



NORTH WEST GROUP

2015 NAIP SEASON

Arkansas, Arizona, Colorado, Idaho, Louisiana, Minnesota, Montana,
Nevada, North Dakota & Washington

Team

- North West:
 - Contract management
 - Project management
 - Acquisition
 - 4 Cessna Conquests
 - 1 Reims F406
 - 10 ADS100's
 - Data QC (NWGL+Fugro)
 - Data archival
 - Processing
 - Delivery
 - Warranty fulfillment
 - EAWS
- Fugro Horizons:
 - Acquisition
 - 3 Cessna Conquests
 - 2 King Air B200
- Compass Data:
 - Survey control

Data Acquisition (Summary)

- **66,137 DOQQ's**
 - 834 not acquired due to weather, snow, smoke, loss of solar: deferred to spring 2016
 - 237 not acquired in NV due to restricted MOA
- **April 29th to November 12th**
 - Total aircraft days on site 1335
 - Flight days 585, 616 Recording sessions
- **Season extensions:**
 - ID (Weather, Smoke)
 - AZ (Mexico Border, Military)
 - AR (Weather)
 - CO (Weather)
 - NV (Military, Smoke)
 - LA (Flooding)
 - MT (Weather, Snow, Smoke)
 - WA (Weather, Snow, Smoke)
 - ND (Weather, Late Award)
 - MN (Weather)

Resources

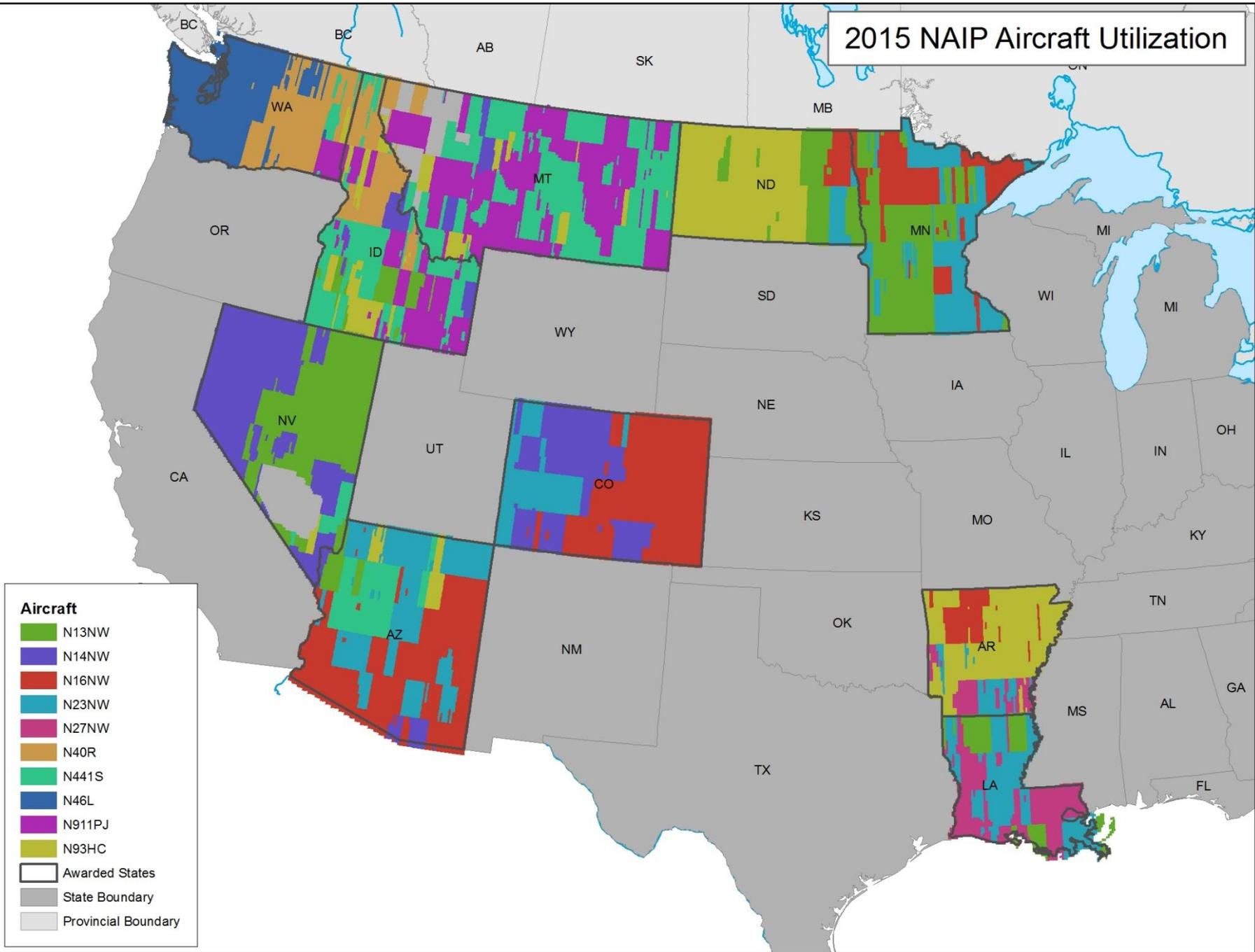
- In 2014 NWG acquired 50,488 DOQQs with 7 aircraft
- 2015 capacity was increased to 10 aircraft for 66,137 DOQQs
- 42% increase in collection capacity for 31% increase in area

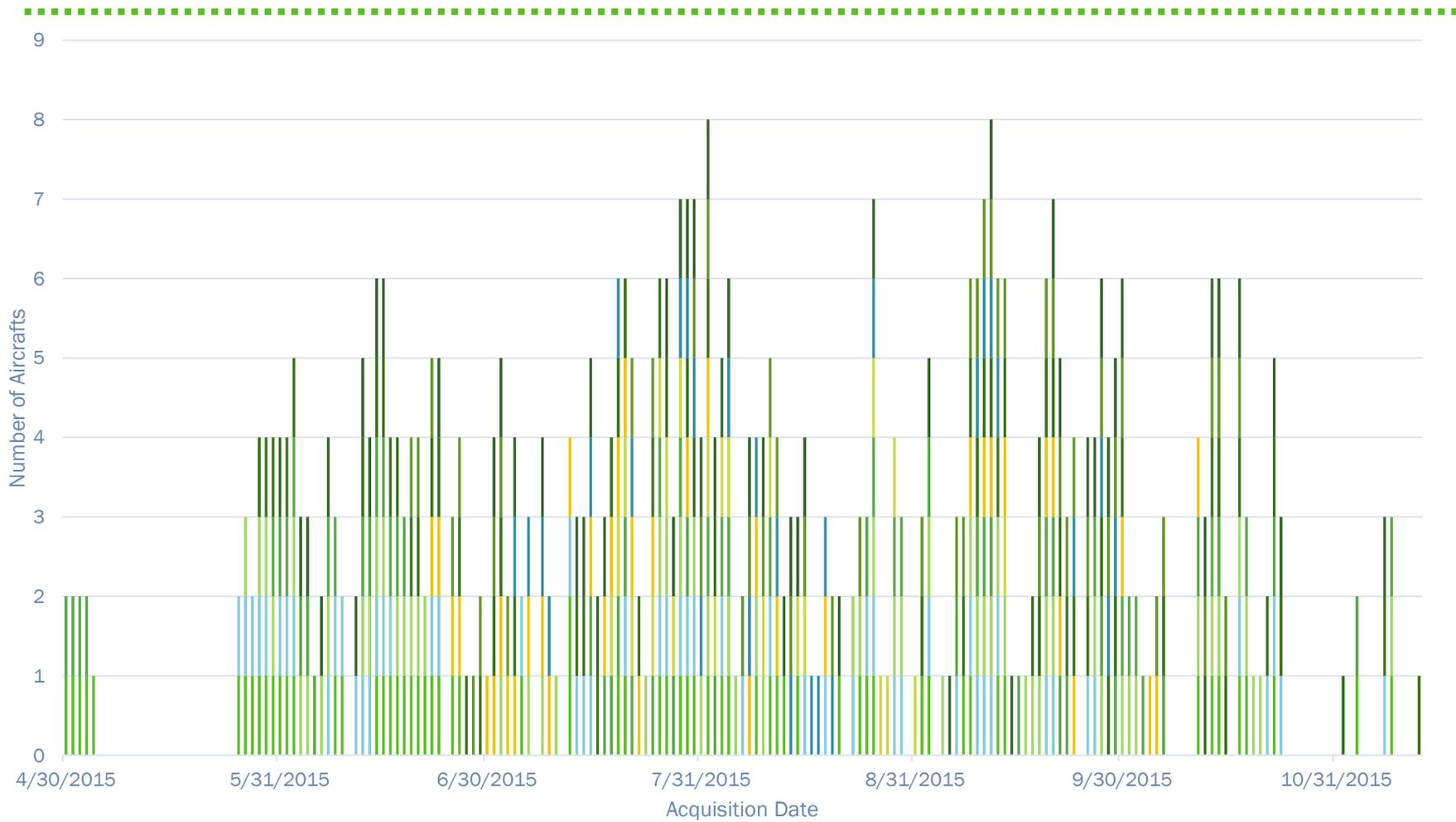
This was a very challenging year
for fires, flooding, and snow

