



National Infrared Operations

# Pioneer Fire – Boise NF

July 18, 2016 - Present

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# Statistics

July 18, 2016–November 1, 2016

**Largest Fire in the US this year – 188,404 acres**

Greatest single day acreage gain – on 8/29/16 29,176 acres

Currently 85% contained – estimated containment November 15, 2016

Cost of \$96 million, plus BAER and Restoration costs

**Long-term Support – July 17<sup>th</sup> to November 2016 (106 days)**

NIROPS missions 7/23-9/19, 9/25 & 9/27-29 (63 days)

Seven IRINs supported the missions – with seven transitions

Eight Incident Management Team supported the incident – with ten transitions

One UTF for Weather(9/18/16) over the length of the incident

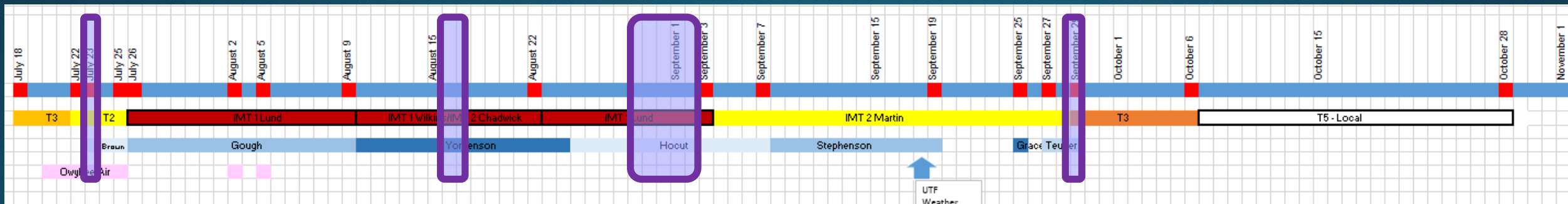
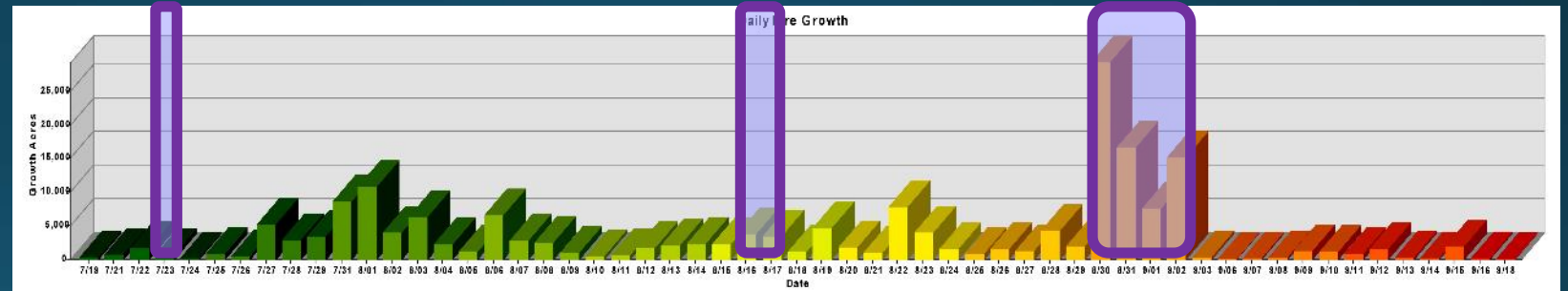
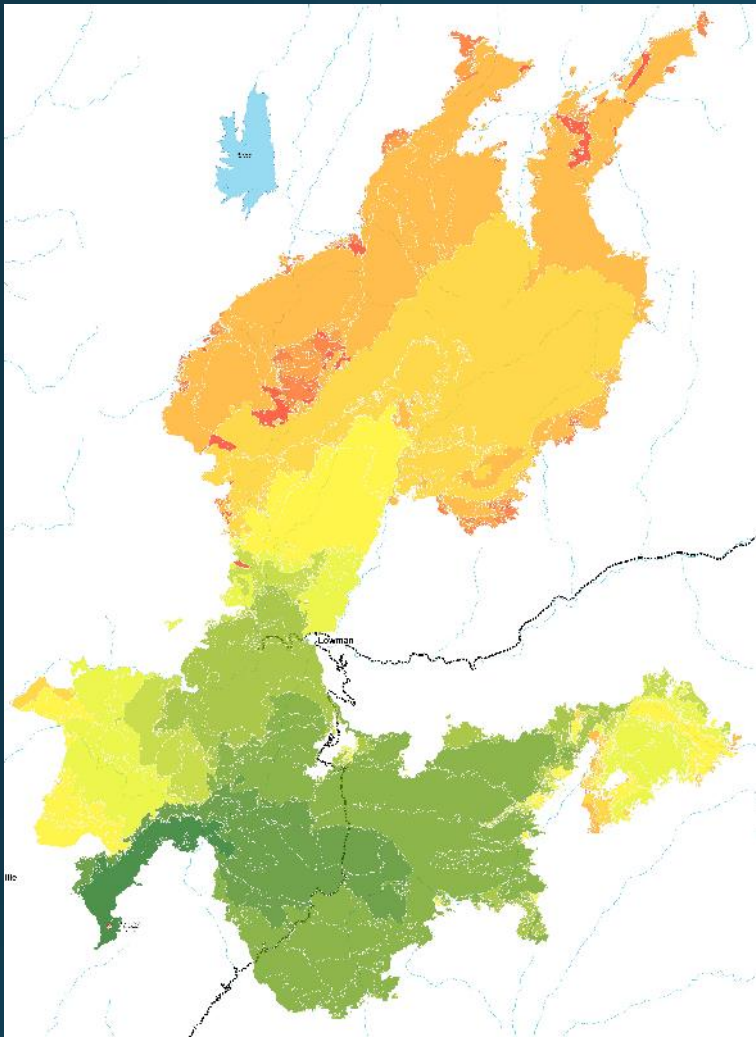
# Snap Shots in Time

