



GTAC Update on NIROPS- Related Activities

2018 NIROPS Closeout Meeting

October 23, 2018



USDA Forest Service, Geospatial Technology and Applications
Center,

FSWeb: <http://fsweb.rsac.fs.fed.us>

WWW: <http://www.fs.fed.us/eng/rsac/>

Presentation Outline

- NIROPS Website and IR Online Ordering
- 2018 Aircraft3/Firehawk Support Summary
- Aircraft3 Utilization: 2017, 2018, and beyond



NIROPS Website 2018

NATIONAL INFRARED OPERATIONS

HOME ABOUT DOCUMENTS IMAGERY LINKS TRAINING IRIN AREA **IR SCANNER ORDERS** SOCIAL WORKSHOP CLOSEOUTS TFRSAC



Serving the fire management community with Infrared Imagery since 1964.



[Download the NIROPS CDE KML](#)



NIROPS 3833 S Development Ave. Boise, ID 83705

NIROPS and IR Online Ordering Trivia

- June 2006: Site goes operational.
- May 2007: IR request No. 1,000 submitted on 5/14, Roundabout Swamp Fire, Southern.
- August 2014: IR request No. 10,000 submitted on 8/14, Log Haven Fire, Northwest.
- August 2018: IR request No. 20,000 submitted on 8/15, Brownstone Fire, Northern Rockies.



Klamathon Fire
Inciweb

NIROPS Website and IR Online Ordering

- Modifications for 2018 season
 - Color coding IR requests by IMT type
 - Same color scheme as the CONUS Large Incident KMZ
 - Type 1 Red
 - Type 2 Blue
 - NIMO Purple
 - Type 3/Other Gray

HOME ABOUT DOCUMENTS IMAGERY LINKS TRAINING IRIN AREA IR SCANNER ORDERS SOCIAL WORKSHOP CLOSEOUTS TFRSAC					
REQUESTS CURRENT ORDERS TOOLS USERS PROFILE LOGOUT					
Show Archived					
<input type="checkbox"/> Incident Name (number)	IR Interpreter	Request Date	Status	Options	
<input type="checkbox"/> Bald Mtn.	Buck Buchanan	2018-09-19 13:15:21	Awaiting Approval	options	edit create new order
<input type="checkbox"/> NATCHEZ		2018-09-19 13:11:14	Awaiting Approval	options	edit create new order
<input type="checkbox"/> Boundary		2018-09-19 12:56:18	Awaiting Approval	options	edit create new order
<input type="checkbox"/> Howe Ridge		2018-09-19 12:53:41	Awaiting Approval	options	edit create new order
<input type="checkbox"/> Marten Creek	Brenda Miller	2018-09-19 12:36:09	Awaiting Approval	options	edit create new order
<input type="checkbox"/> SLATE	Brenda Miller	2018-09-19 10:47:13	Awaiting Approval	options	edit create new order
<input type="checkbox"/> GOSHUTE CAVE	Steve Moore	2018-09-19 10:11:25	Awaiting Approval	options	edit create new order
<input type="checkbox"/> KLONDIKE		2018-09-19 10:01:05	Awaiting Approval	options	edit create new order
<input type="checkbox"/> BIBLE BACK		2018-09-19 09:57:05	Awaiting Approval	options	edit create new order
<input type="checkbox"/> STEWART CREEK		2018-09-19 09:55:30	Awaiting Approval	options	edit create new order
<input type="checkbox"/> TERWILLIGER	Andrew Mock	2018-09-19 09:55:17	Awaiting Approval	options	edit create new order
<input type="checkbox"/> RIGGS		2018-09-19 09:30:52	Awaiting Approval	options	edit create new order
<input type="checkbox"/> SILVER CREEK		2018-09-19 09:29:56	Awaiting Approval	options	edit create new order
<input type="checkbox"/> BACON RIND		2018-09-19 09:24:43	Awaiting Approval	options	edit create new order
<input type="checkbox"/> HOLMAN		2018-09-19 08:45:52	Awaiting Approval	options	edit create new order
<input type="checkbox"/> MCLEOD		2018-09-19 08:45:37	Awaiting Approval	options	edit create new order
<input type="checkbox"/> CRESCENT MOUNTAIN		2018-09-19 08:45:15	Awaiting Approval	options	edit create new order
<input type="checkbox"/> POLE CREEK	Andrew Mock	2018-09-19 08:31:53	Awaiting Approval	options	edit create new order
<input type="checkbox"/> Moose Creek		2018-09-19 08:00:02	Awaiting Approval	options	edit create new order

