



RSAC Update on NIROPS- Related Activities

NIROPS 2015 Closeout Meeting

October 28, 2015



USDA Forest Service, Remote Sensing Applications Center,
FSWeb: <http://fsweb.rsac.fs.fed.us>
WWW: <http://www.fs.fed.us/eng/rsac/>

Presentation Outline

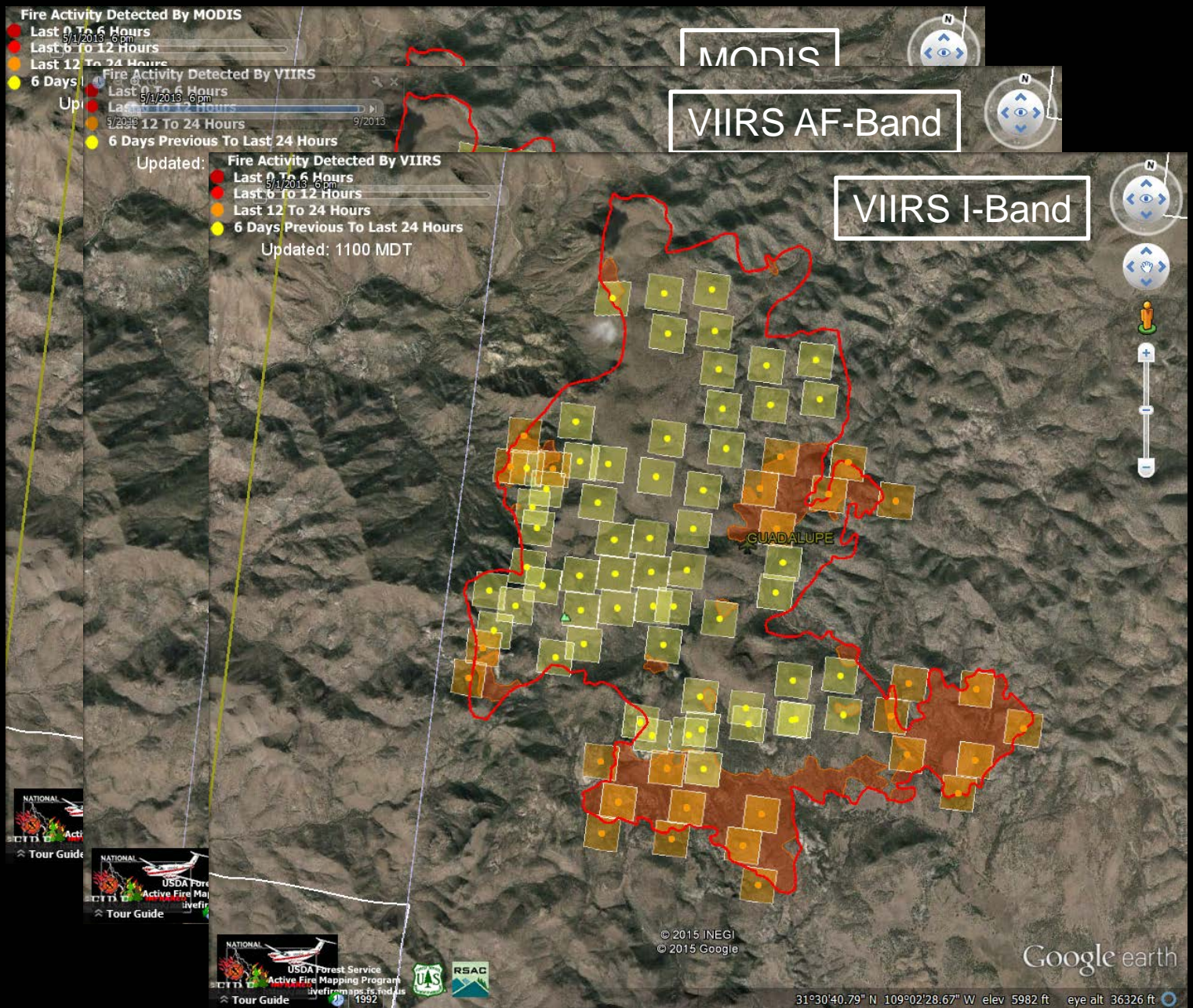
- Current & Future Sensors
 - VIIRS
 - TMAS and StareWAI
- NIROPS Website and Online Ordering
- 2015 Aircraft3/Firehawk Support Summary