Processing

- **Added an Atlanta processing office:**
 - 5 technicians out of team of 13
 - Working on DEM and final QC
 - Goal to get more of the “HxIP” process done inside NAIP;
 - NAIP gets benefit from this; eg: DEM improvements
- Will continue in 2016, likely with larger staffing

2015 NAIP Aircraft Utilization

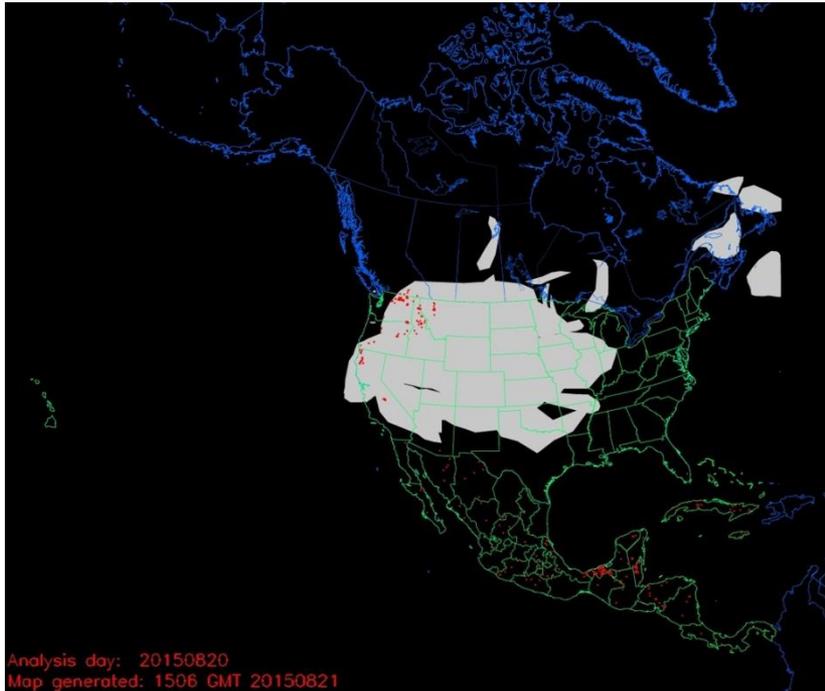




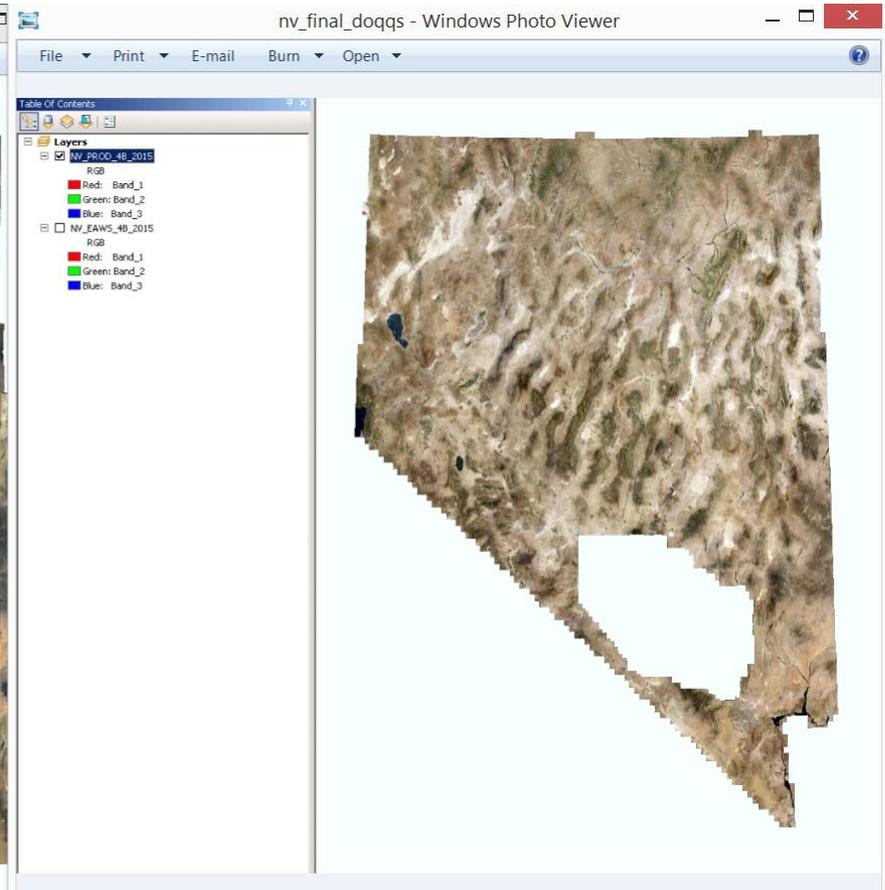
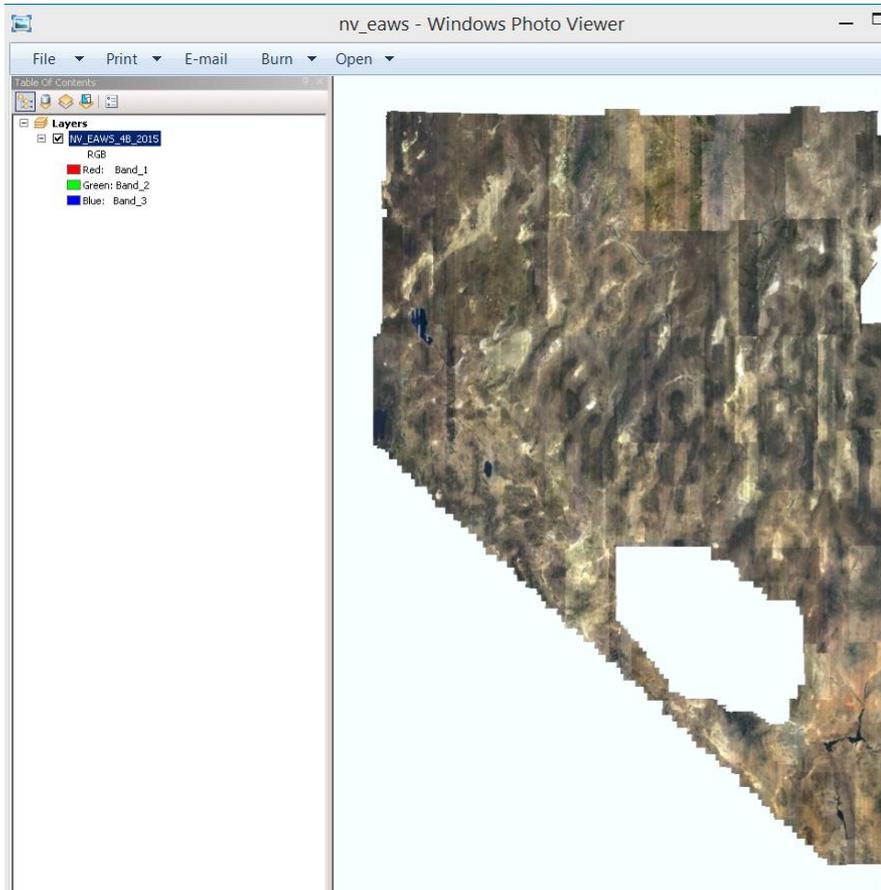
-
 N13NW
 -
 N14NW
 -
 N16NW
 -
 N23NW
 -
 N27NW
 -
 N40R
 -
 N441S
 -
 N46L
 -
 N911PJ
 -
 N93HC

Forest fires & smoke

- Fires in WA state began in May, burned through entire NAIP season
 - Affected acquisition throughout WA, ID, Western MT, CO, NV
 - Last flight in NV, crew could not see the ground at 20,500ft MSL