July 23 – Owyhee Air Research and NIROPS

August 16-17 – DRTI (plus other day not highlighted)

August 29-Sept. 2 – Largest Fire Growth days

September 29 – Final NIROPS



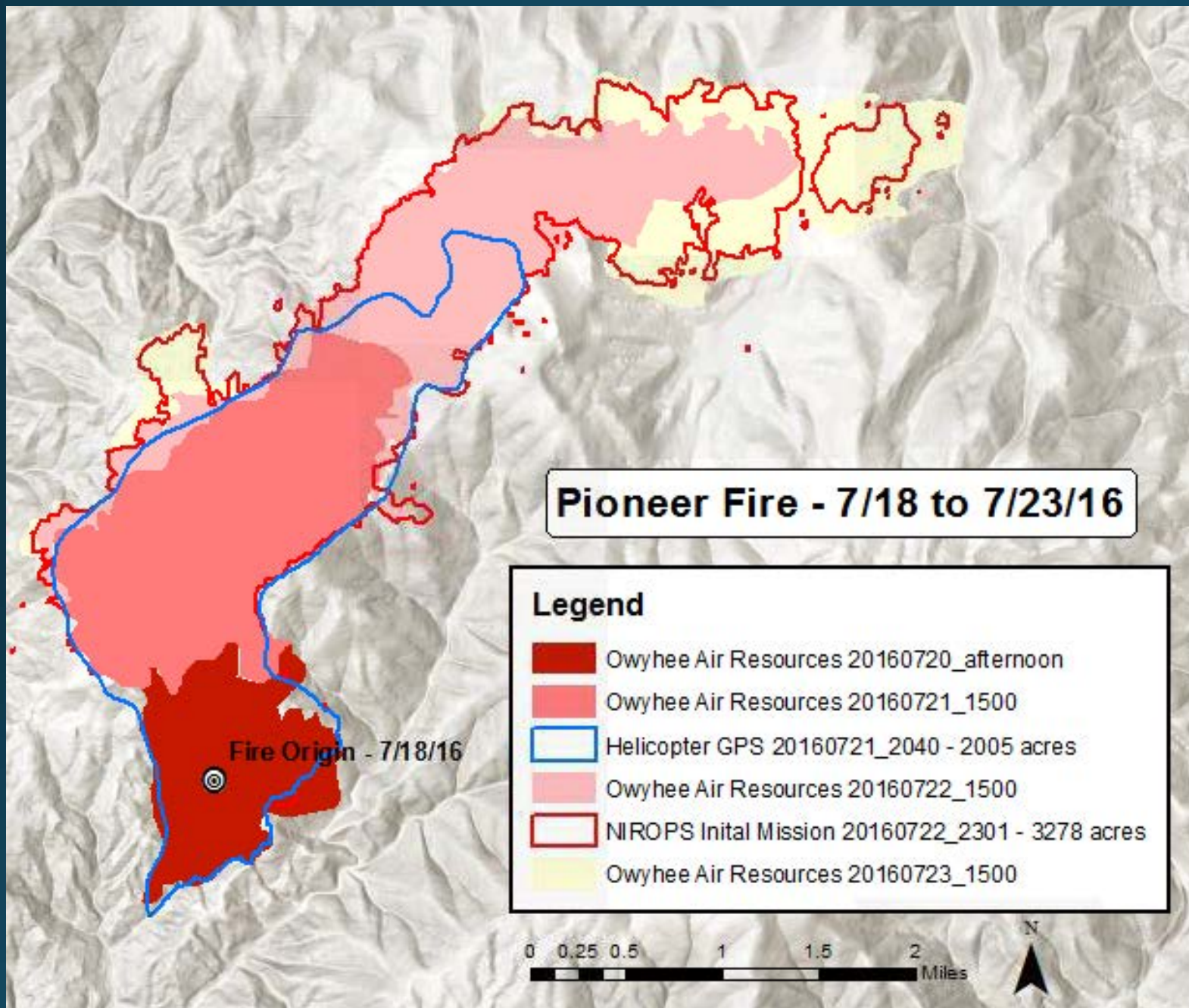
## Early Part of the Pioneer Fire

Type 3 organization collected daily GPS and didn't feel the need for NIROPS at this stage of the fire.