NIROPS Website and IR Online Ordering

- Modifications for 2018 season
 - Assigning names to individual fires in complexes

NIROPS Online IR Scanner Request Form
* - Required Fields

Request Properties

Incident Number *	UTUWF-001048	Incident Name	Mirror Lake Complex
Project Number *	P4L5AW	A Number	A-37
Override Number	0419		
Created	2018-10-01 09:56:17	Updated	2018-10-05 12:15:57
Created By	Rob Frisk	Updated By	kuenzi - 174.208.7.107

Add Scan Box

All fields are required

Scanbox name

WEST Deg Min

EAST Deg Min

SOUTH Deg Min

NORTH Deg Min

Degrees Minutes

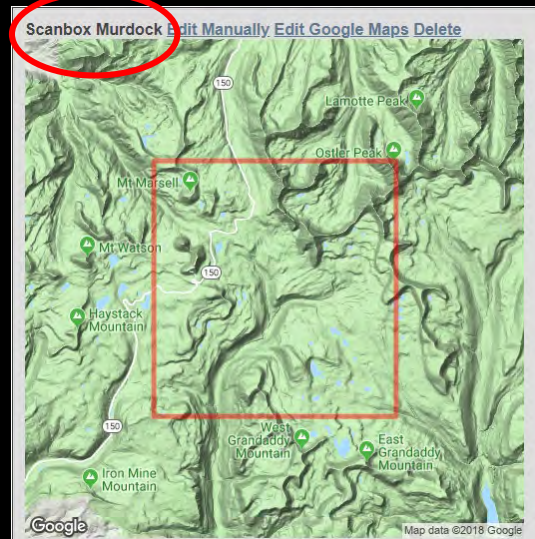
North

East

South

West

Save Cancel



NIROPS Website and IR Online Ordering

- Issues during 2018 season
 - Overall, Online Ordering has been stable through the fire season.
 - NIROPS website and other fire applications, went down in late May.
 - NIROPS website and other fire applications went down on Memorial Day weekend.
 - Hardware fault on a server controller board.
 - Moved the website code base to a server at GTAC so the website was accessible.
 - GeoMac perimeters not displaying in Google Map box once IR request activity increased on the website.
- Modifications for 2019 season?
 - Submit your requests soon so we can compile and prioritize a list for the web developers.



NIROPS Website Usage Summary for 2018

April 1 – October 15

- Items of interest:
 - 485,619 visits to the website; 8,641 unique visitors
 - 27 % of visits were from mobile devices
 - Tablets – 41 %
 - Smart Phones – 33 %

Year	Visits	Unique Visitors	Page Views	Smart Phone(%)	Tablet(%)
2018	27,044	8,641	485,619	33	41
2017	27,898	7,025	523,926	29	46
2016	19,257	5,883	265,674	32	45
2015	20,651	5,077	356,541	12	10
2014	17,076	5,064	260,912	12	15

HI-TECH HEAT-SEEKERS

The USDA Forest Service's NIRCPS program is the premier source for airborne infrared imagery to support wildland fire management across the United States. Daily NIRCPS infrared imagery is ordered for hundreds of incidents each year and is used to create image-derived products that locate and map current heat concentrations at a fine spatial scale.

THE DAILY CYCLE OF WILDLAND FIRE INFRARED IMAGING SUPPORT



THOMAS FIRE

Incident Type: Wildfire
Cause: Under Investigation
Date of Origin: December 04, 2017 approx. 18:28 PT.
Location: Santa Barbara and Ventura Counties, California



8 Data Delivery

NIPOPS data products are integrated into various work flows to support fire management operations, including compilation of the incident planning map to support the daily incident briefing conducted at 06:00 PT.