VIIRS

- **VIIRS I Band Fire Detection GIS**

- VIIRS I Band fire detection data are generated using the University of Maryland VIIRS I Band fire detection algorithm with VIIRS near real-time direct readout data acquired by the USDA Forest Service Remote Sensing Applications Center, University of Wisconsin Space Science and Engineering Center, Oregon State University and the NASA Goddard Space Flight Center Direct Readout Laboratory. These data are provided as the centroids of the 375 meter fire detections and are a composite dataset compiled from the listed sources.





TMAS and StareWAI

- TMAS (Thermal Mapping Airborne Simulator)
 - Testing mode January 2016
 - More capable than WAI prototype evaluated in 2013
- StareWAI
 - Testing mode April 2016
- Both sensors could be available for prototype missions in summer 2016 if funding available

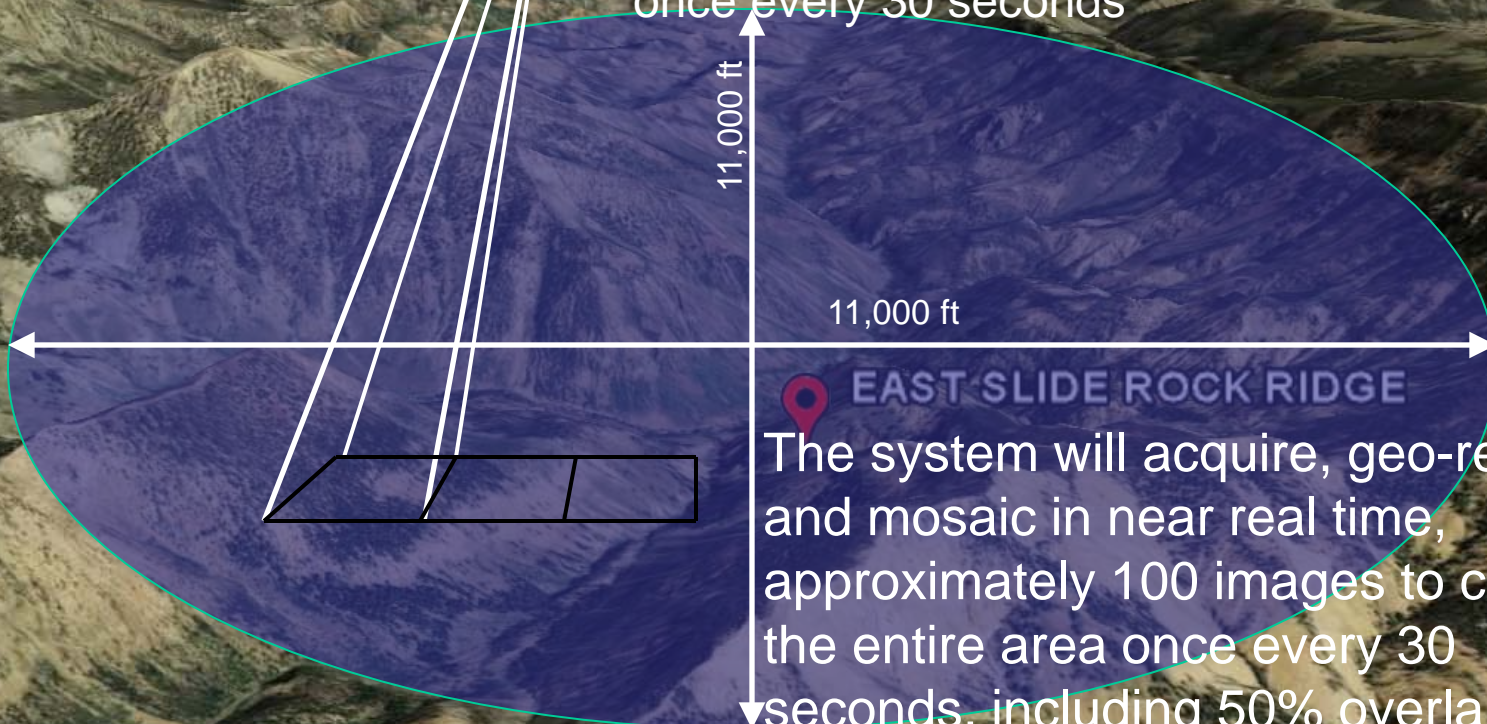


- Last 0 To 12 Hours
- Last 12 To 24 Hours
- 6 Days Previous To Last 24 Hours
- Incident Management Team - Type 1
- Incident Management Team - Type 2
- Incident Management Team - Other
- Fire Use Management Team