Owyhee Air Research flew missions on 7/20, 21, 22, 23 (plus other later dates) – This is the 2<sup>nd</sup> year for the vendor.

District AFMO provided a perimeter collected from ground and aerial resources to the IRIN

NIROPS Initial Mission 7/22 – ordered with the arrival of the Type 2 Team

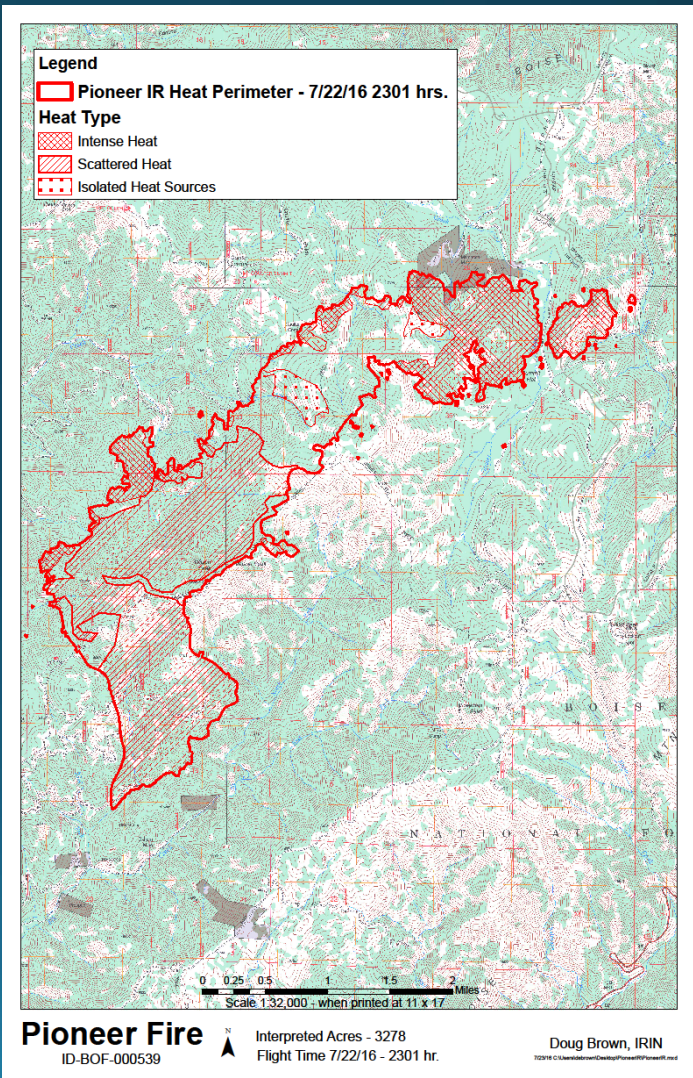
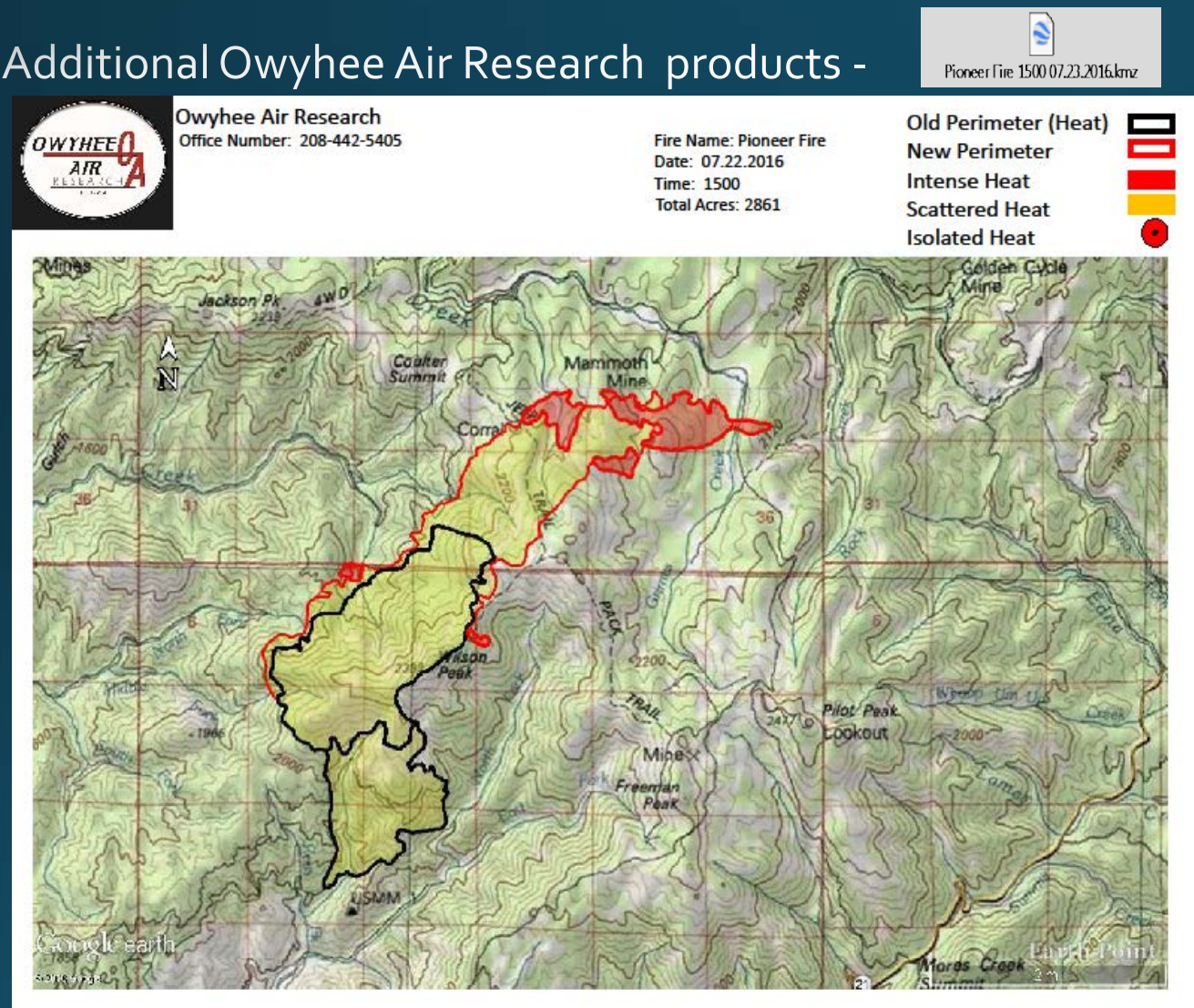