7 Image-Derived Data/Products

Trained IRINs interpret the imagery to produce standard mapping products. IRINs also document findings from the interpretation process and coordinate with the Incident Management Team to advise on technical issues.

6 In-Flight, Low Latency Delivery

Preprocessed infrared imagery is uploaded to a server minutes after acquisition via in-flight, broadband Internet transfer and accessed by infrared interrogators (IRINs).

5 Synoptic Coverage

The six-mile-wide swath of imagery acquired on a single pass by a NROPS aircraft allows for coverage at a rate of ~300,000 acres per flight hour. Consequently, an approximately 10,000-acre fire can be imaged in less than two minutes.

① Infrared Flight Request (IR)

Incident management team submits an infrared order via NADPS website by 10:30 MT. The first request for Thomas was received December 15, 2017, 11:06 PT—during the first full operational period of the fire, approx. 17.5 hours after ignition.

2 Flight Planning

NROPS develops flight plans to acquire imagery for all requested incidents resolved that day.

NHESP is the original source for the Winter Wild Bird Status List for all participants. Please log in to our website at www.nhosp.org to view and update your list.

3 Eyes in the Night Sky

At NIPOPS missions are flown at night to take advantage of temperature contrasts. Thermal imagery is acquired using the Phoenix sensor which can detect a hot spot smaller than the size of a paper plate from 10,000 feet above ground level.

④ On board Data Processing

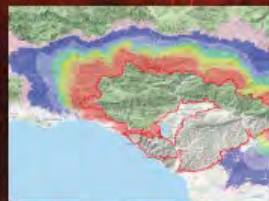
infrared technicians on the aircraft monitor and ensure quality data collection. Imagery is processed on board the aircraft to remove distortions caused by the terrain.

PRODUCTS AND APPLICATIONS

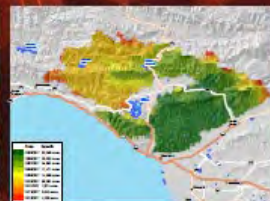
Data and maps are used to initiate fire behavior models, support fire management decision making, and inform the public.



Please do not change the text in this box. It is a placeholder for the text of the figure caption.



PS-Pro modeled fire spread probability over a 7 day period conducted within the Wildland Fire Decision Support System (WFOSS) on December 13, 2017, 10:07 PM. Current NARR fire conditions are presented as a fire model input parameter.



Fire intelligence map products are produced using NIFICS data, including daily incident planning maps to support tactical fire management and suppression operations as well as the progression maps that illustrate daily fire growth over the duration of an incident.

THOMAS FIRE CONTAINED

Case: Under investigation
NIPOPS completed 18 of the 19 Thomas Fire
related mission requests during December 2017



The number of requests for MIREPS infrared imaging is increasing with more extreme fire activity and longer fire seasons.

Aircraft3 2018 Summary

- Very limited analyst support
 - Limited support to incidents with Type 1 or Type 2 teams assigned.
- Persistent issue with late data delivery to the analysts.
- Incident support started on April 16
 - Bluewater, Diener Canyon, NM
 - Rattlesnake, AZ
- Incident support ended on ?
 - Ryan, Silver Creek, CO
- 57 days of continuous support from July 2 – August 31.
- Eastern Area (EA) and Alaska GACCs did not request support.
- Additional support provided by the NCAC-Denver (USGS).
 - USFS and USGS personnel