In this scenario the 0.6 milliradian 2 band LWIR/MWIR sensor will image a 5 foot square pixel from an altitude of 6000 feet. Each individual image frame contains 320 by 240 pixels.



As the UAS orbits at 6,000 Feet the Staring Wide Area Imager scans the entire 80 degree by 80 degree Field of Regard imaging the entire 11,000 ft X 11,000 ft area once every 30 seconds



EAST SLIDE ROCK RIDGE

The system will acquire, geo-rectify, and mosaic in near real time, approximately 100 images to cover the entire area once every 30 seconds, including 50% overlap on all image frames

NIROPS Website 2015

NATIONAL INFRARED OPERATIONS

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Serving the fire management community with Infrared Imagery since 1964.



[Download the NIROPS CDE KML](#)



NIROPS 3833 S Development Ave. Boise, ID 83705



NIROPS Website and IR Ordering Page

- Modifications for 2015 season
 - Reorganized and updated the “About Us” and “Documents” sections of the NIROPS website
 - Implemented Pilot/IR Technician PDF
 - The “processing” icon 
- Issues during 2015 season
 - It got really slow in mid-August!
 - Number of requests
 - Active Fire Maps website activity
 - GeoMac perimeters not displaying in Google Map box
 - Inconsistent rounding of scan box minute coordinates
- Modifications for 2016 season?
 - Submit your requests soon so we can compile and prioritize a list for the web developers

NIROPS Website Usage Summary for 2015

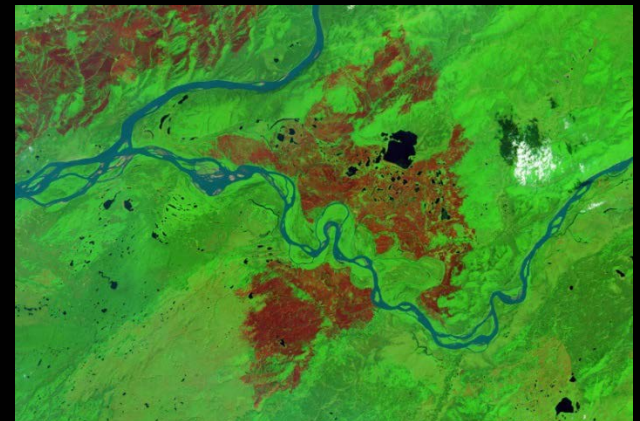
June 1 – October 19

- Items of interest:
 - 20, 651 visits to the website; 5, 077 unique visitors
 - 356, 541 page views
 - 22% of visits were from mobile devices
 - Tablets – 10%
 - Smart Phones – 12%

Year	Visits	Unique Visitors	Page Views	Smart Phone(%)	Tablet(%)
2015	20,651	5,077	356,541	12	10
2014	17,076	5,064	260,912	12	15
2013	21,314	7,205	274,625	9	10
2012	22,089	8,053	300,319	6	3

