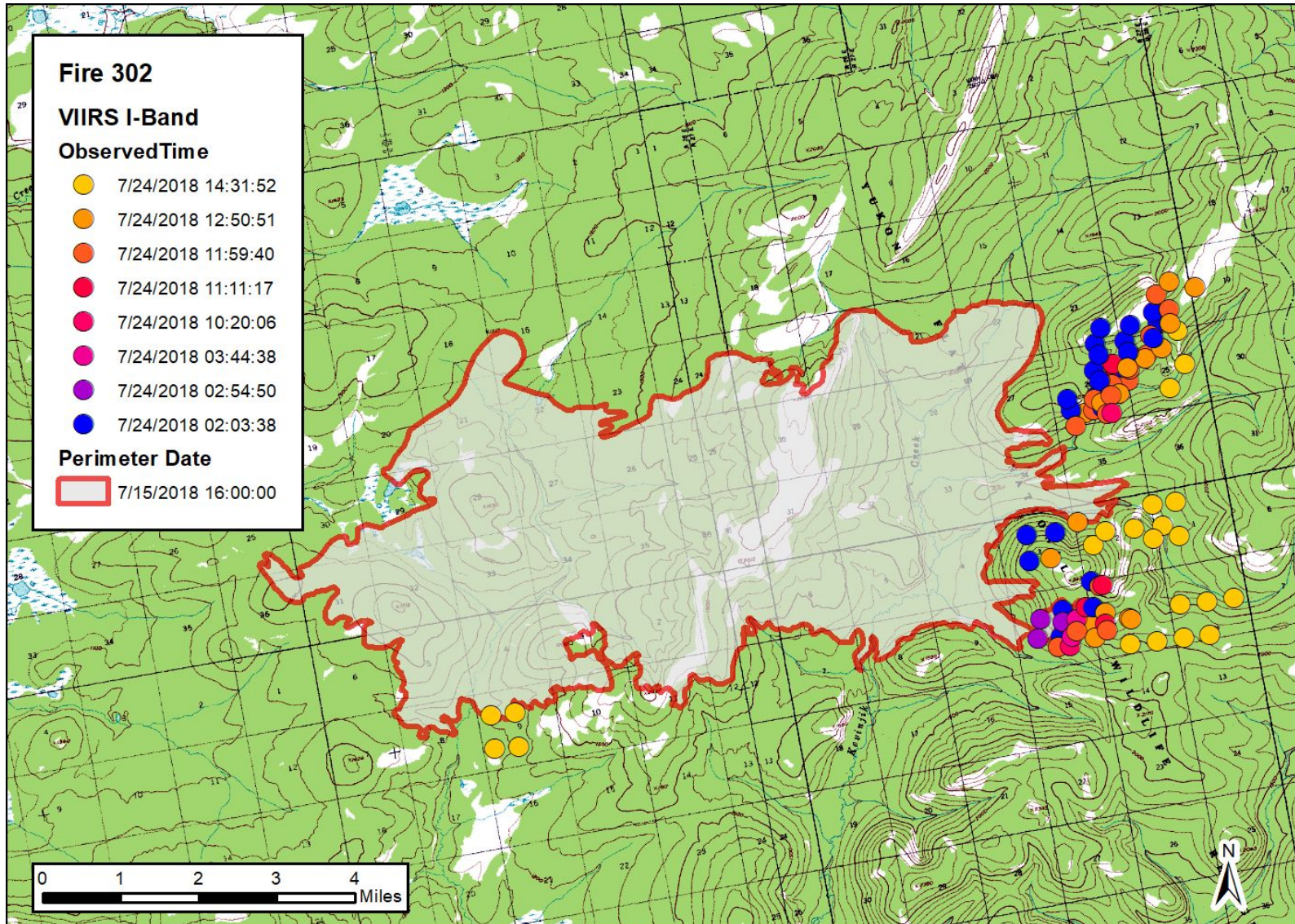
At the bottom of the layer list, there is a checked option for "Active Fires (Points)".

The "Add Data" dialog box is shown, with a search for "fire heat" results. The results are categorized by "Supplemental Data" and include the following items:

- VIIRS FIRE HEAT**: BLM AK Fire Heat Points (VIIRS, last 48 hrs). Feature Service by jjenkins@blm.gov_BLM_EGIS. Credits: BLM Alaska. Includes a legend for 0-12 hrs (red), 12-24 hrs (orange), and 24-48 hrs (blue).
- VIIRS FIRE HEAT**: BLM AK Fire Heat Points (VIIRS, last 12 hrs). Feature Service by jjenkins@blm.gov_BLM_EGIS. Credits: BLM Alaska. Includes a legend for 0-12 hrs (red).
- MODIS FIRE HEAT**: BLM AK Fire Heat Points (MODIS, last 12 hrs). Feature Service by jjenkins@blm.gov_BLM_EGIS. Credits: BLM Alaska. Includes a legend for 0-12 hrs (red).

Each result has "ADD" and "DETAILS" buttons.

Building on Fire Heat Points



NRT Satellite Imagery

➔ VIIRS Land Cover, VIIRS Fire Temperature, VIIRS Fire Color GeoTIFF.

