

# Evaluating the Coverage of the Disaster Monitoring Constellation for the NASS Cropland Data Layer

Robert Seffrin

National Agricultural Statistics Service



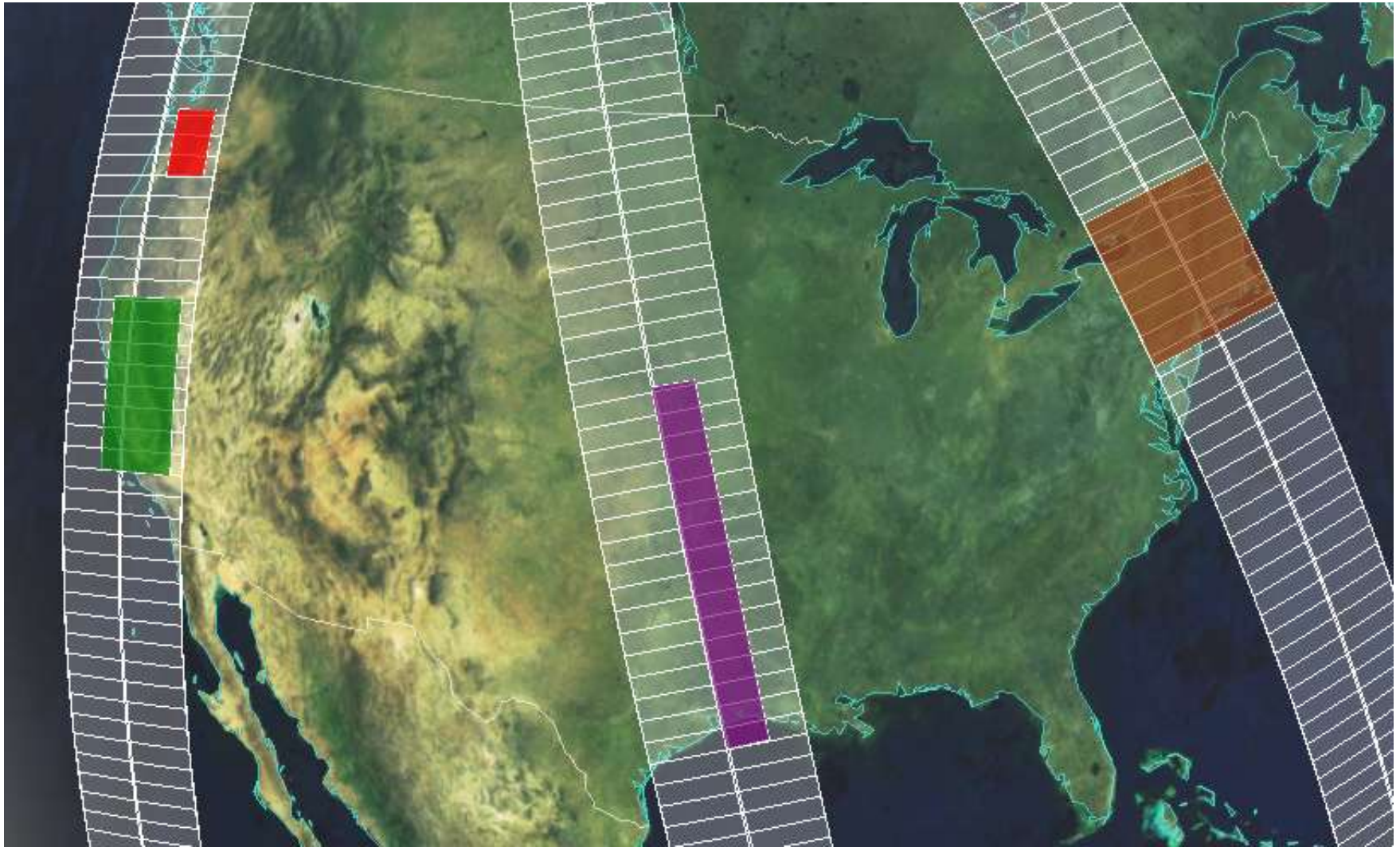
“ . . . providing timely, accurate, and useful statistics in service to U.S. agriculture.”