Aircraft3 2015 Summary

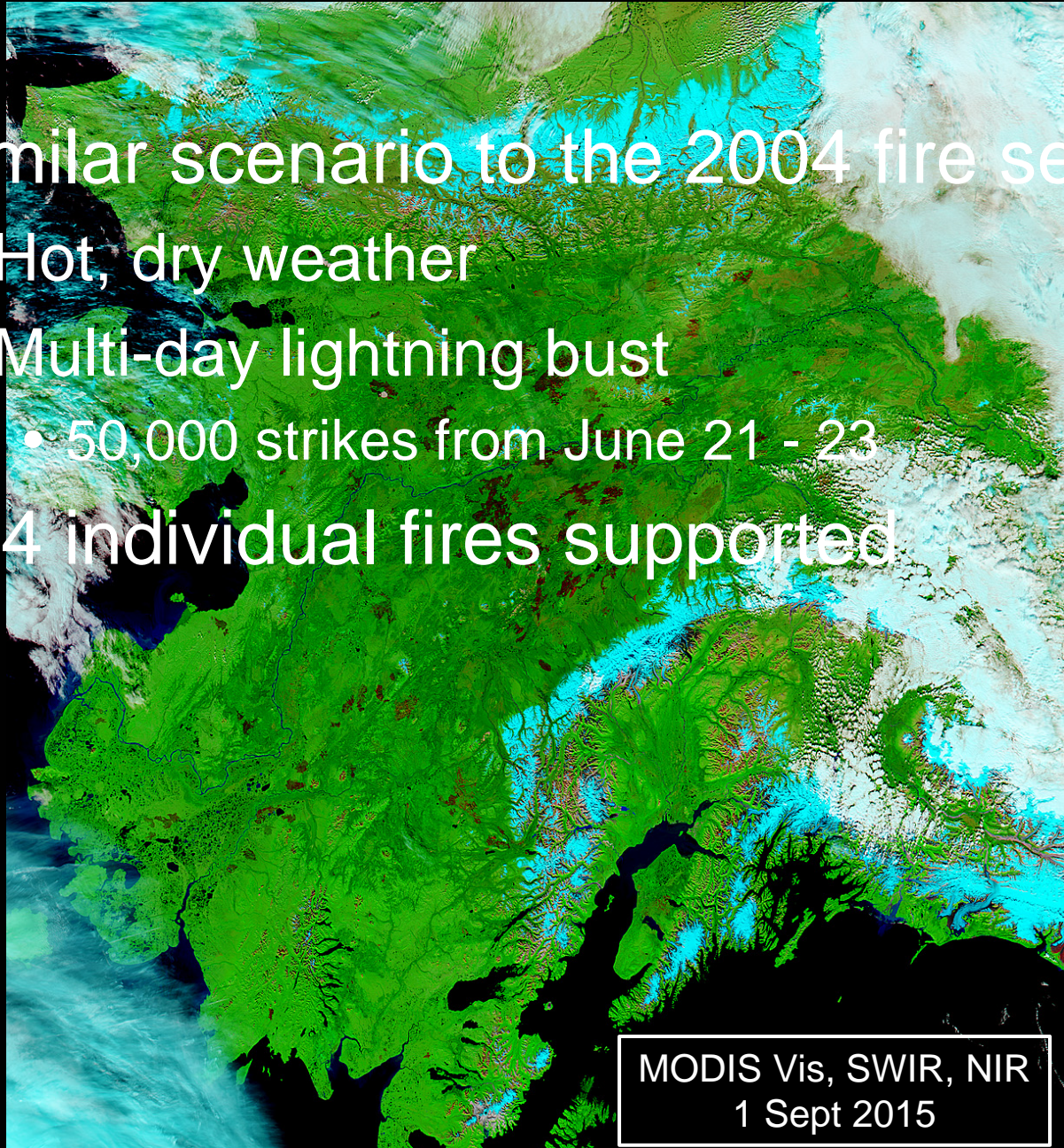
- Incident support started on June 24
 - Multiple Alaska fires
- Shifted to CONUS support on August 5
 - South Ops fires
- The majority of support requests were for Alaska GACC, North Ops, and Northwest GACCs
- Incident support ended on September 20
 - Washington State fires