# Comparision between Owyhee Air Research (7/22/16 @1500) & NIROPS Products (7/22/16 @2301) Approximately 8 hours time difference

IRIN used the 7/21 GPS file as a starting point

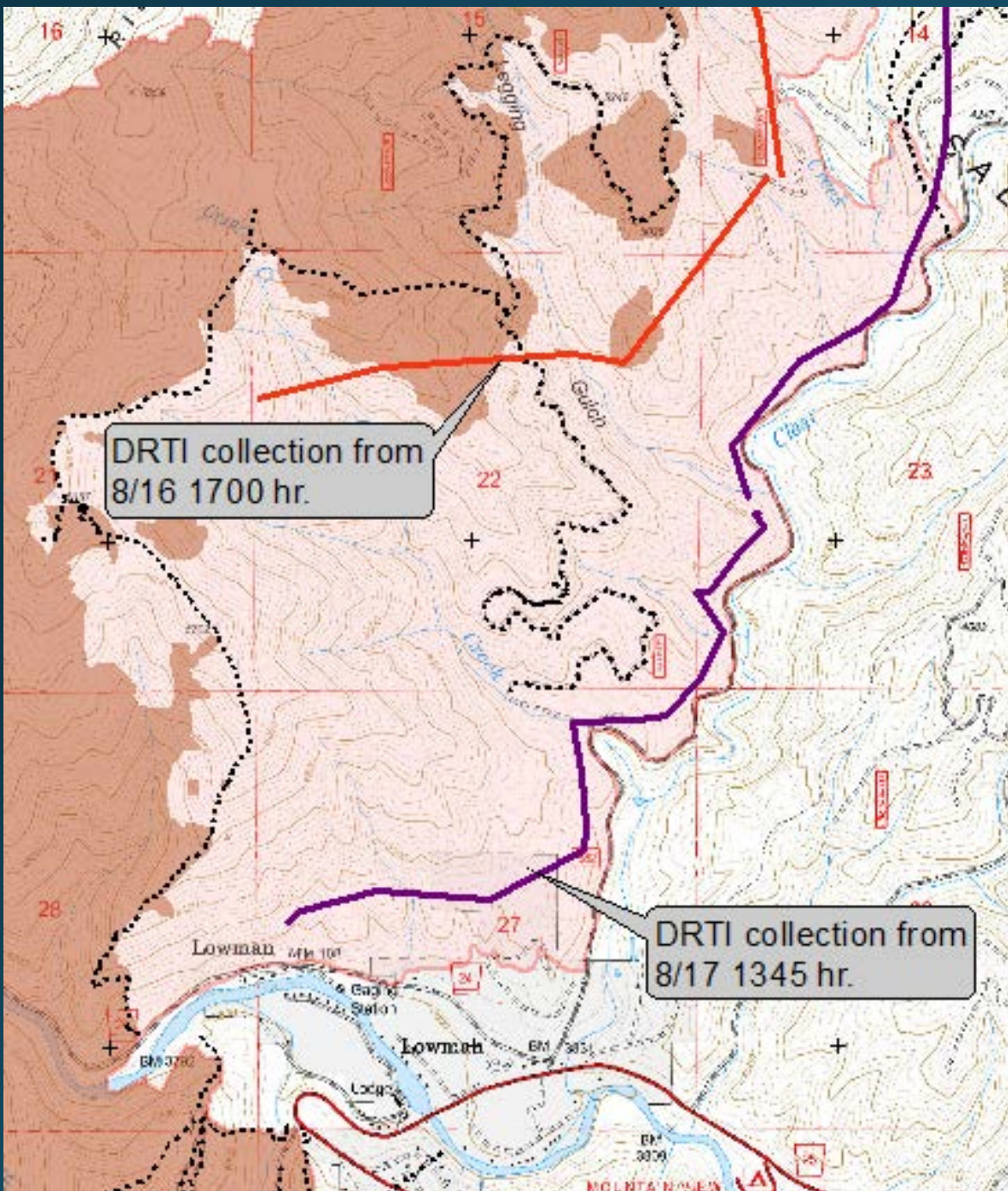
Additional Owyhee Air Research products -