EAWS



Problems

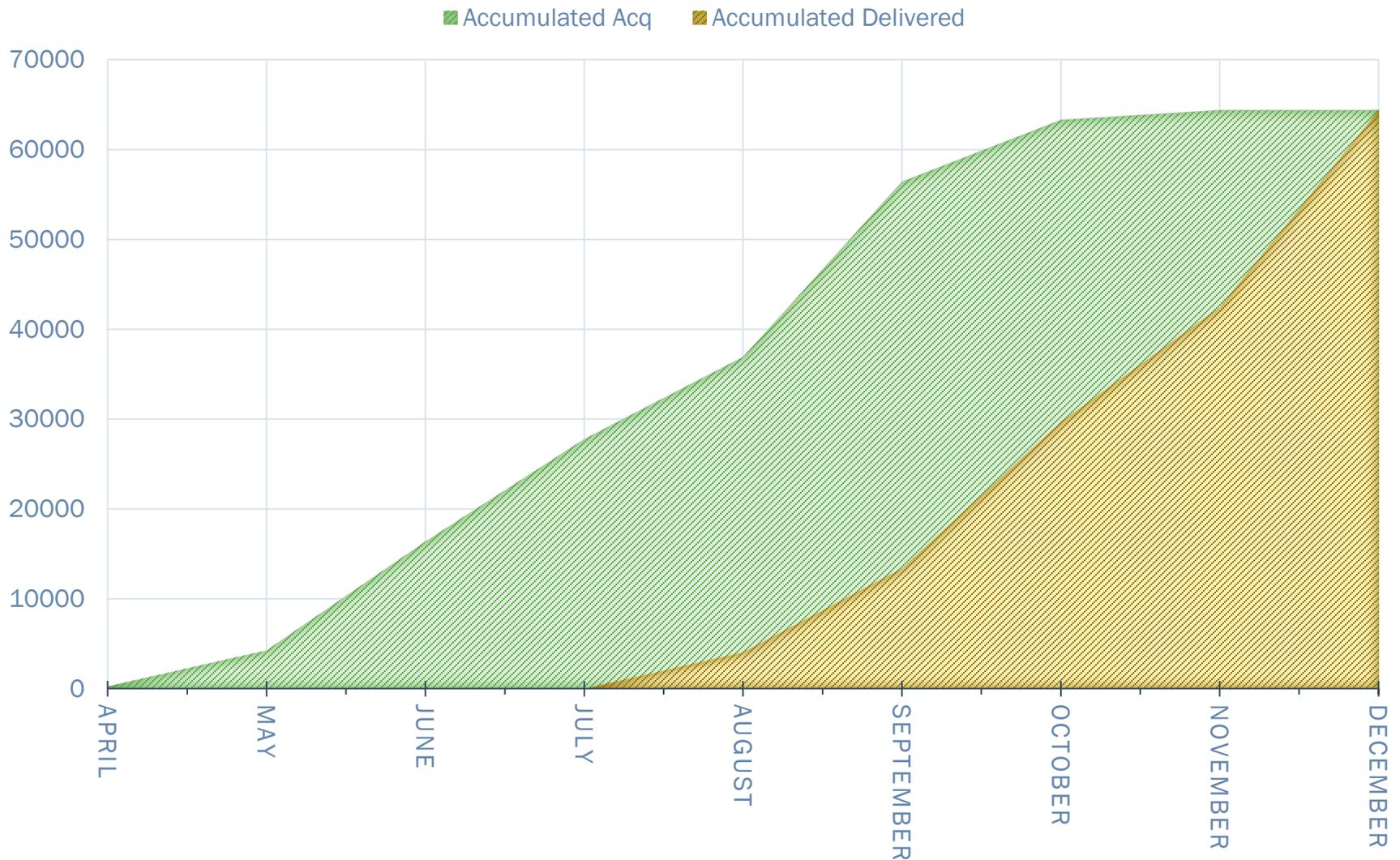
■ Bad

- Delayed access into Mexico
- Forest fires in Washington, Montana & Idaho
- Flooding in Louisiana
- Restricted military access

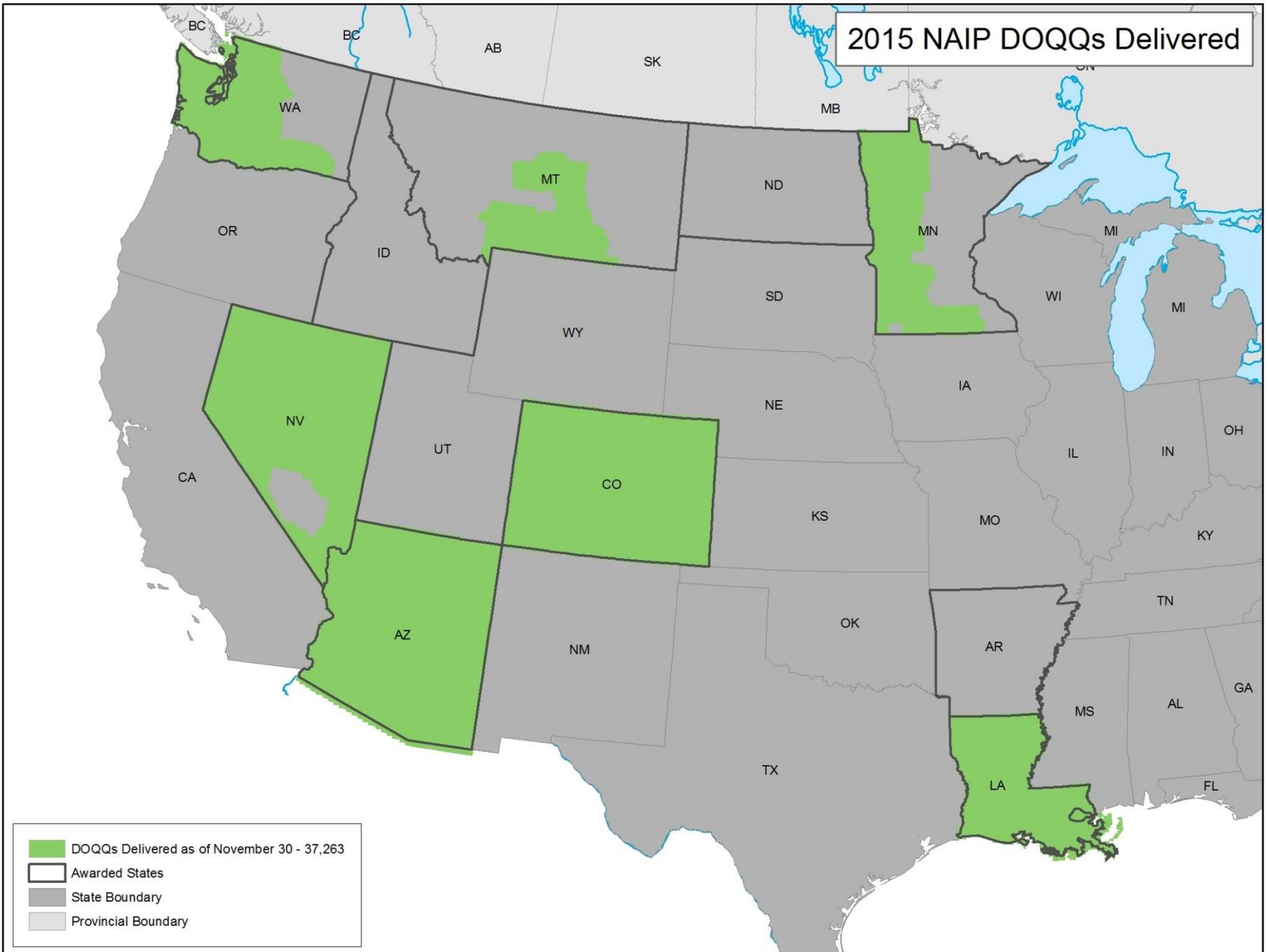
■ Good

- Smaller blocks allowed for progressive delivery
- Updated mosaic process to improve overall radiometric quality
- Lower flying height helped continue to work in some smoke conditions

DOQQ Delivery



2015 NAIP DOQQs Delivered





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Improvements for 2016



Program improvements for 2016?

- Accept snow as being perennial **July 1**
- Very close attention to start dates for areas of high risk!
 - A week early start can mean months saved overall
- Look at adjusting acquisition windows for multi-season states
 - Less end turns and overlap
- Come up with a “forest fire” procedure;
 - Refocus resources versus sit-and-wait

Questions?

- For more information please contact:

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Tim Crago (tim.crago@nwgeo.com)

John Welter (John.Welter@hexagon.com)

Thanks for your time!