➔ “Proof of concept” data products generated by UAF-GINA. <http://hippy.gina.alaska.edu/distro/nrt/>

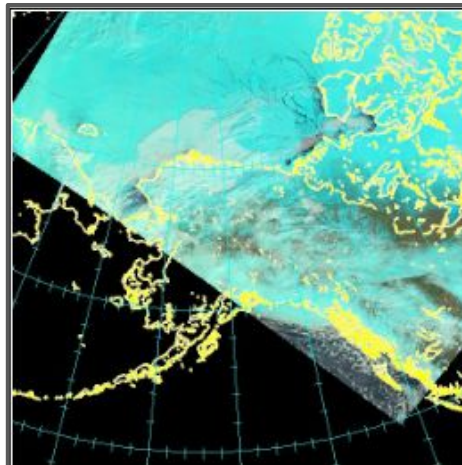
npp.20190422.1959

SNPP

Captured At:

2019/04/22 11:59
AKDT

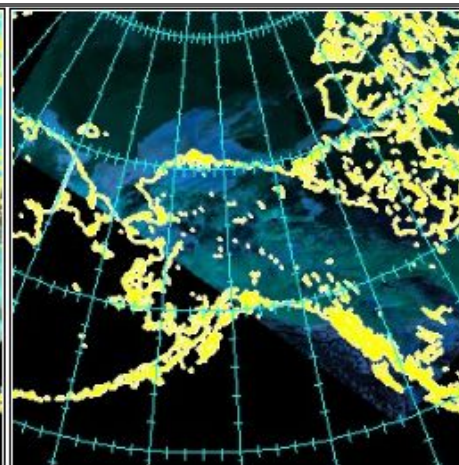
2019/04/22 19:59
GMT



Land Cover

Received at: Gilmore

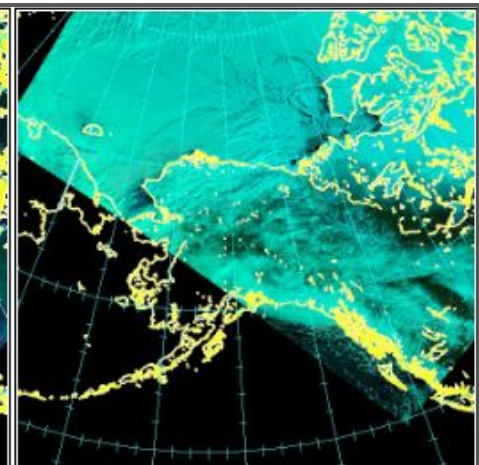
[GeoTiff](#)



VIIRS Fire Temperature

Received at: Gilmore

[GeoTiff](#)