## Alternative IR Sources

- **DRTI – Distributed Real-Time Infrared (DOD)**
  - Sensors - MX-15 EO/IR & PAS-23 MTM – mini thermal monocular
  - Platform operates 10+ K over TFR, 4 ½ hour sortie duration
  - Real-time downlink – off-site processing
  - 2015 deployment included Joint Terminal Attack Controllers (JTAC) with tablets and communication
  - 2016 season was a demo that chased big fire
  - Pioneer experience – Search, perimeter collections
- **Garden Valley Helitack – Bullard/GPS**
  - Local resource on the Boise N. F.
  - Six missions – Division level missions associated with mop-up





# Large Fire Growth Days

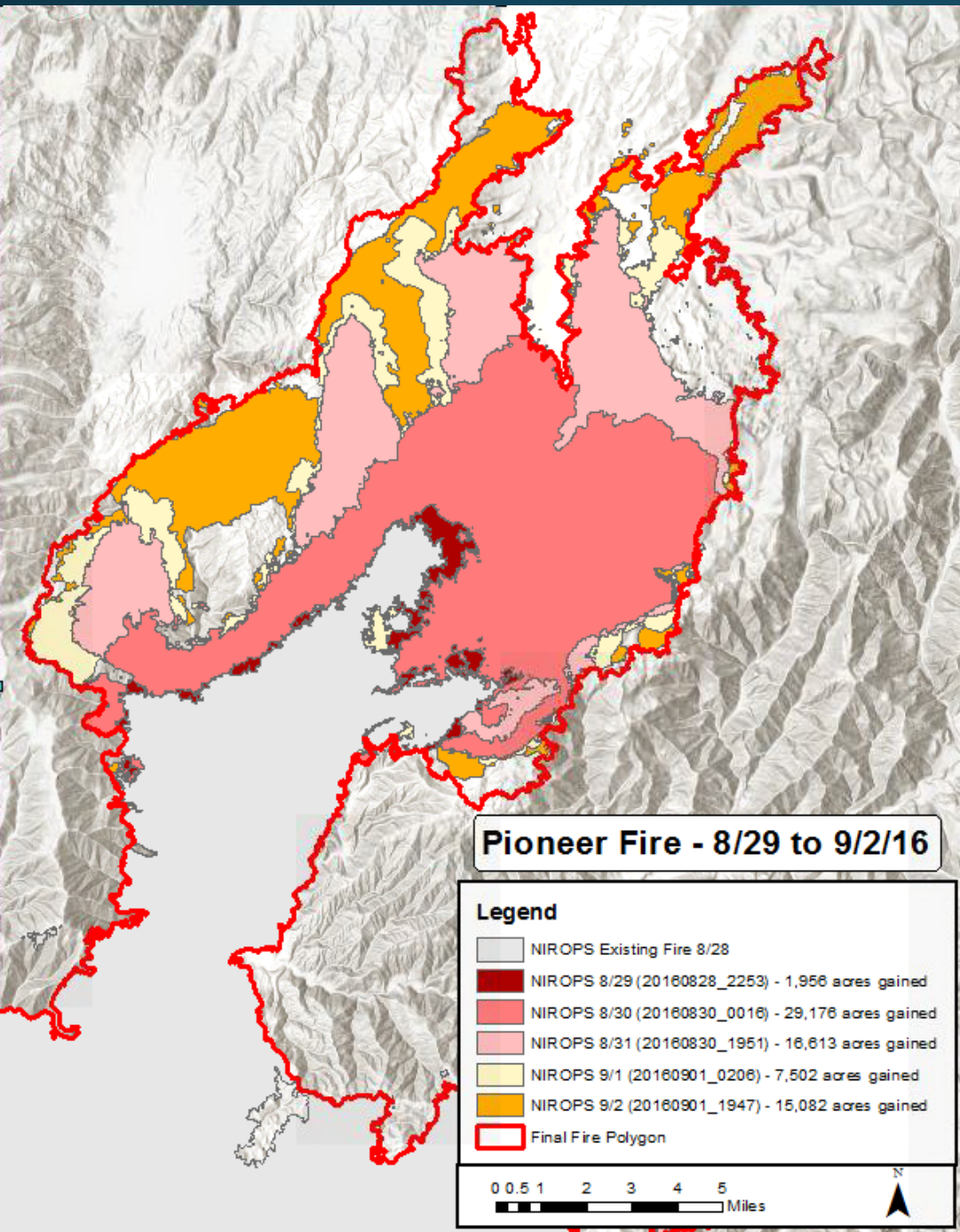
IRIN – Tammy Hocut

August 30 – 29,176 acres

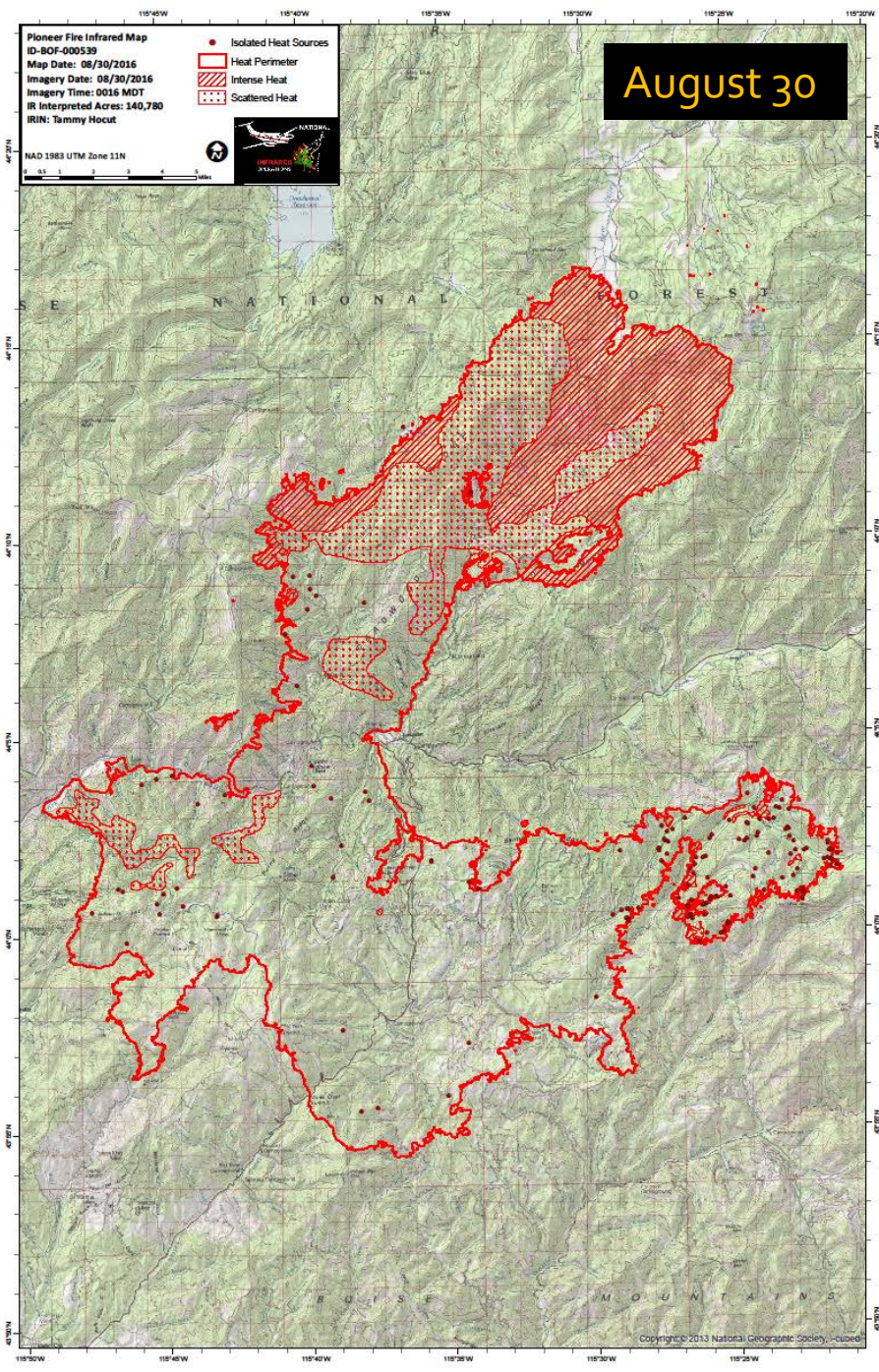
- SITL warned IRIN about large fire growth in the early evening
- Imagery time 0016 – Needed at 0530 → Processing time 5 ¼ hours
- IRIN provided preliminary Heat perimeter with final products later