24 July 2015 Landsat 8 OLI Bands 6,5,3
Hay Slough & Harper Bend Fires

Aircraft3 2015 AK GACC Support

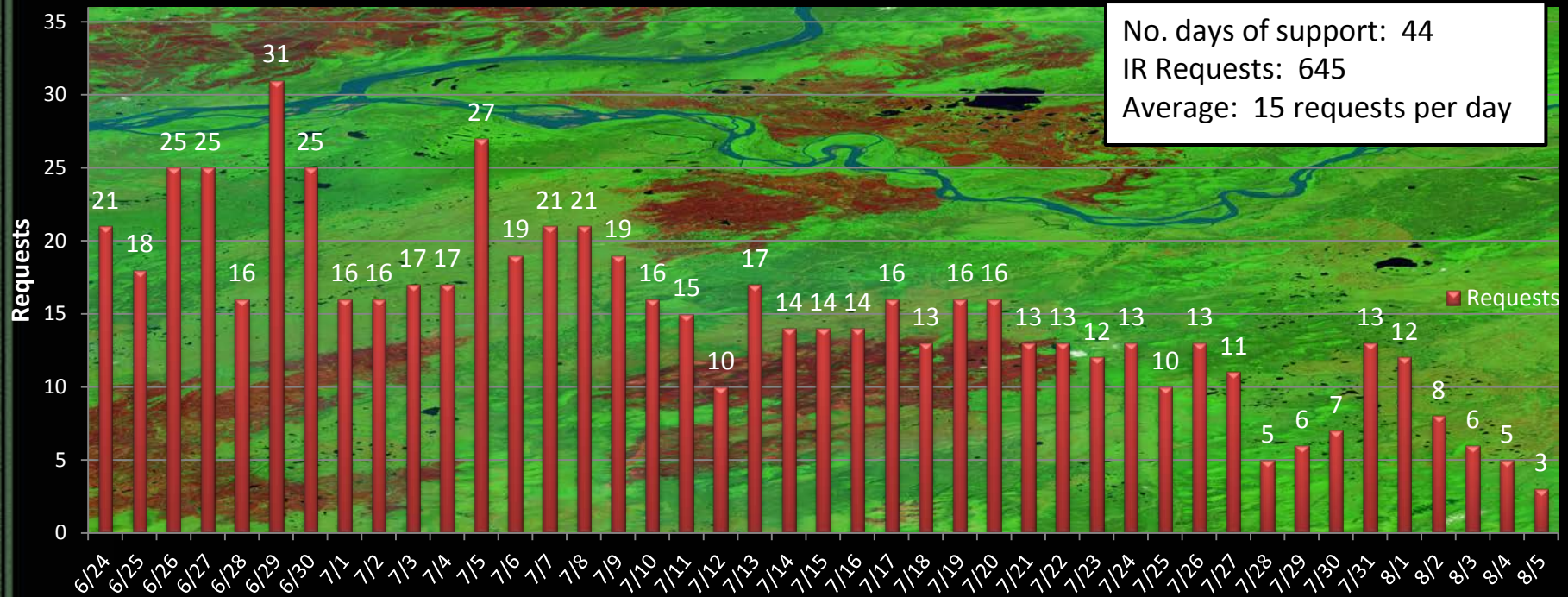
- Similar scenario to the 2004 fire season
 - Hot, dry weather
 - Multi-day lightning bust
 - 50,000 strikes from June 21 - 23
- 114 individual fires supported