2018 Aircraft3/Firehawk Support (10/15/18)

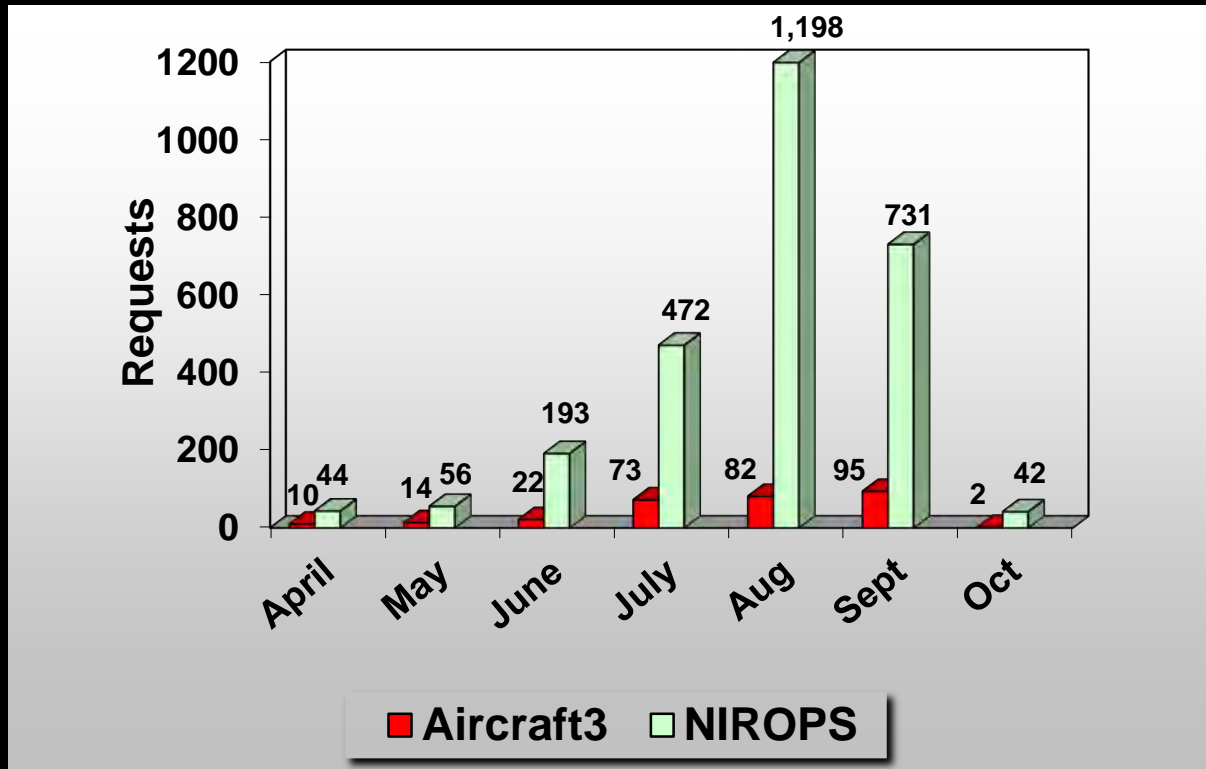
MONTH	NO. OF SUPPORT DAYS	NO. OF FIRES SUPPORTED	GACC(s) SUPPORTED
April	5	3	SW
May	10	4	SA
June	13	8	SW, GB, RM, NW
July	29	14	RM, SO, NO, SW
August	28	19	GB, RM, NW, NO, SO
September	16	22	GB, NR, RM
October	2	2	RM
TOTAL	103		

Extended Support to Incidents

- Ferguson (CA) – 27 nights
- Coal Hollow (UT) – 12 nights
- Avian Complex (FL) – 11 nights
- County (CA) – 9 nights
- Lake Christine (CO) – 9 nights
- Watson Creek (OR) – 9 nights
- Badger Creek (WY) – 7 nights
- Holy (CA) – 7 nights
- Cranston (CA) – 6 nights