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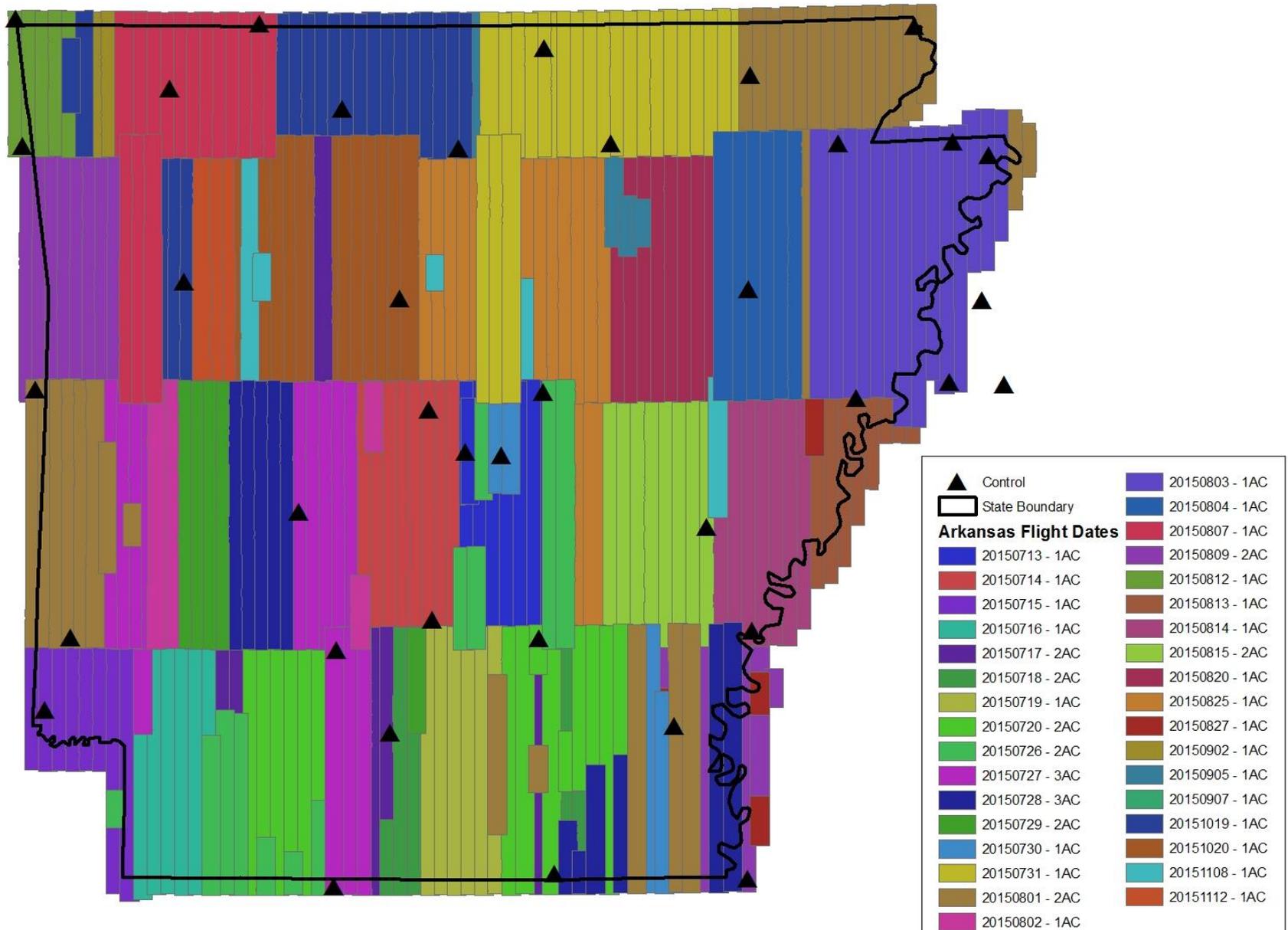
Detailed information per state



Arkansas

- 1m resolution
- CCMs – 75
- DOQQs – 3,600
- Acquisition Window
 - July 1st – September 15th
- 59 Available aircraft days, 39 good weather days
 - 47 Production flights
 - First Flight - July 13th, Last Flight – November 12th
- Extensions
 - Extended to November 13th
- Delivery Dates
 - In progress, due December 14th.

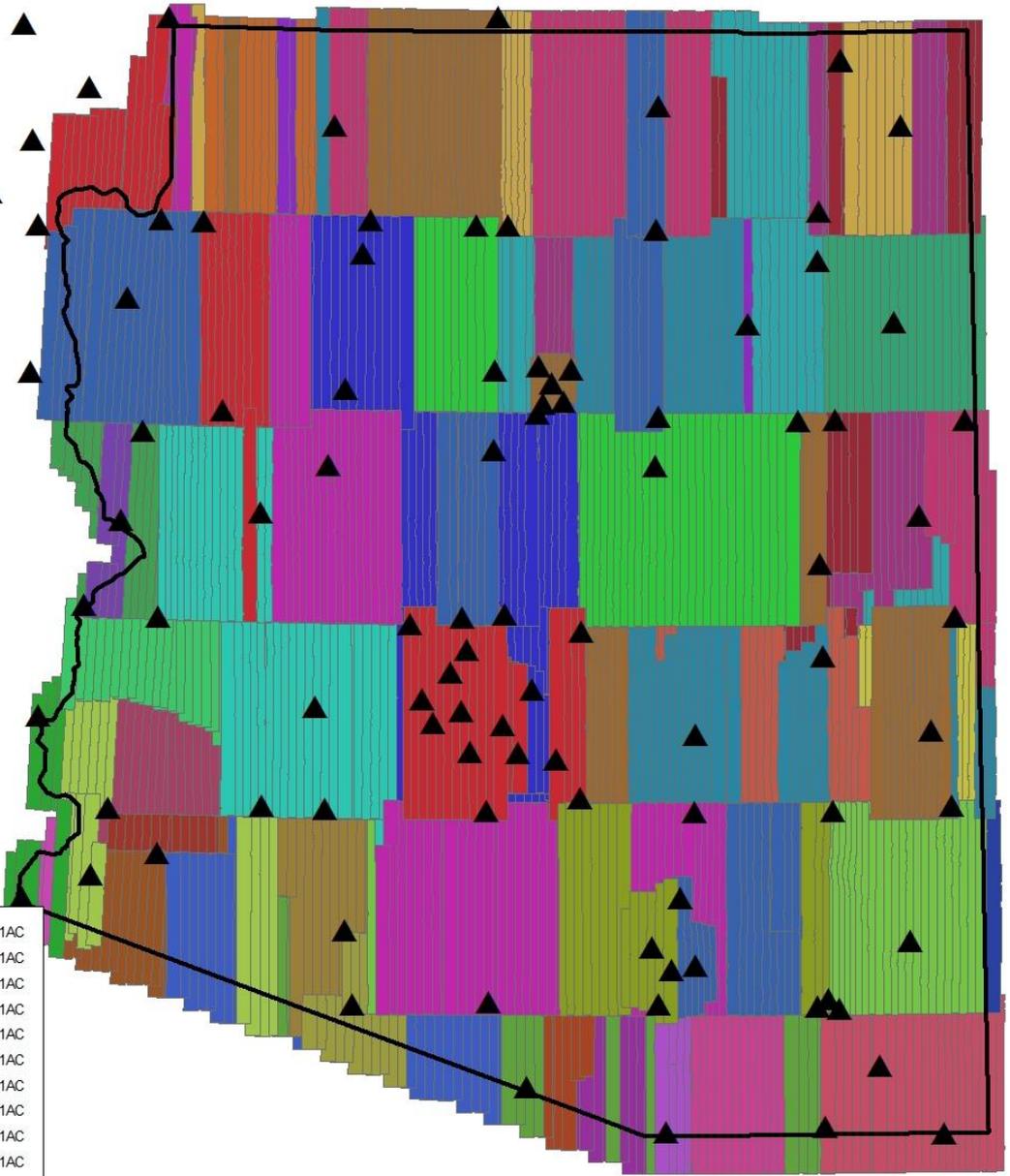
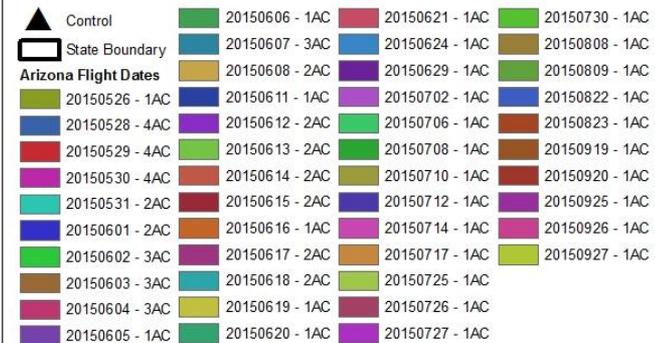
2015 Arkansas Acquisition



Arizona

- 1m resolution
- CCMs – 15
- DOQQs – 7,791
- Acquisition Window
 - June 1st – August 31st
- 103 Available aircraft days, 66 good weather days
 - 77 Production flights
 - First Flight – May 25th, Last Flight – September 22nd
- Mexico Border Clearance
 - Permission to proceed September 17th
- Extensions
 - Extended to September 30th
- Delivery Dates
 - 9 days early