MODIS Vis, SWIR, NIR
1 Sept 2015

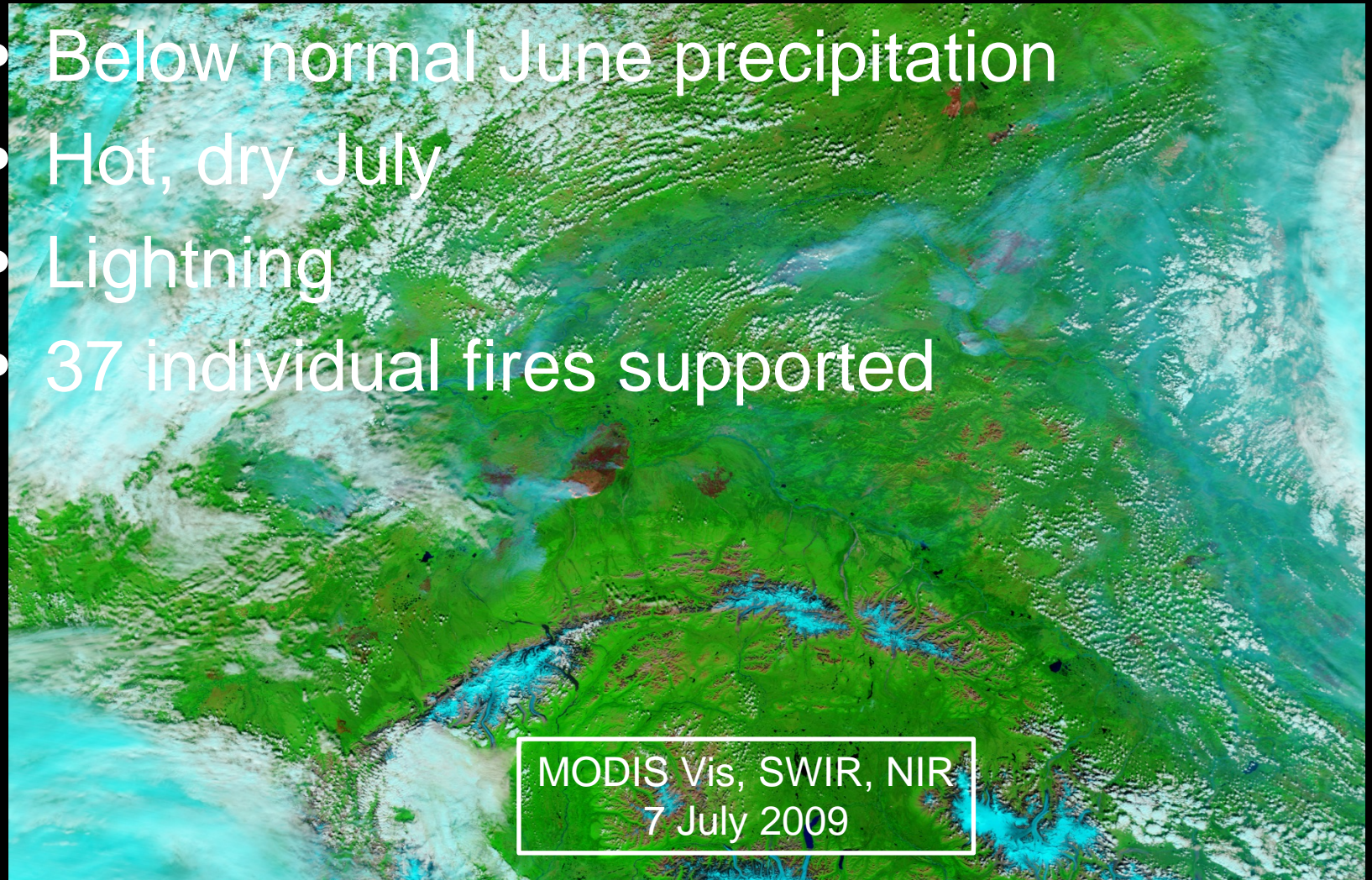
2015 Alaska GACC Support

Firehawk/Aircraft3 Support: 6/24 - 8/06/2015



2009 Alaska GACC Support

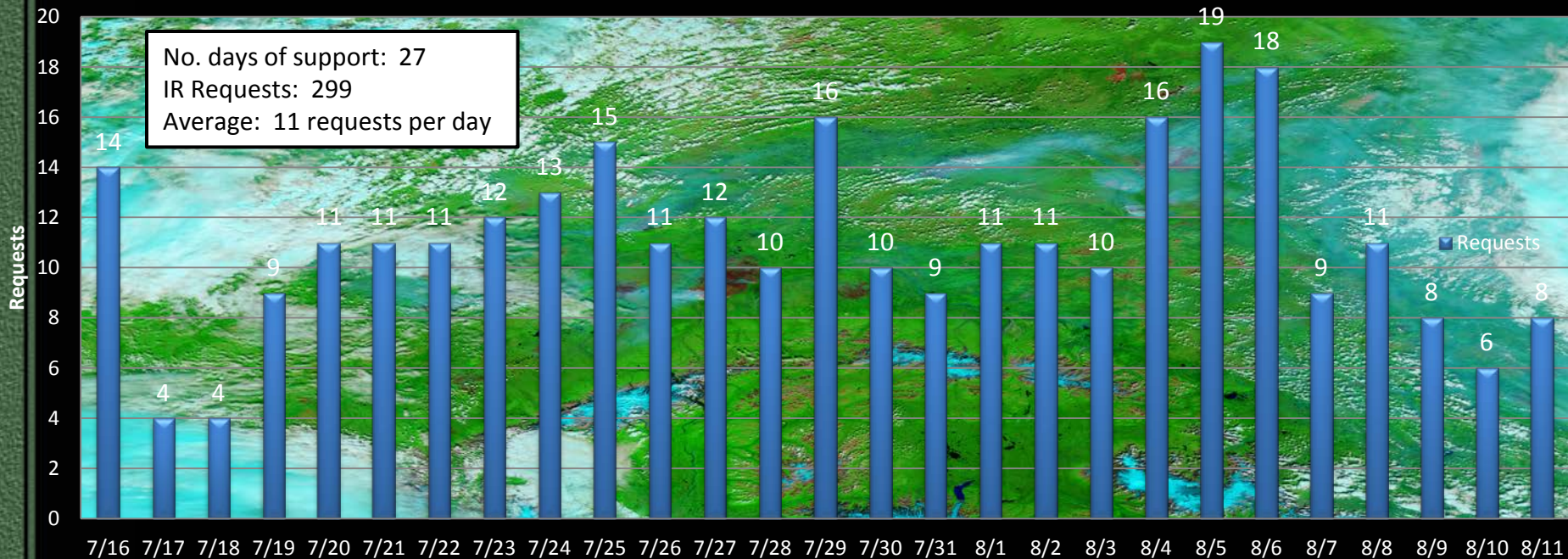
- Below normal June precipitation
- Hot, dry July
- Lightning
- 37 individual fires supported