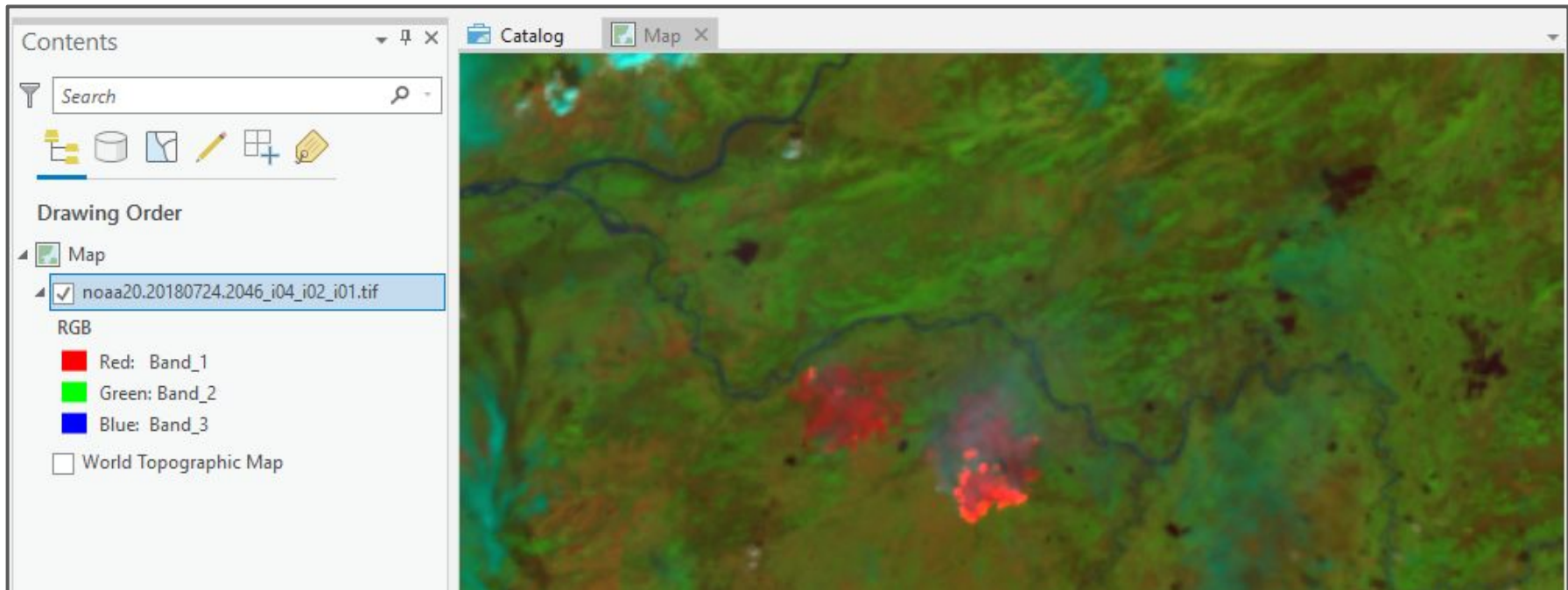
VIIRS Fire Color

Received at: Gilmore

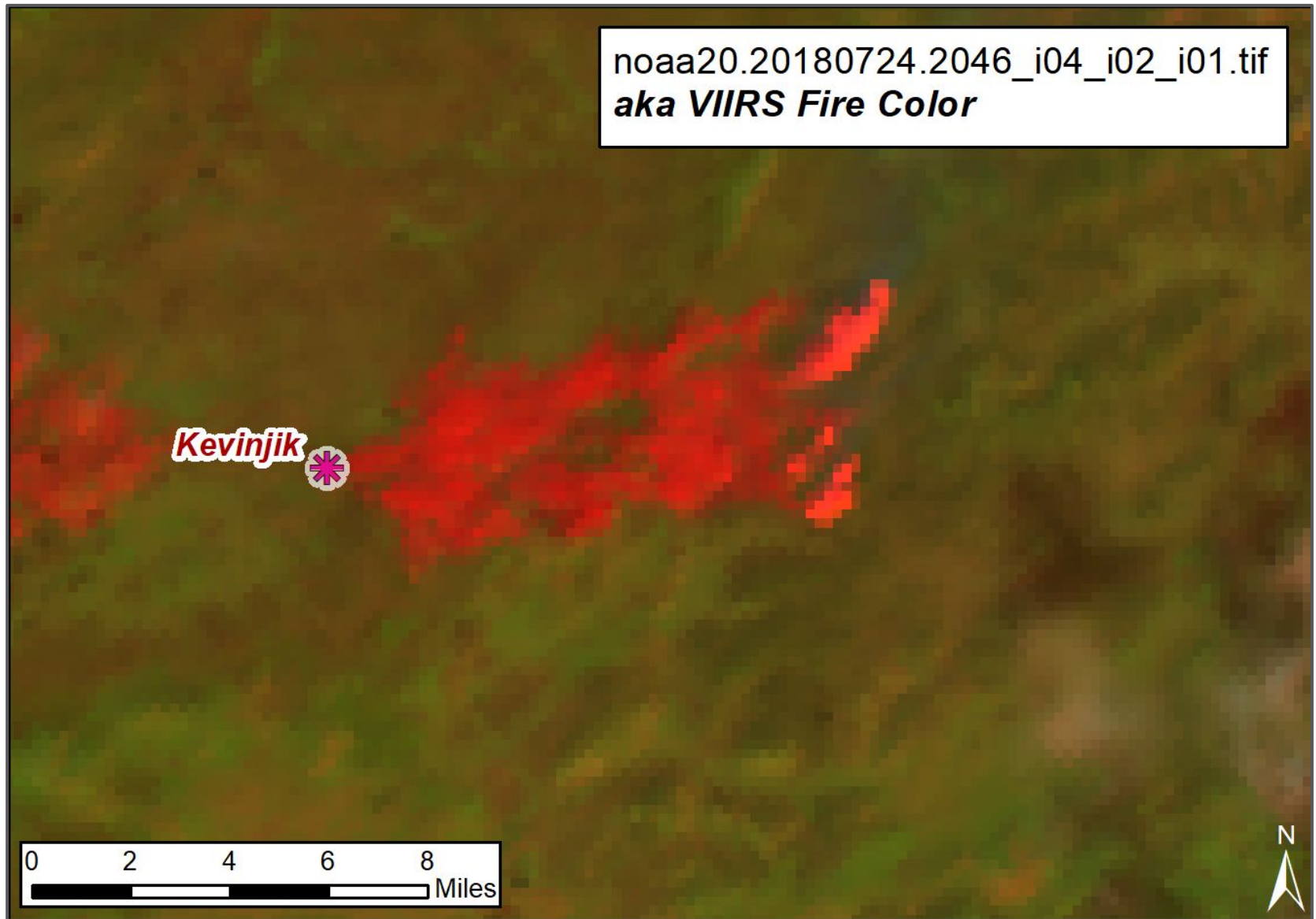
[GeoTiff](#)