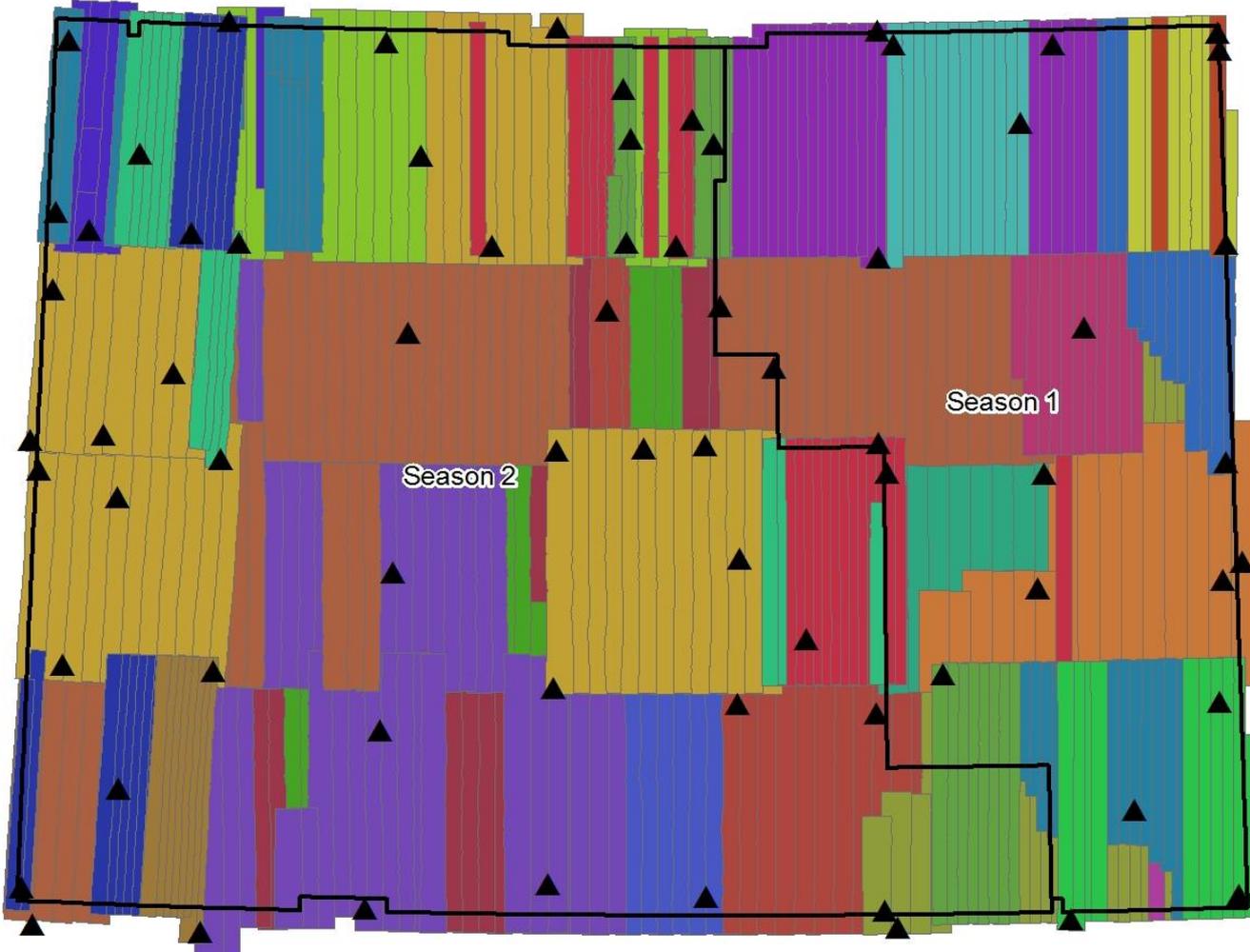
2015 Arizona Acquisition



Colorado

- 1m resolution
- CCMs – 64
- DOQQs – 7,423
- Acquisition Window
 - Season 1: July 1st – August 15th
 - Season 2: July 1st – September 15th
- 118 Available aircraft days, 59 good weather days
 - 49 Production flights
 - First Flight - July 23rd , Last Flight – September 21st
- Extensions
 - Season1: Extended to September 25th
 - Season 2: Extended to September 30th
- Delivery Dates
 - On Time

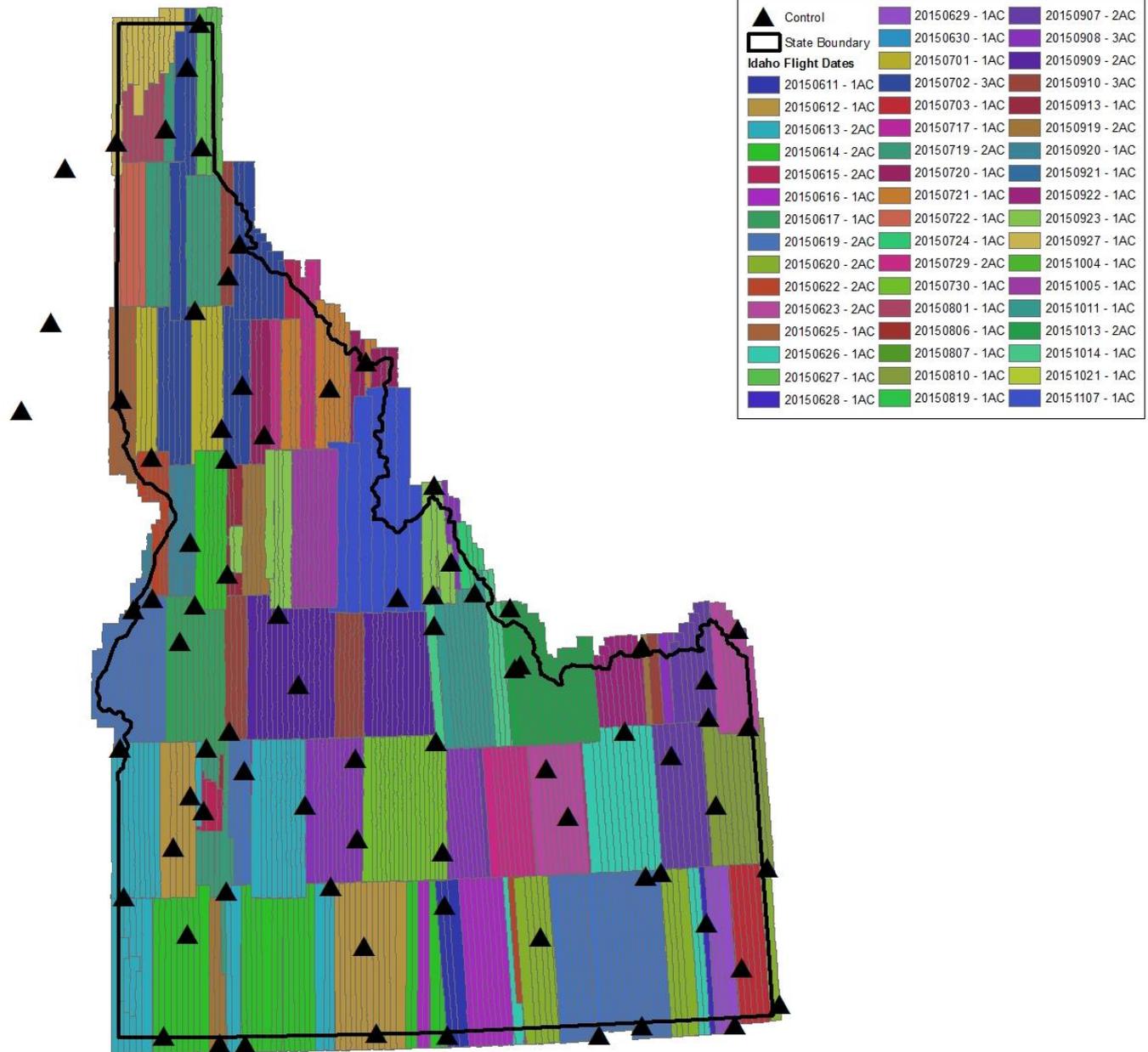
2015 Colorado Acquisition



▲ Control	20150730 - 1AC	20150818 - 1AC	20150902 - 3AC	20150910 - 3AC	20150917 - 1AC
□ Colorado by Season	20150731 - 1AC	20150824 - 2AC	20150904 - 1AC	20150911 - 3AC	20150918 - 1AC
Colorado Flight Dates	20150801 - 1AC	20150825 - 3AC	20150906 - 2AC	20150912 - 2AC	20150919 - 1AC
20150723 - 1AC	20150804 - 1AC	20150828 - 3AC	20150908 - 2AC	20150913 - 1AC	20150920 - 1AC
20150728 - 1AC	20150805 - 1AC	20150829 - 3AC	20150909 - 3AC	20150916 - 1AC	20150921 - 2AC