August 31 – 16,613 acres

- SITL warned IRIN about large fire growth in the early evening
- Imagery time 1951 – Needed at 0530 → Processing time 5 ¾ hours
- IRIN provided preliminary Heat perimeter with final products later







# Large Growth Days

August 28 – 4,200 acres

August 30 – 29,200 acres

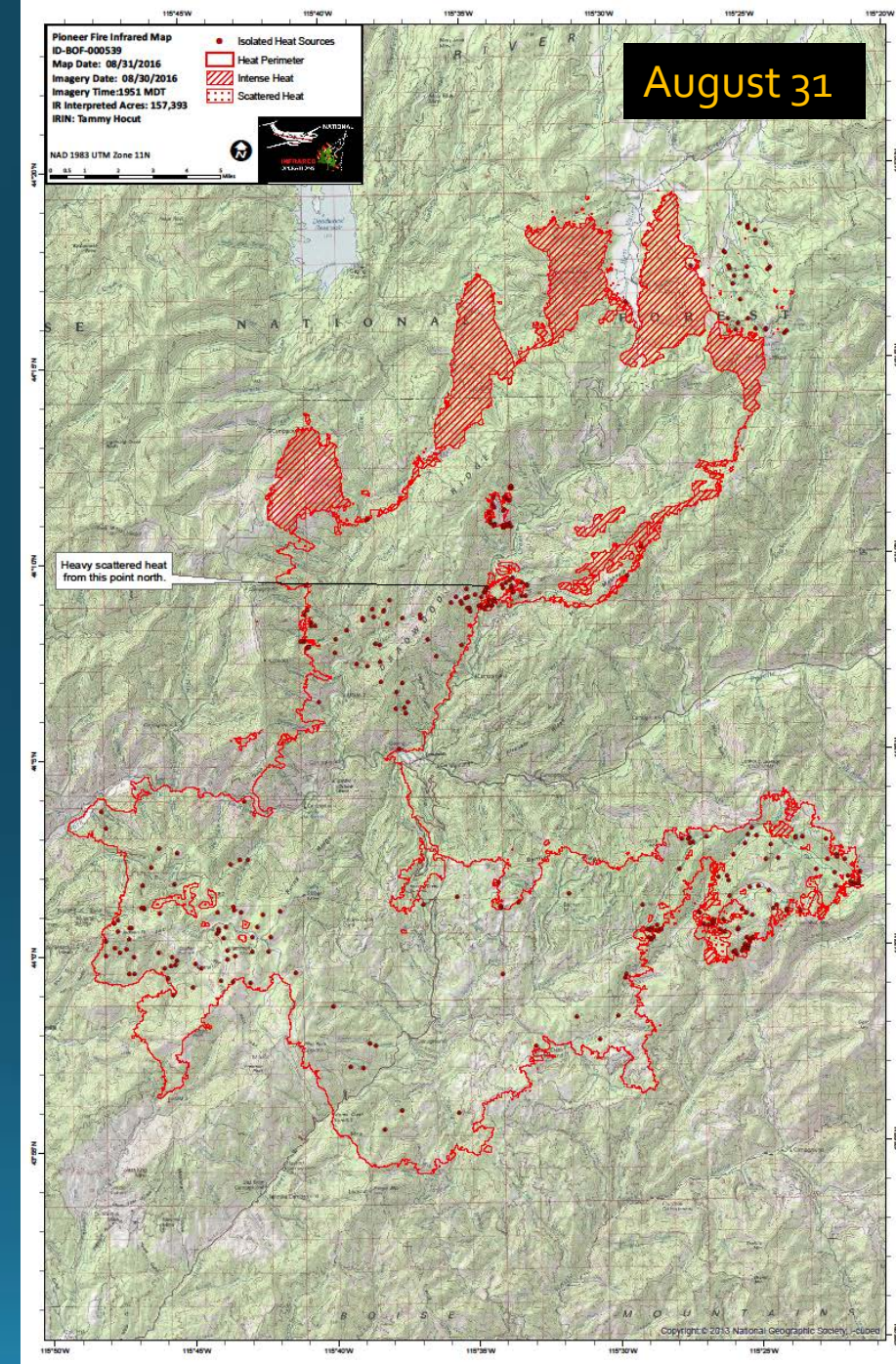
August 31 – 16,600 acres

Sept. 1 – 7,500 acres

Sept. 1 – 15,100 acres

Total Acre change 8/26 – 9/7 – 77,000 acres

8/26	104,263	1,517
8/27	105,475	1,212
8/28	109,648	4,173
8/29	111,604	1,956
8/30	140,780	29,176
8/31	157,393	16,613
9/1	164,895	7,502
9/2	179,977	15,082
9/3	180,300	323
9/4	181,065	765
9/5	181,145	80
9/6	181,174	29
9/7	181,297	123





## MMA on the Junkins Fire, Pike and San Isabel N. F. – October 17 to November xx, 2016

- Sensors - MX-15NDi (EO Wide, EO Narrow, IR)
- Platform operates up to 28 K over TFR, best at 10 to 15 K AGL
- Real-time downlink – off-site processing
- Junkins experience