NRT Satellite Imagery

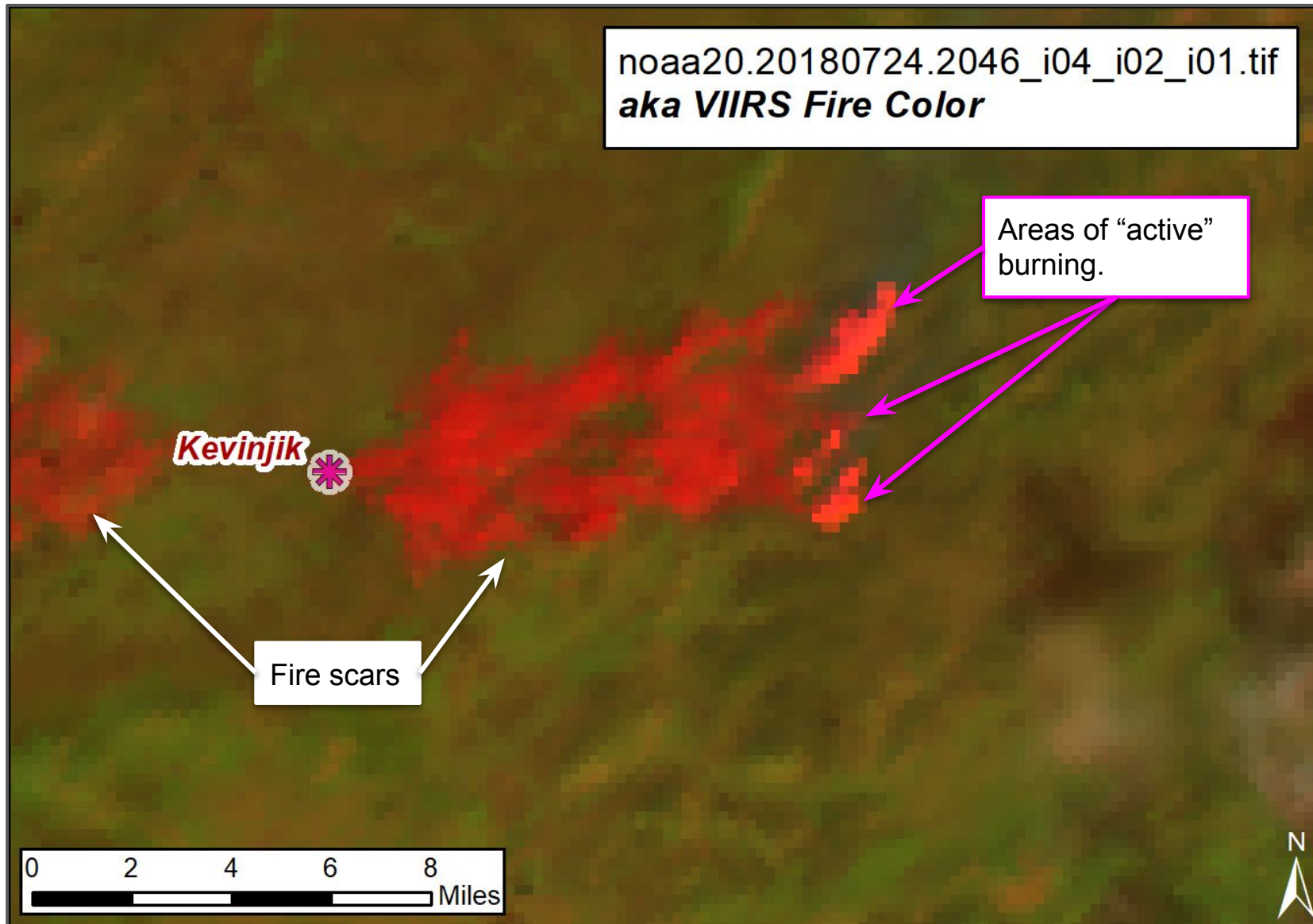
- ➔ GIS application required (for full utility)
 - ➔ Download from [//hippy.gina.alaska.edu/distro/nrt/](http://hippy.gina.alaska.edu/distro/nrt/)
 - ➔ View using ArcMap, ArcGIS Pro, or similar
 - Current form cannot easily be used in AGOL