Aircraft3 2018 Support to NIROPS

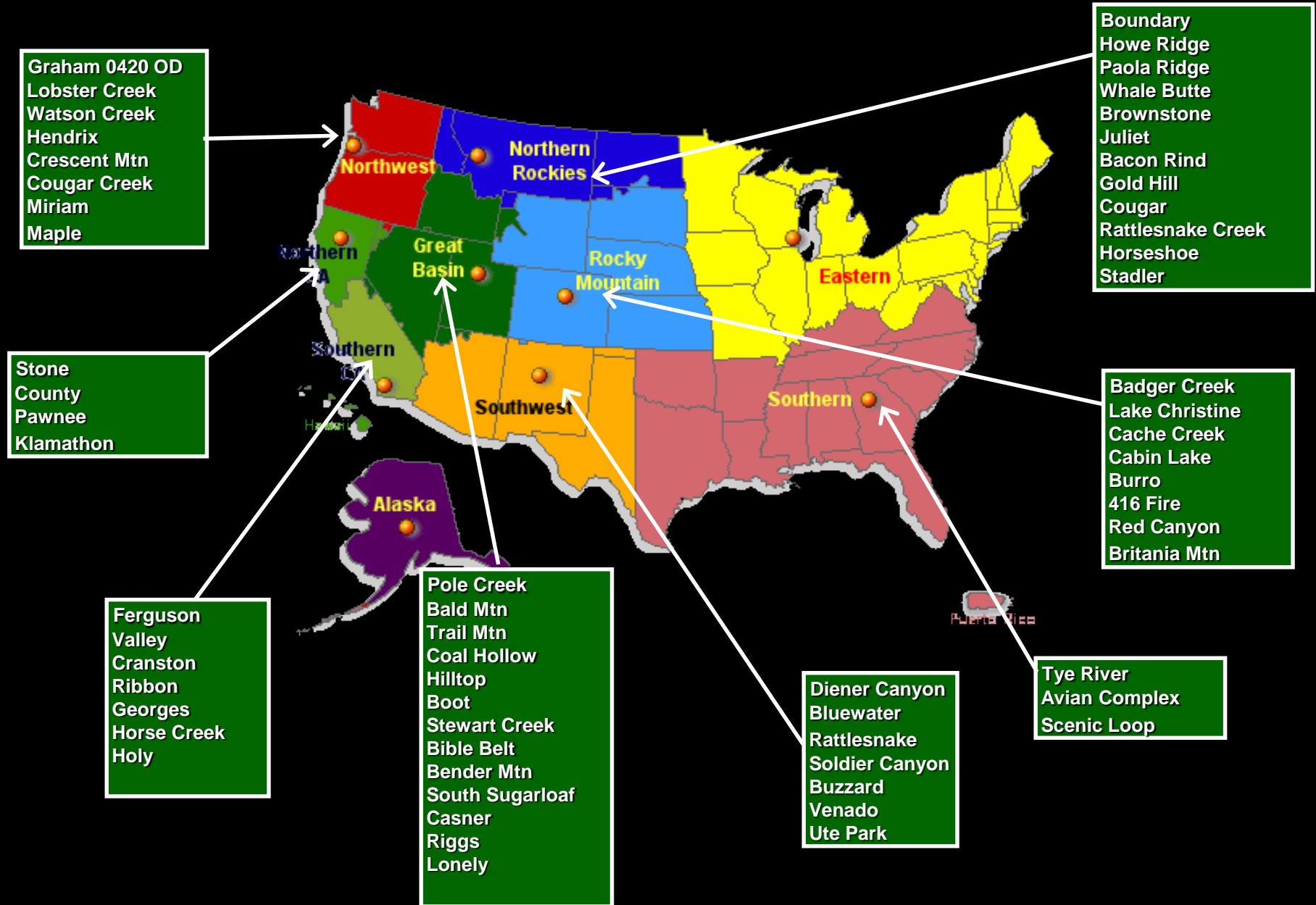


Apr:	23%
May:	25%
Jun:	24%
Jul:	15%
Aug:	7%
Sep:	13%
Oct:	5%

Through October 17, 2018

12 % of the CONUS IR requests (299 of 2,705) were assigned to Aircraft3
82 % of the assigned requests were completed by Aircraft3

Aircraft3 2018 GACC Support



Aircraft3 2018 GACC Support

Geographic Area	No. of Fires	No. of Support Requests	UTF-Weather	UTF-Tech. Issue	Acres ¹
AK	0	0	0	0	0
GB	12	48	2	0	255,841
NO	4	28	1	3	177,032
NR	12	33	6	0	64,957
NW	8	29	1	0	91,396
RM	9	55	6	1	153,983
SO	7	57	2	3	137,341
SW	7	21	0	3	66,479
SA	5	15	1	0	84,103
TOTAL	64	286	19	10	1,031,132