Idaho

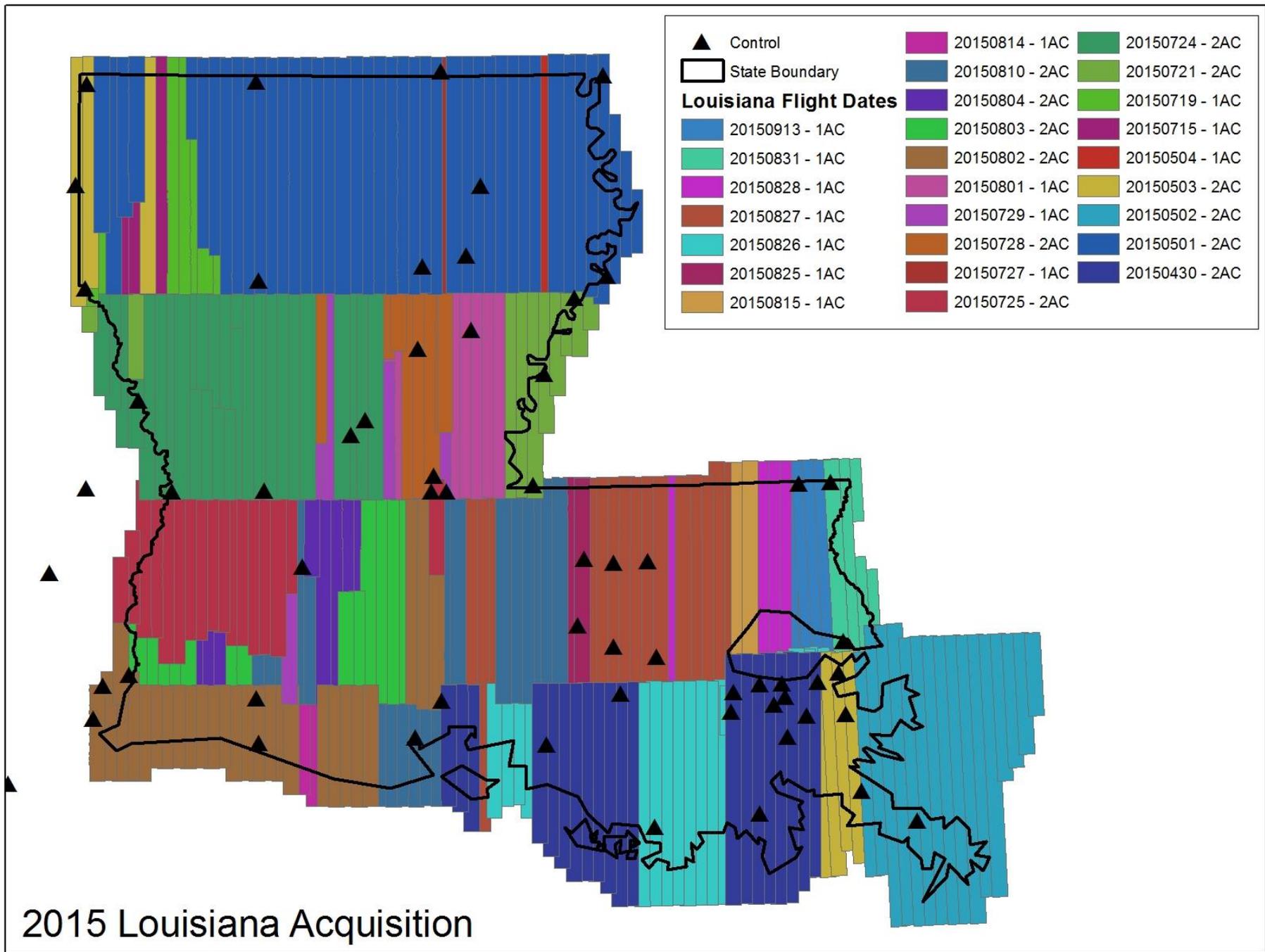
- 1m resolution
- CCMs – 44
- DOQQs – 6,554
- Acquisition Window
 - June 10th – August 15th
- Aircraft on site for 137 days, 51 good weather days
 - 74 Production flights
 - First Flight – June 11th , Last Flight – November 7th
- Extensions
 - Extended to November 20th in attempts to capture smoke reflights
- Delivery Dates
 - Due Dec 20th



2015 Idaho Acquisition

Louisiana

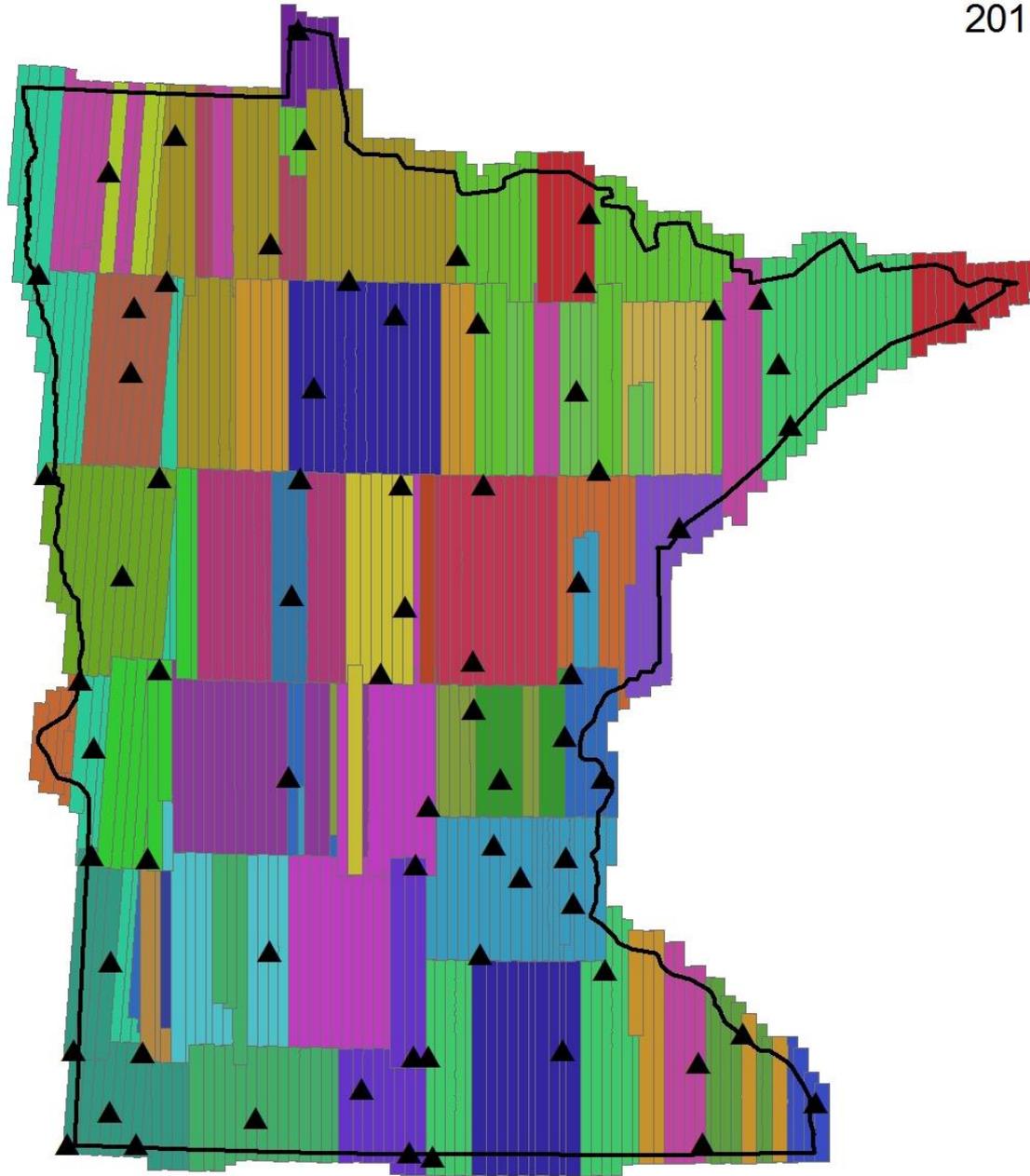
- 1m resolution
- CCMs – 64
- DOQQs – 3,290
- Acquisition Window
 - May 1st – July 31st
- Aircraft on site for 142 days, 26 good weather days
 - 41 Production flights
 - First Flight – April 30th , Last Flight – September 13th
- Extensions
 - Extended to September 25th
- Delivery Dates
 - 5 days early



Minnesota

- CCMs – 87
- DOQQs – 6,791
- Acquisition Window
 - June 15th – August 31st
- Aircraft on site for 126 days, 38 good weather days
 - 51 Production flights
 - First Flight – August 1st , Last Flight – November 8th
- Extensions
 - Extended to November 13th
- Delivery Dates
 - Due Dec 14th