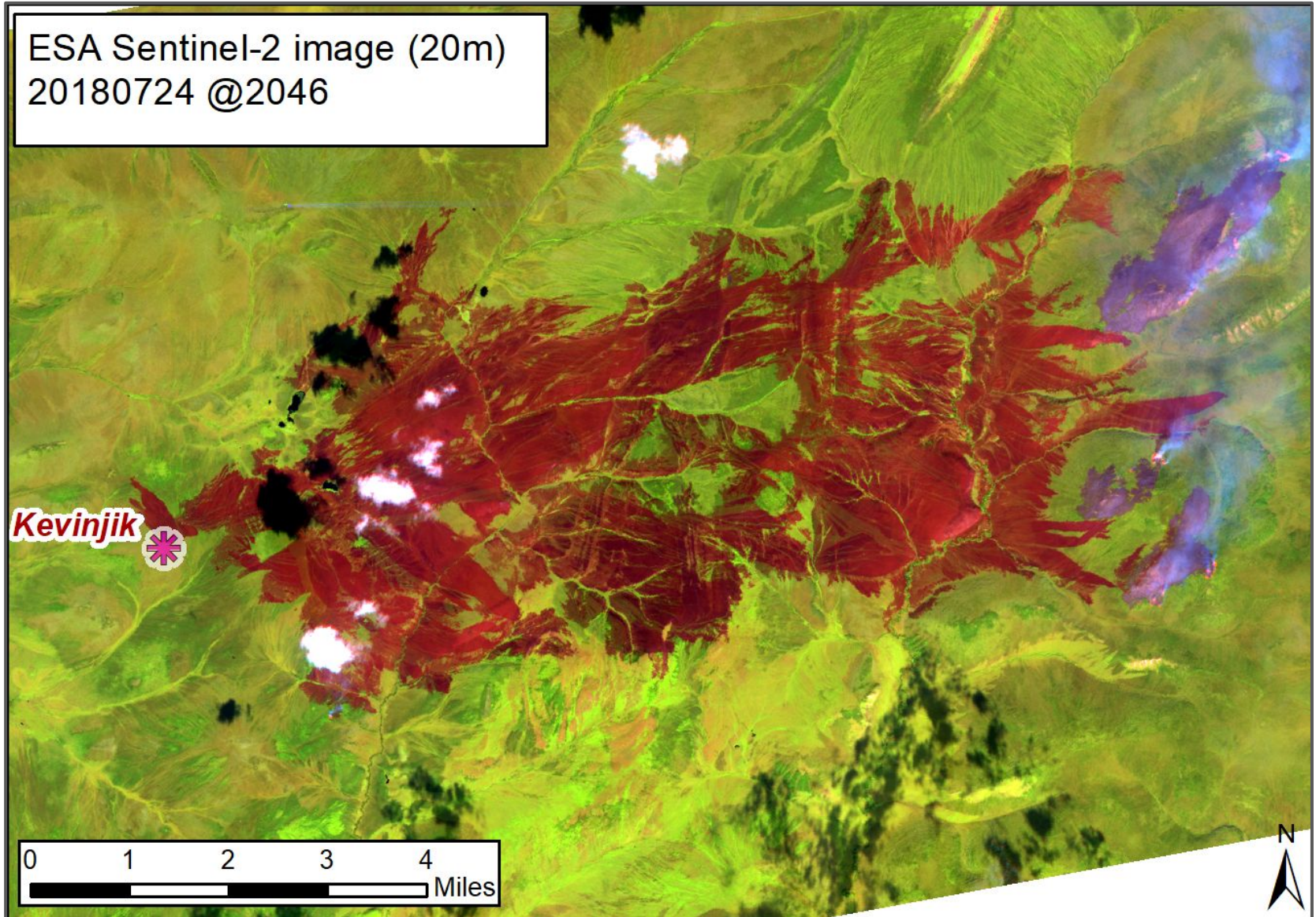
NRT Satellite Imagery



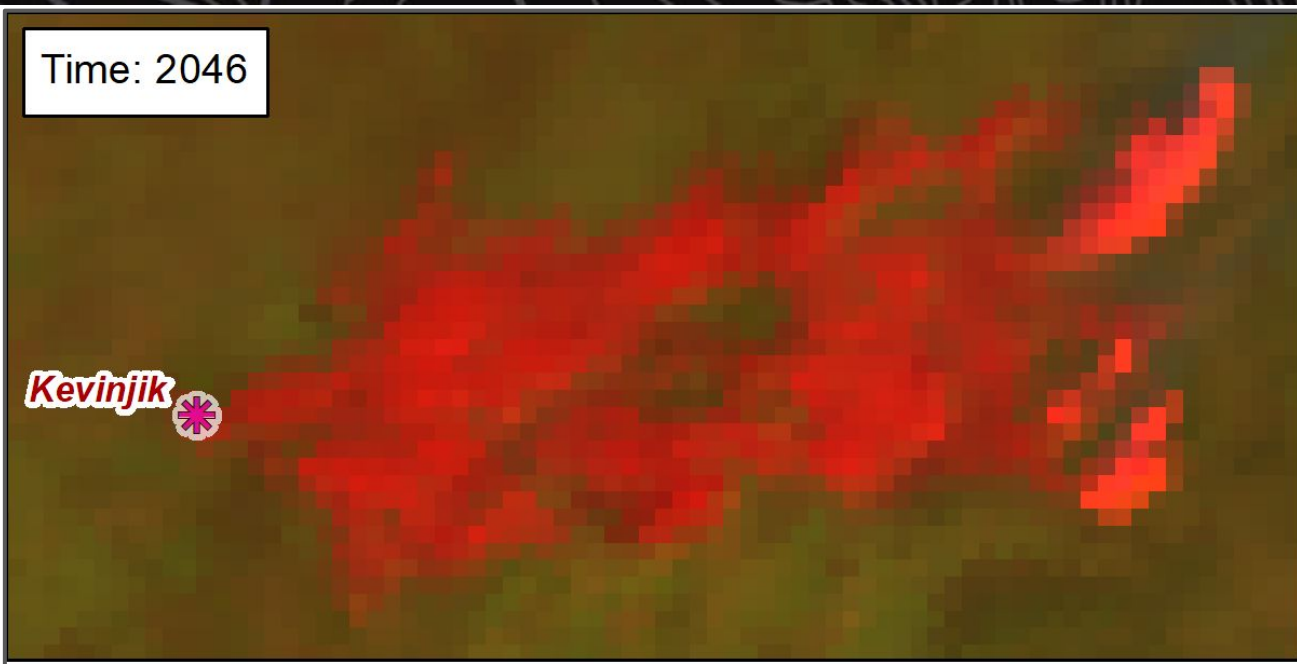
NRT Satellite Imagery



NRT Satellite Imagery



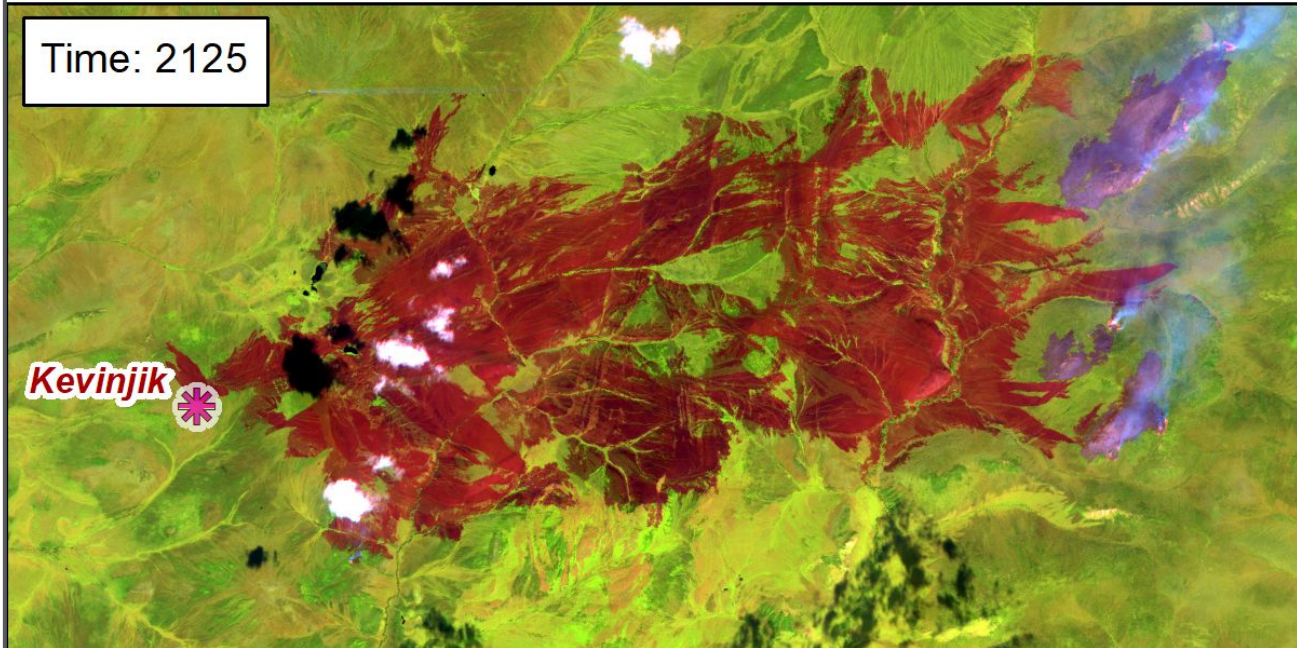
Time: 2046



VIIRS Fire Color (375m)
Multiple scenes per day

Available ~ 50 min after collection.

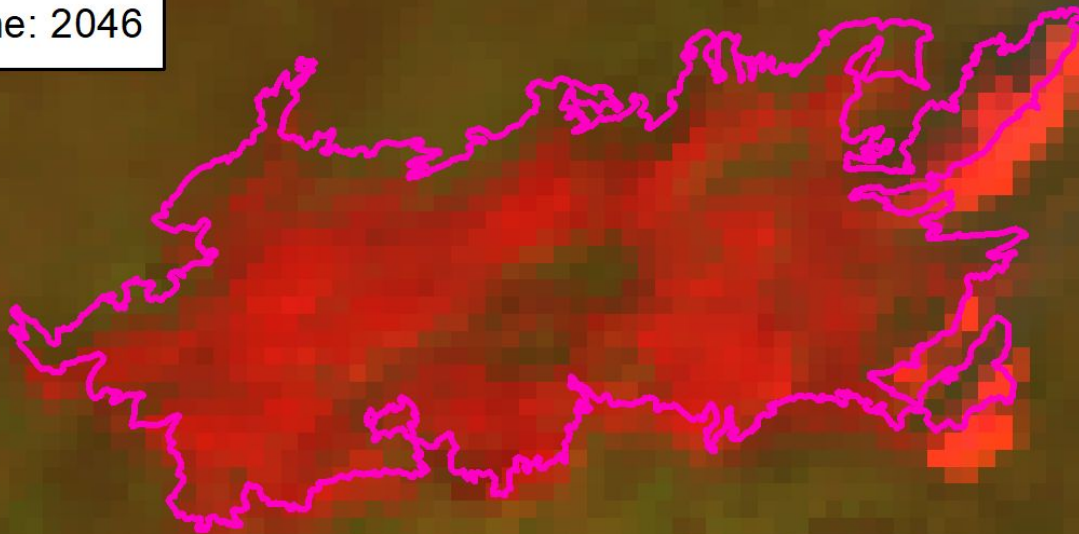
Time: 2125



ESA Sentinel-2 (20m) and
Scenes ~ 5 to 14 days

Available ~ 12 hrs after collection.

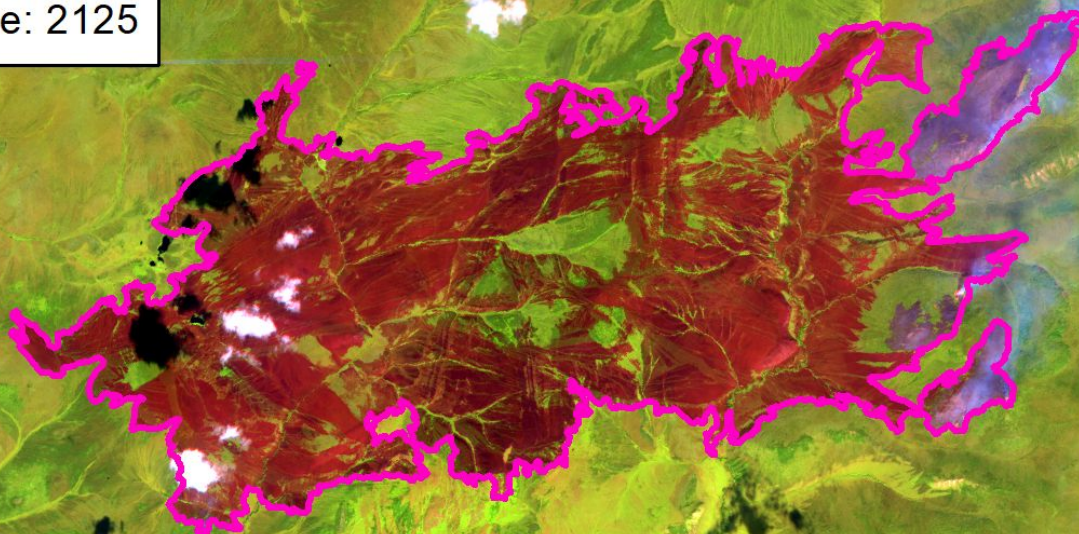
Time: 2046



VIIRS Fire Color (375m)
Multiple scenes per day

Available ~ 50 min after collection.

Time: 2125



ESA Sentinel-2 (20m) and
Scenes ~ 5 to 14 days

Available ~ 12 hrs after collection.

Supplemental Data

- ➔ **Alaska Known Sites Database (AKSD)**
 - ➔ AKSD identifies infrastructure, cultural and natural resource sites throughout AK that may be threatened by wildfire.
 - ➔ Potentially useful as Points of Interest and/or Incident Objective Shapes?
 - ➔ Typically viewed using one of the web applications.
 - Can also be accessed through ArcMap and ArcGIS Pro
 - ➔ Requires NIFC-AGOL account.