## MMA Videos – Spot after wind event with EO



## MMA Videos – Dozerline and 387 Corridor



## MMA Videos – Div. C Spot





## MMA Videos – Div. C Spot



# Issues & Concerns from the Pioneer incident

## Proximity to Boise brings pluses and minuses

- Resources just show-up – Research, Contractors
- NIROPS aircraft frequently RON in Boise – causing early and late missions

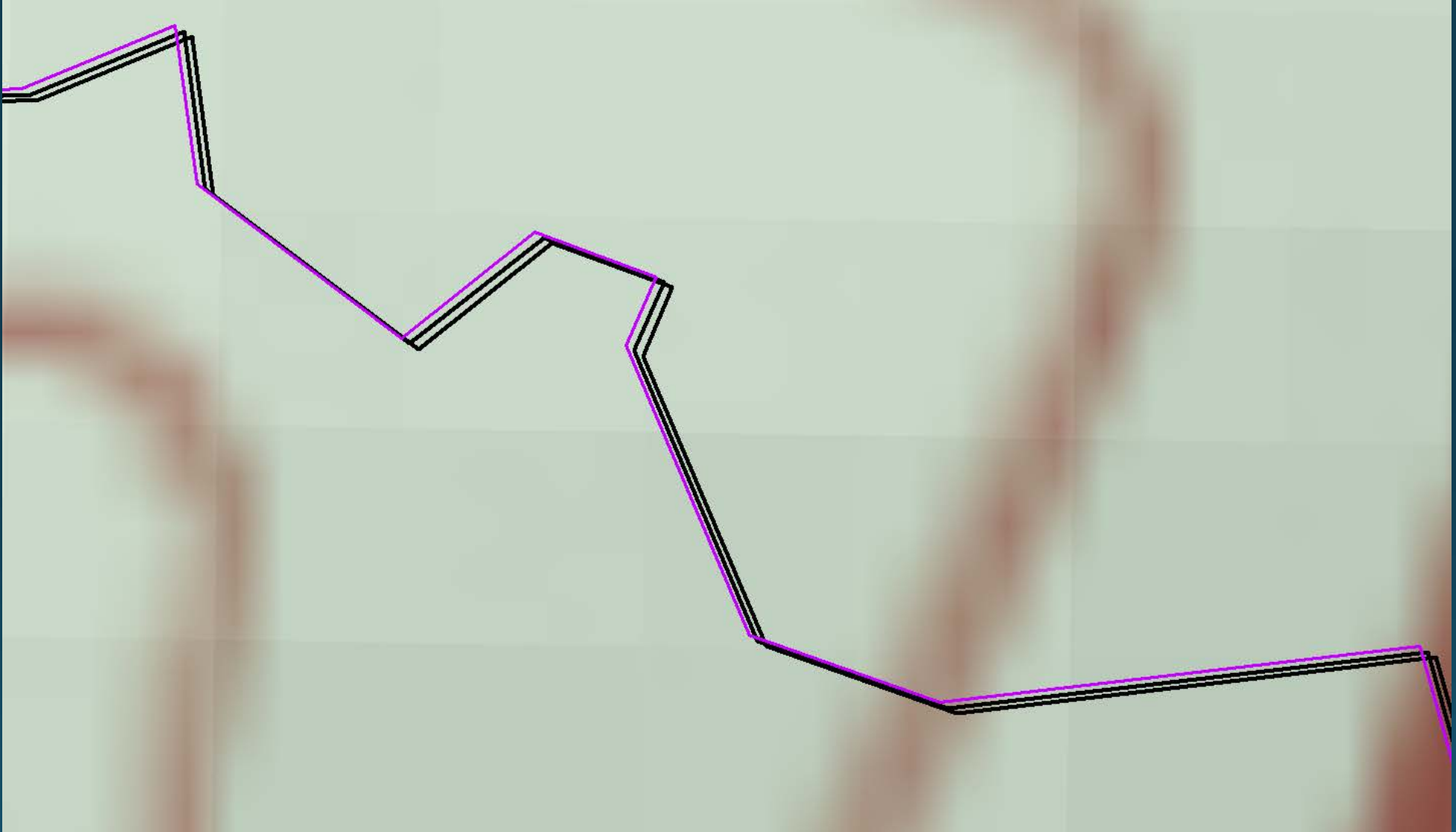
## Large fire growth presents challenges

- Scan boxes change late in the day – NIROPS adjusted very well
- NIROPS product extents change – IRINs adjusted well
- Acceptance by Teams of partial products – followed later by complete products
- Accuracy/Precision vs Timeliness – repeatedly coached IRINs to generalize
  - On a 100,000 acre fire, IR maybe the only consistent intel available
  - Heat perimeter creep – Database issues

## Communication

- Good work in both directions – Scan order page, emails, texts & telephone
- Great support from National – Regional could be improved

Sticky shift



This is where we are now – 10/18 slide South Fork Payette River





# Questions / Discussion