2015 Minnesota Acquisition



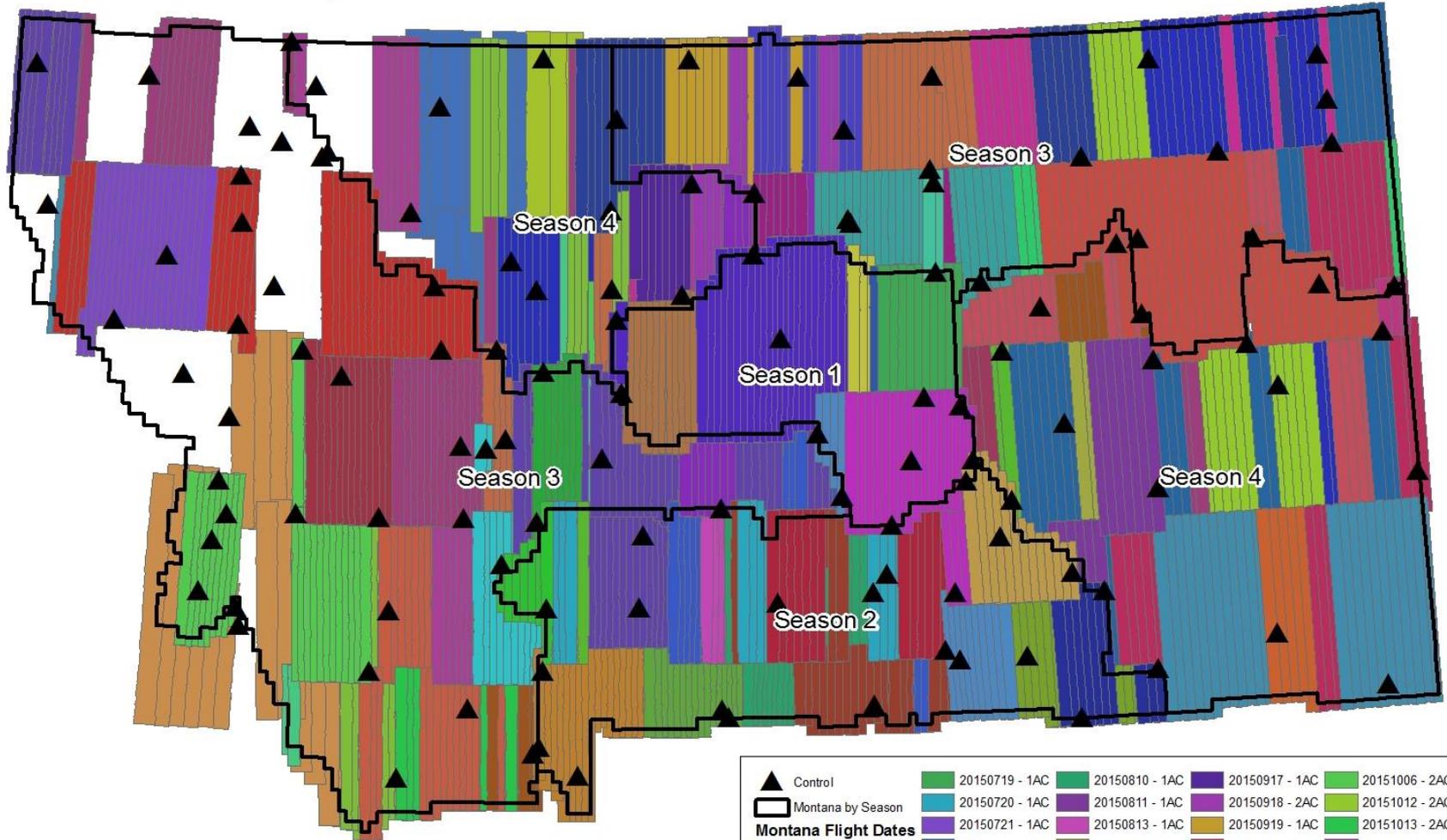
▲ Control	20150920 - 1AC
□ State Boundary	20150921 - 1AC
Minnesota Flight Dates	20150922 - 1AC
20150801 - 1AC	20150926 - 2AC
20150803 - 1AC	20150927 - 2AC
20150804 - 1AC	20150929 - 1AC
20150810 - 1AC	20150930 - 2AC
20150811 - 1AC	20151001 - 2AC
20150812 - 1AC	20151002 - 2AC
20150814 - 1AC	20151003 - 1AC
20150820 - 1AC	20151011 - 3AC
20150823 - 1AC	20151013 - 1AC
20150824 - 1AC	20151014 - 3AC
20150825 - 1AC	20151017 - 2AC
20150902 - 1AC	20151018 - 3AC
20150907 - 1AC	20151022 - 2AC
20150908 - 1AC	20151024 - 1AC
20150912 - 1AC	20151103 - 1AC
20150913 - 1AC	20151103 - 1AC
20150915 - 1AC	20151108 - 2AC
20150919 - 1AC	

Montana

- CCMs – 56
- DOQQs – 11,776
 - 834 not captured
- Acquisition Window
 - Season 1: June 15th – July 15th
 - Season 2: June 25th – July 25th
 - Season 3: July 5th – August 5th
 - Season 4: July 15th – August 15th
- Extensions
 - Season 1: Extended to August 24th
 - Season 2: Extended to September 25th
 - Season 3: Extended to November 20th in attempts to complete
 - Season 4: Extended to November 20th in attempts to complete
- Aircraft on site for 137 days, 61 good weather days
 - 93 Production flights
 - First Flight - June 26th, Last Flight – November 12th
- Delivery Dates
 - Season 1- 7 days early, season 2- on time, seasons 3 & 4 due Dec 20th.



2015 Montana Acquisition



▲ Control	20150719 - 1AC	20150810 - 1AC	20150917 - 1AC	20151006 - 2AC
▭ Montana by Season	20150720 - 1AC	20150811 - 1AC	20150918 - 2AC	20151012 - 2AC
Montana Flight Dates	20150721 - 1AC	20150813 - 1AC	20150919 - 1AC	20151013 - 2AC
20150626 - 1AC	20150722 - 1AC	20150815 - 1AC	20150920 - 2AC	20151014 - 2AC
20150627 - 1AC	20150724 - 1AC	20150819 - 1AC	20150921 - 2AC	20151015 - 2AC
20150629 - 1AC	20150729 - 2AC	20150823 - 1AC	20150922 - 2AC	20151017 - 3AC
20150701 - 1AC	20150730 - 2AC	20150901 - 2AC	20150923 - 2AC	20151021 - 2AC
20150704 - 2AC	20150731 - 2AC	20150906 - 1AC	20150925 - 2AC	20151022 - 3AC
20150708 - 1AC	20150801 - 2AC	20150907 - 1AC	20150927 - 1AC	20151023 - 3AC
20150713 - 1AC	20150802 - 1AC	20150910 - 1AC	20150928 - 2AC	20151101 - 1AC
20150714 - 1AC	20150806 - 1AC	20150911 - 3AC	20150929 - 2AC	20151107 - 3AC
20150716 - 1AC	20150807 - 1AC	20150912 - 2AC	20150930 - 4AC	20151112 - 1AC
20150718 - 1AC	20150809 - 1AC	20150913 - 3AC	20151005 - 1AC	

Nevada

- CCMs – 17
- DOQQs – 7,482
 - 237 not acquired around NTTR, not permitted within 5NM of restricted airspace
- Acquisition Window
 - June 1st – August 1st
- Extensions
 - Extended to August 24th
- Aircraft on site for 134 days, 43 good weather days
 - 87 Production flights
 - First Flight – May 25th , Last Flight – August 22nd
- Delivery Dates
 - On time