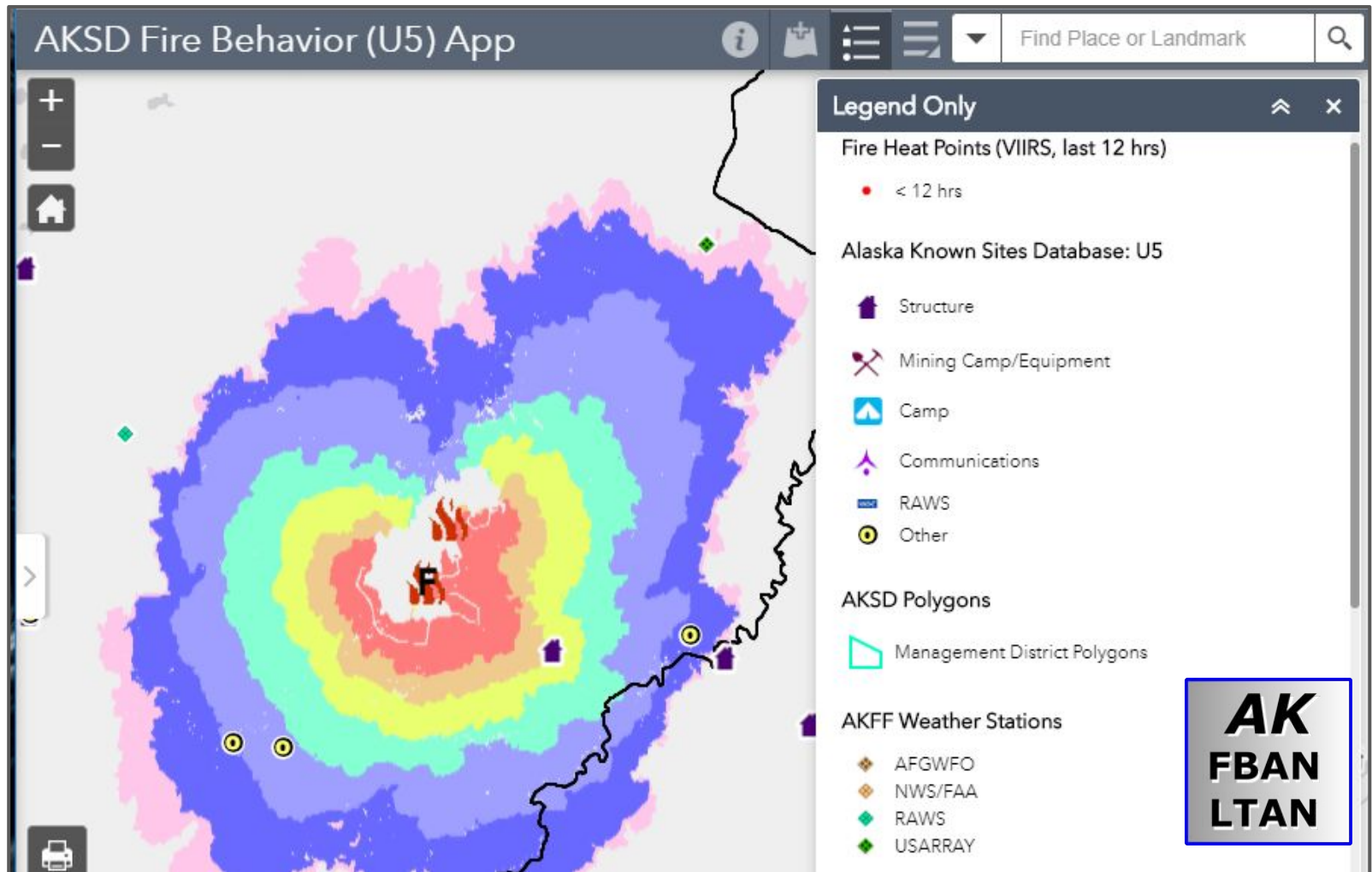
Supplemental Data

AKSD can be used in ArcMap and ArcGIS Pro.

The screenshot displays the ArcGIS Pro interface. On the left, the 'Contents' pane shows the 'Map' layer selected. Underneath, the 'Alaska Known Sites Database: U5' is expanded to show 'Alaska Known Sites Database'. The legend includes several categories: Structure (purple house icon), Mining Camp/Equipment (red pickaxe icon), Camp (blue tent icon), Communications (purple antenna icon), RAWs (blue 'w' icon), and Other (yellow circle icon). Below this, 'AK Weather Stations' are listed with sub-categories: AFGWFO (orange diamond), NWS/FAA (orange diamond), RAWs (green diamond), and USARRAY (green diamond). The main map area shows a topographic map of a coastal region with 'Lake Minchumina' and 'Airport Way' labeled. Purple house icons representing structures are scattered along the shoreline. A scale bar indicates 200 meters. At the bottom right, a user profile box shows 'AK - Jennifer (National Interagency Fire Center)'. A pink-bordered text box at the bottom right contains the instruction: 'Must sign in to ArcGIS Online using NIFC-AGOL account (xxxxx_nifc)'. The bottom status bar shows a scale of 1:41,188 and a coordinate of 152.3435.

Supplemental Data

Access via existing AKSD Group or something new...