MODIS Vis, SWIR, NIR
7 July 2009

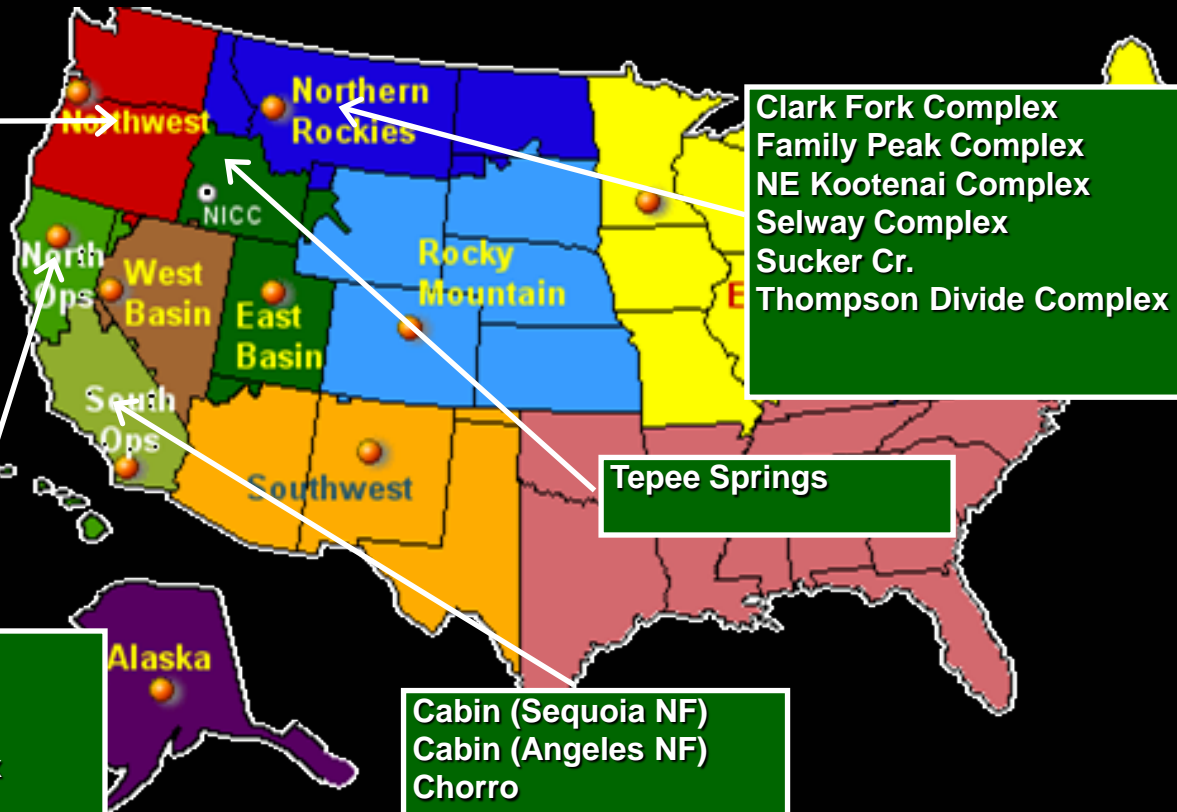
2009 Alaska GACC Support

Firehawk/Aircraft3 Support: 7/16 - 8/11/2009



Aircraft3 2015 CONUS GACC Support

Canyon Cr. Complex
Cougar Creek
Goode
Kaniksu Complex
Kettle Complex
Meeks Table
National Cr. Complex
North Star
Tunk Block
Wolverine