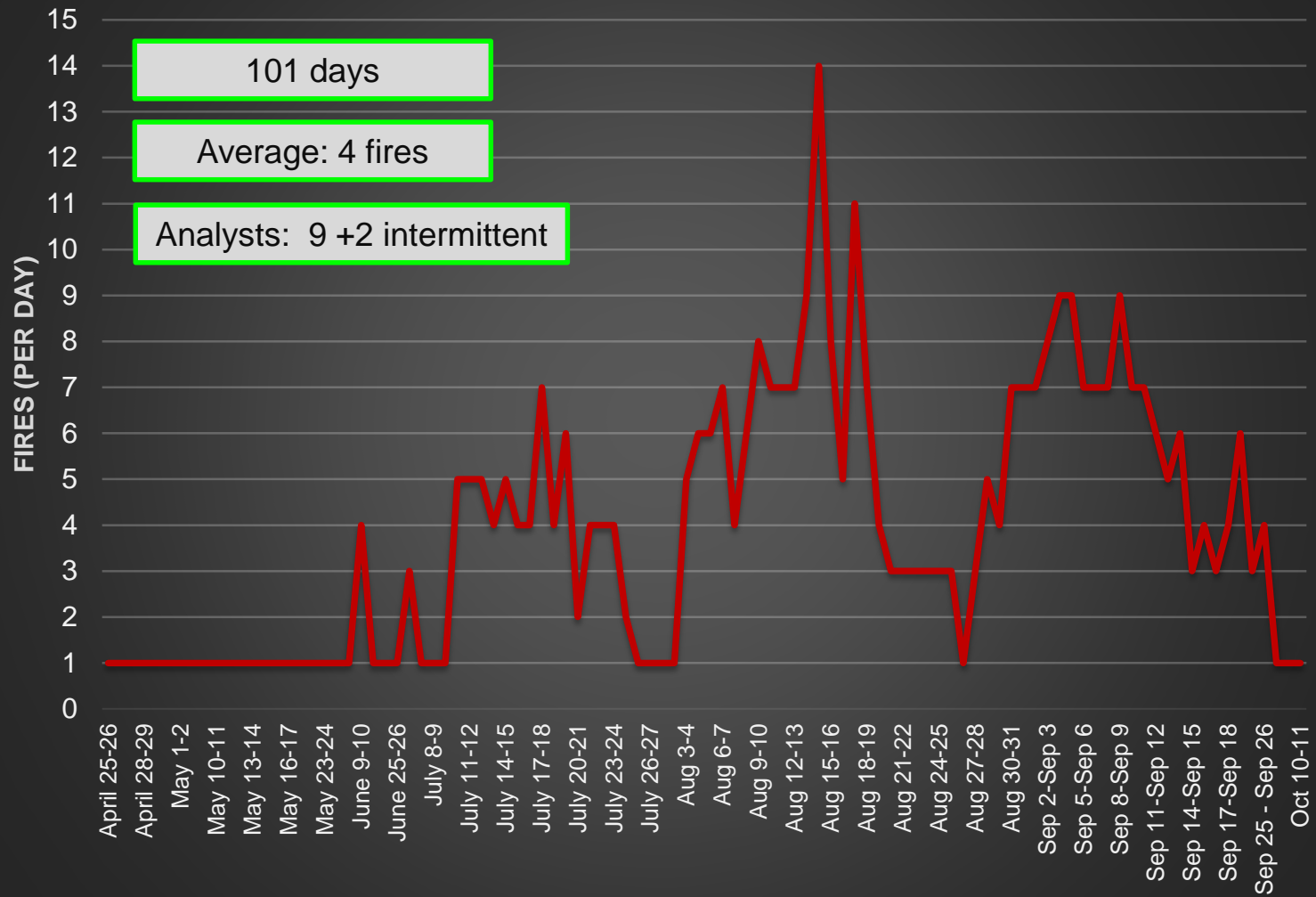
(Through October 17, 2018)