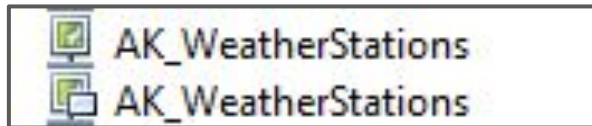


Supplemental Data (and shortcut to AKFF)

➔➔ AK Weather Stations (with links)

➔➔ Same stations as Alaska Fire & Fuels

➔➔ Map and Feature Service available from AICC / AFS



➔➔ Format is compatible with various platforms

- ArcGIS Online, ArcMap, ArcGIS Pro
- Available from Alaska Wildland Fire Information web app

Supplemental Data (and shortcut to AKFF)

(1 of 2)

MORETEXT

ITIME 7/1/2017, 6:39 AM

MODTIME 4/23/2019, 4:22 AM

TIMEZONE America/Anchorage

WXSTATUS ACTIVE

INDEX_STATUS

INDEX_SINCE 20190101

CODE G23KX

AK_ID 59980

LATITUDE 66.71

LONGITUDE -150.02

ELEVATION 2,447

MESOWESTWEBURL [More info](#)

LOCATION_FIXED True

[Zoom to](#)

MESOWEST

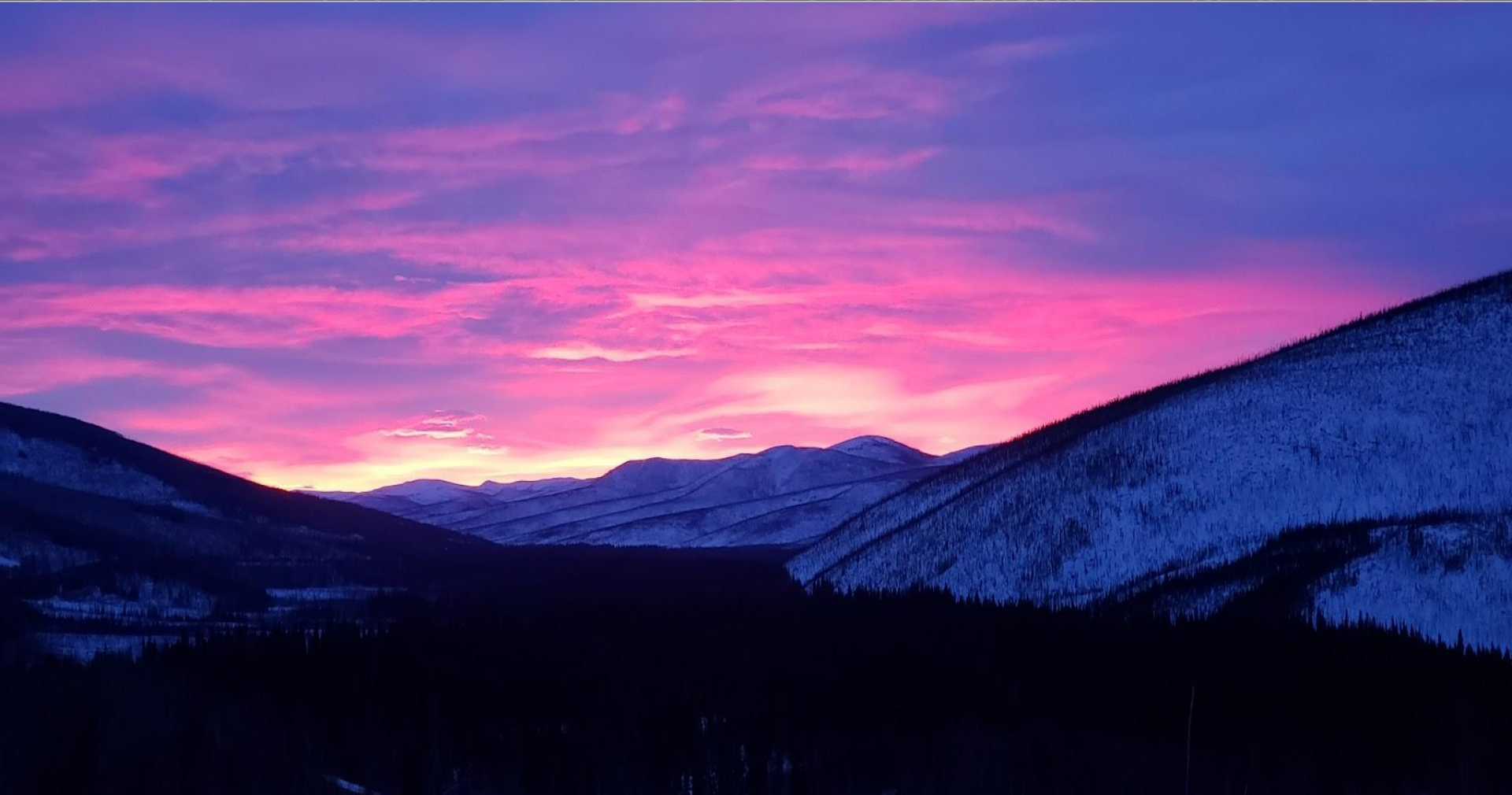
Alaska Fire & Fuels

Station WX & FWIs **G23KX** Bananza Creek

MODE CFFDRS MESOWESTO NO-PRECIPO

Date	Change	Latest	RHP	WSM	GUST	VPD	PREC 24h	FFMC
2019-04-25	hrly		28	54	1	2	0.00	None
2019-04-24	hrly		24	59	16	2	0.07	None
2019-04-23	hrly		29	71	14	2	0.02	None

Questions?



Jennifer Jenkins (jljenkins@blm.gov)
BLM Alaska State Office - Alaska Fire Service