Clark Fork Complex
Family Peak Complex
NE Kootenai Complex
Selway Complex
Sucker Cr.
Thompson Divide Complex

Tepee Springs

Butte
Elk
Fork Complex
Gasquet Complex
Horse
Mad River Complex
Nickowitz
South Complex
River Complex
Route Complex

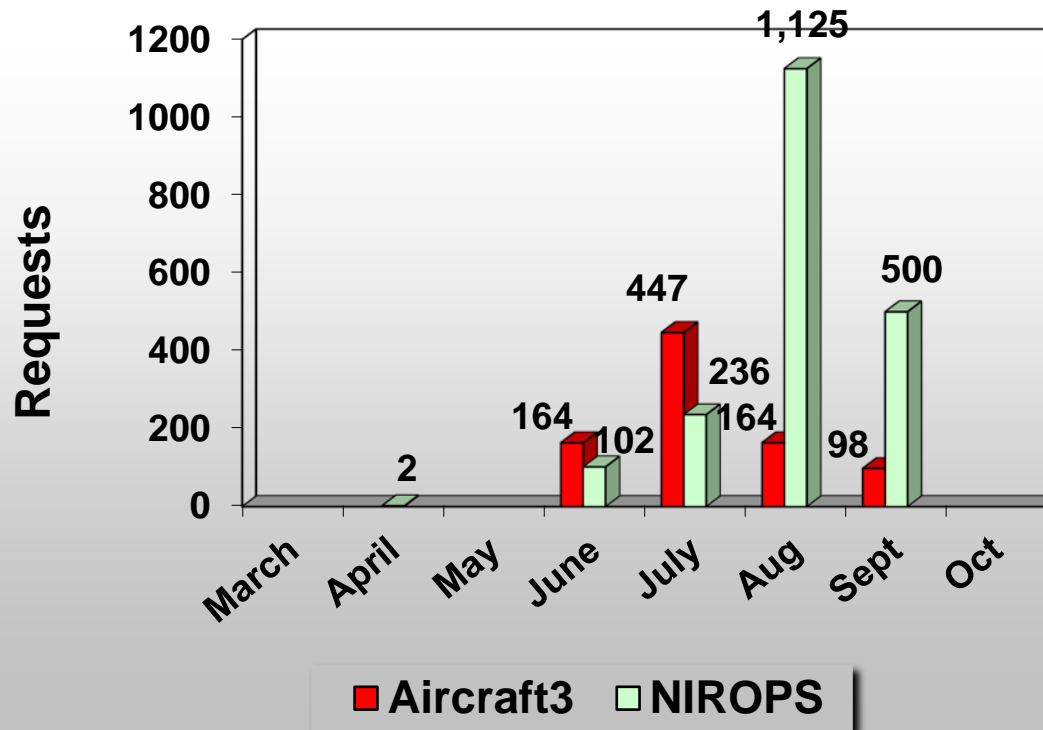
Cabin (Sequoia NF)
Cabin (Angeles NF)
Chorro
Cuesta
Rough
Tenaya
Walker

Aircraft3 2015 GACC Support

Geographic Area	No. of Fires	No. of Support Requests	UTF-Weather	UTF-Tech. Issue	Acres
AK	114	644	117	38	3,720,927
GB	1	4	0	3	95,709
NO	18	91	0	17	325,694
NR	22	28	4	10	147,354
NW	19	41	5	11	735,140
RM	0	0	0	0	0
SO	7	39	0	6	167,145
SW	0	0	0	0	0
SA	0	0	0	0	0
TOTAL	181	847	126	85	5,191,969

(Through October 19, 2015)

Aircraft3 2015 Support to NIROPS



Apr: n/a
May: n/a
Jun: 61%
Jul: 65%
Aug: 8 %
Sep: 19%
Oct: n/a

Through October 19, 2015

29.5% of the AK and CONUS requests were assigned to Aircraft3;
7.3% of the CONUS requests were assigned to Aircraft3



Thanks

Comments/Questions?



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