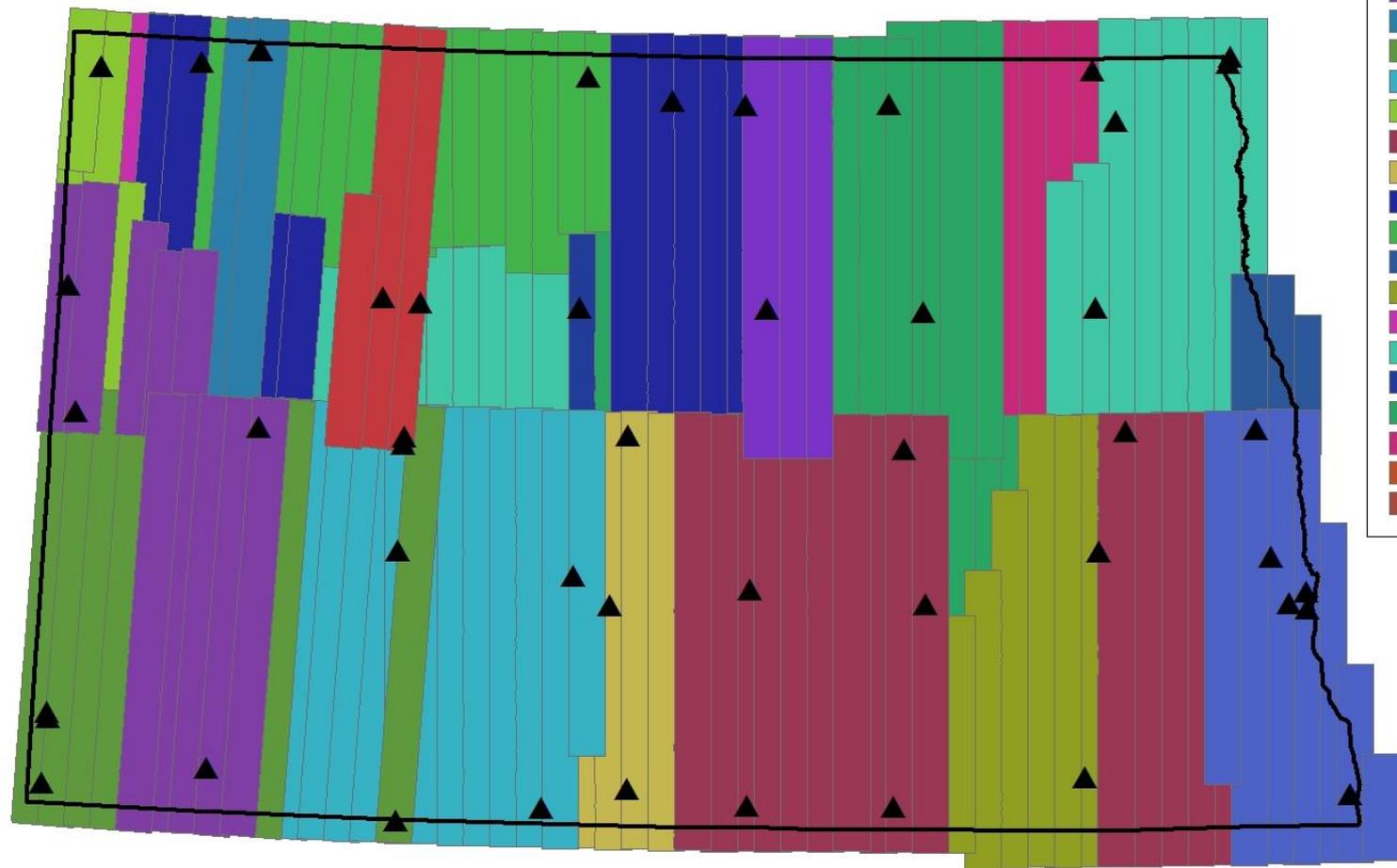
2015 Nevada Acquisition



▲	Control		
□	State Boundary		
Nevada Flight Dates			
■	20150822 - 1AC	■	20150713 - 1AC
■	20150815 - 1AC	■	20150712 - 2AC
■	20150809 - 1AC	■	20150705 - 2AC
■	20150803 - 1AC	■	20150626 - 1AC
■	20150730 - 1AC	■	20150625 - 1AC
■	20150729 - 2AC	■	20150623 - 2AC
■	20150728 - 2AC	■	20150622 - 2AC
■	20150726 - 3AC	■	20150621 - 1AC
■	20150725 - 3AC	■	20150620 - 1AC
■	20150720 - 2AC	■	20150619 - 1AC
■	20150716 - 2AC	■	20150618 - 1AC
■	20150715 - 1AC	■	20150616 - 2AC
■	20150714 - 1AC	■	20150615 - 1AC
		■	20150614 - 2AC
		■	20150613 - 1AC
		■	20150612 - 1AC
		■	20150611 - 1AC
		■	20150609 - 2AC
		■	20150608 - 2AC
		■	20150607 - 2AC
		■	20150606 - 1AC
		■	20150602 - 2AC
		■	20150601 - 2AC
		■	20150531 - 2AC
		■	20150530 - 1AC
		■	20150529 - 1AC
		■	20150528 - 1AC
		■	20150527 - 2AC
		■	20150526 - 2AC
		■	20150525 - 2AC

North Dakota

- CCMs – 53
- DOQQs – 5,712
- Acquisition Window
 - Contract Awarded July 17th
 - Season window July 18th-September 30th
- Extensions
 - Extended to November 13th
- Aircraft on site for 50 days, 21 good weather days
 - 25 Production flights
 - First Flight – August 8th, Last Flight – November 9th
- Delivery Dates
 - Due Dec 14th

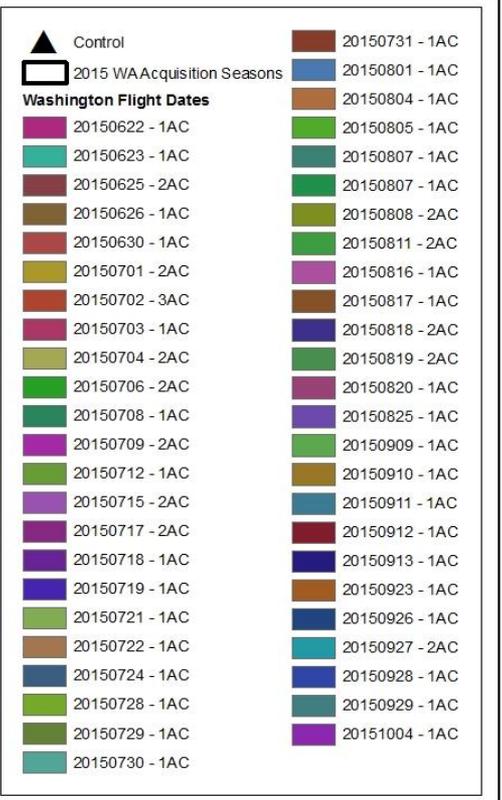
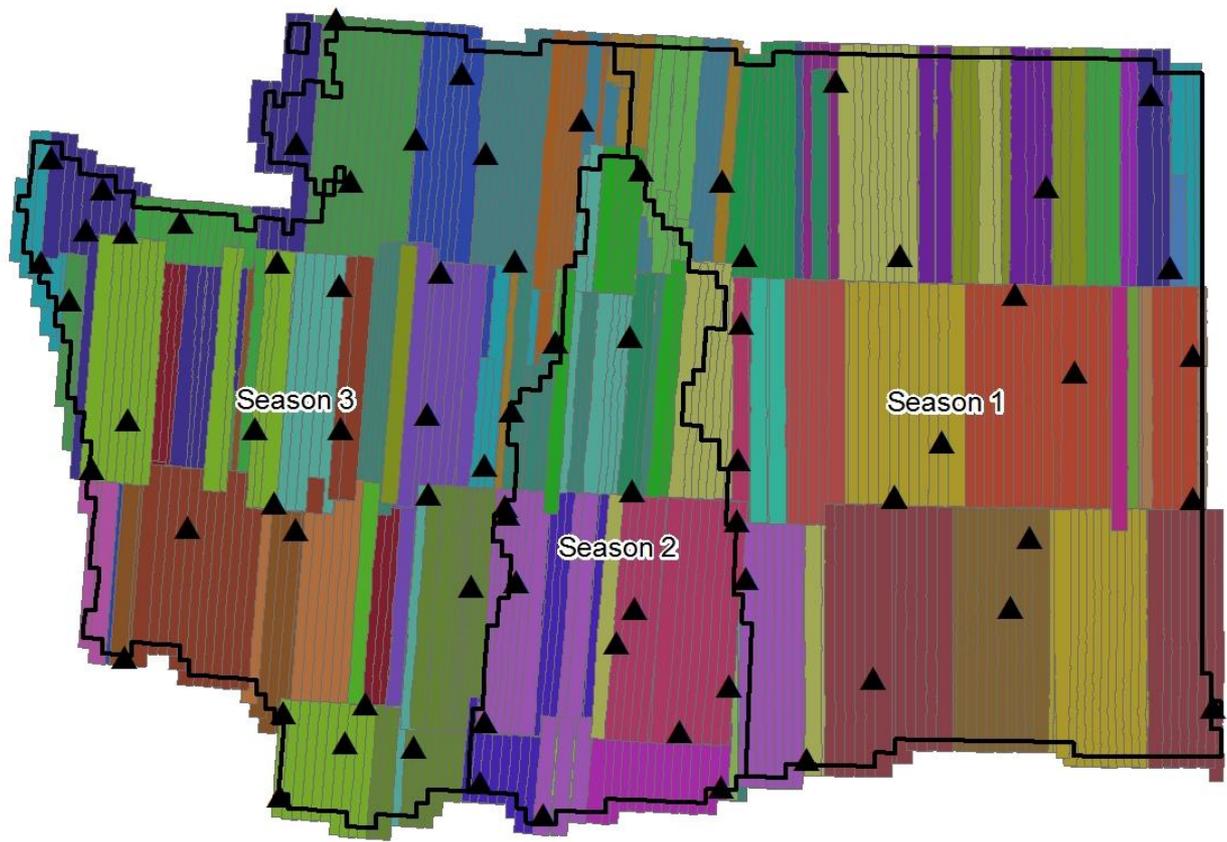


- ▲ Control
- ▭ State Boundary
- North Dakota Flight Dates**
- 20150808 - 1AC
- 20150901 - 1AC
- 20150911 - 1AC
- 20150914 - 1AC
- 20150918 - 1AC
- 20150920 - 1AC
- 20150921 - 1AC
- 20150925 - 1AC
- 20150926 - 2AC
- 20150927 - 1AC
- 20150928 - 1AC
- 20150929 - 1AC
- 20151006 - 1AC
- 20151011 - 1AC
- 20151012 - 1AC
- 20151013 - 2AC
- 20151014 - 1AC
- 20151017 - 2AC
- 20151018 - 1AC
- 20151030 - 1AC
- 20151109 - 1AC

2015 North Dakota Acquisition

Washington

- CCMs – 39
- DOQQs – 5,718
- Acquisition Window
 - Season 1: June 15th – July 31st
 - Season 2: July 1st – August 15th
 - Season 3: August 1st – September 15th
- Extensions
 - Season 1: Extended to November 20th in attempts to capture smoke reflights
 - Season 2: Extended to September 25th
 - Season 3: Extended to October 15th
- Aircraft on site for **42** days, 48 good weather days
 - 72 Production flights
 - First Flight - June 22nd , Last Flight – October 4th
- Delivery Dates
 - Season 2 & 3 delivered on time, season 1 due Dec 20th



2015 Washington Acquisition