1. Acres shown are from the last night of Aircraft3 support for the incident(s) in the GACC.

AIRCRAFT3 UTILIZATION: 2017, 2018, AND BEYOND

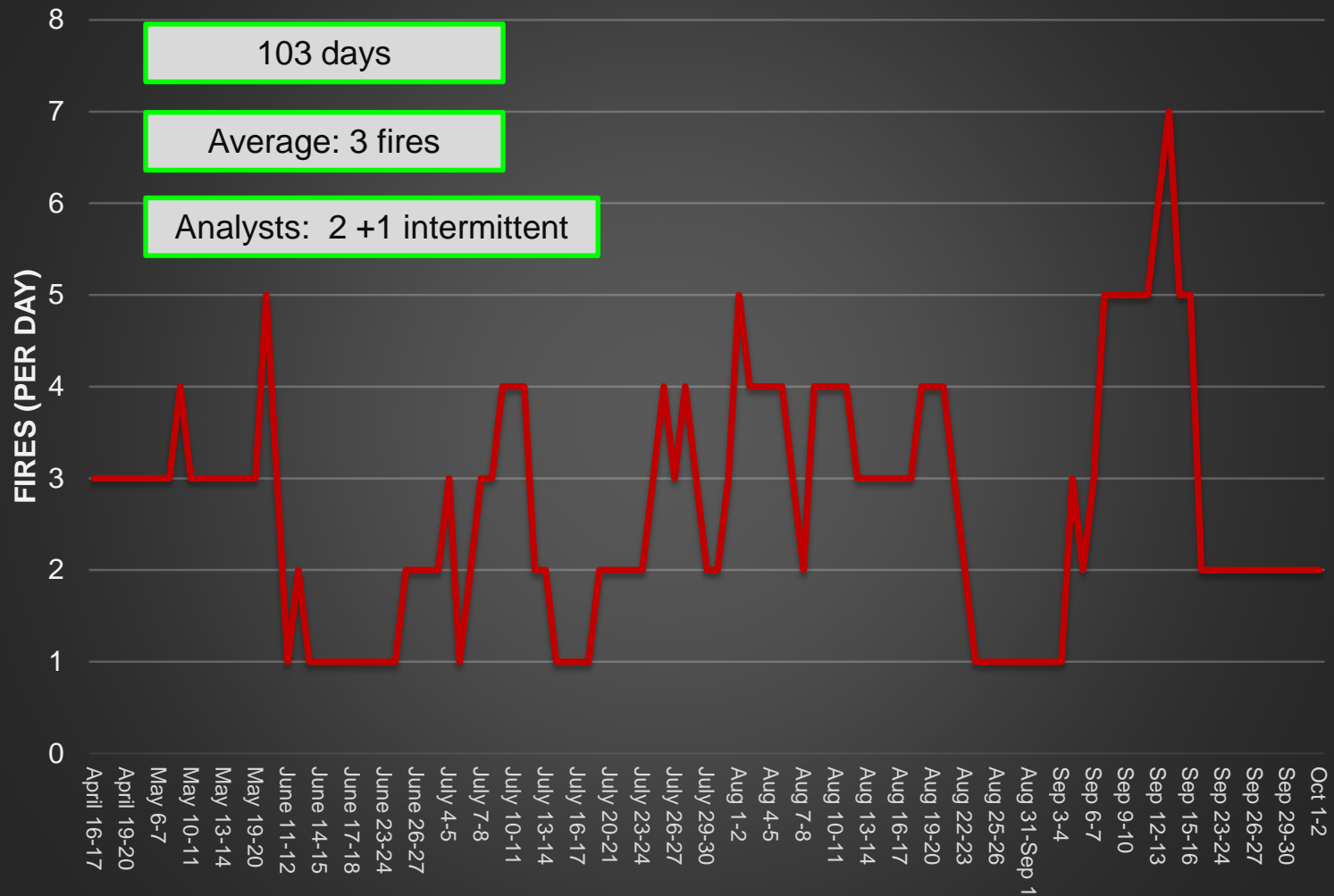
Aircraft3 2017 Utilization

2017 Aircraft3 Daily Support

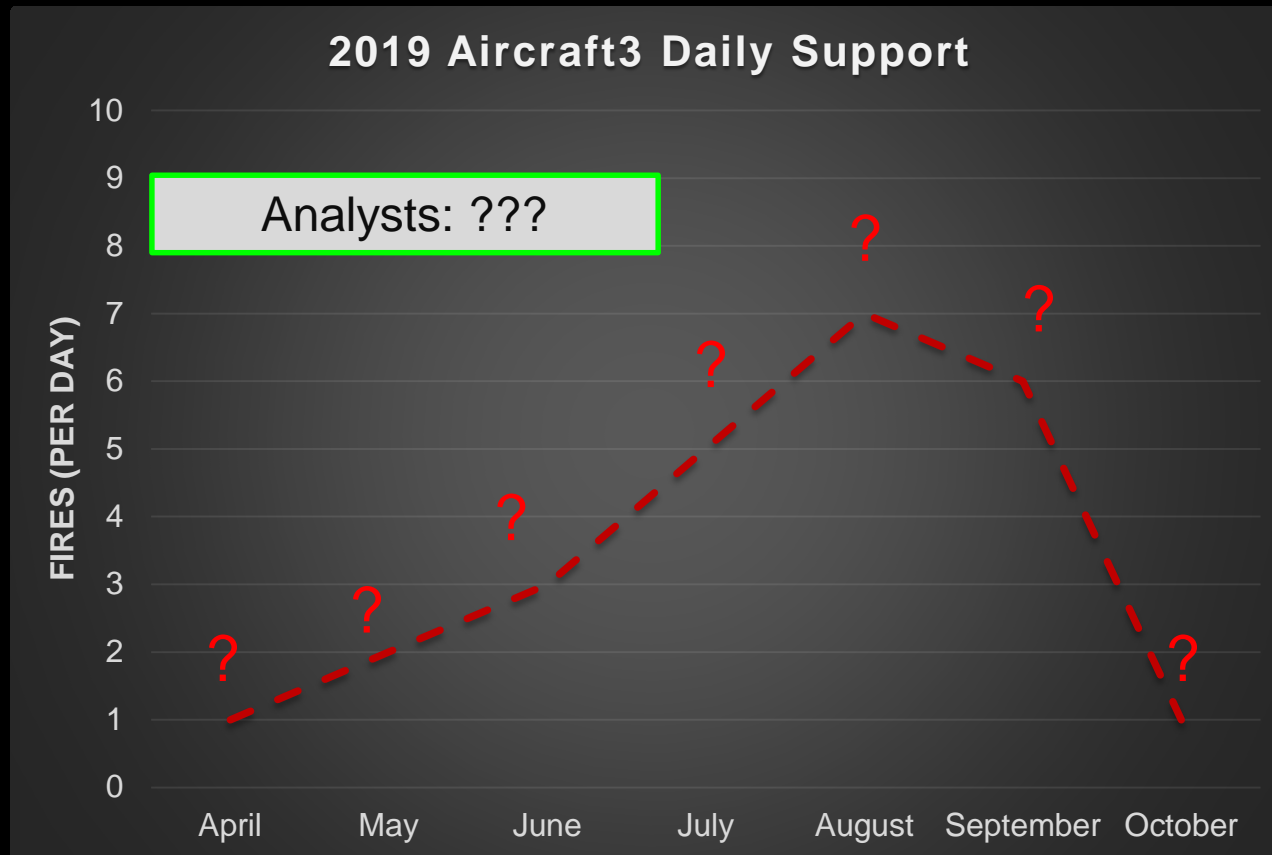


Aircraft3 2018 Utilization

2018 Aircraft3 Daily Support



Aircraft3 2019+ Utilization





Thanks

Comments/Questions?

GTAC



USDA Forest Service, Geospatial Technology Applications
Center,
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WWW: <http://www.fs.fed.us/eng/rsac/>