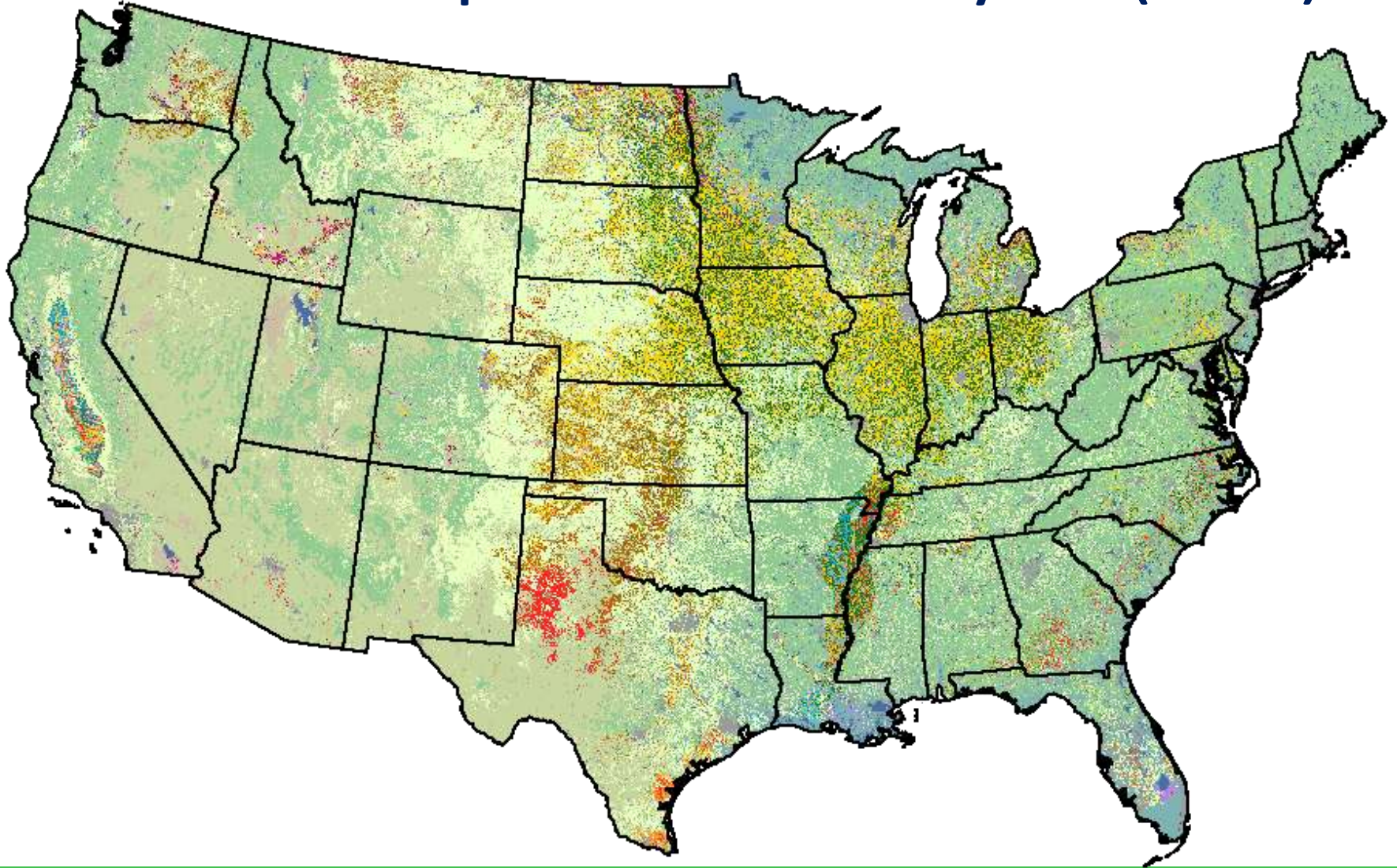
# Outline

- Background
- Data generation
- Imagery exploration
- Imagery usage

# 2012 Deimos-1/UK2 Satellite Tasking



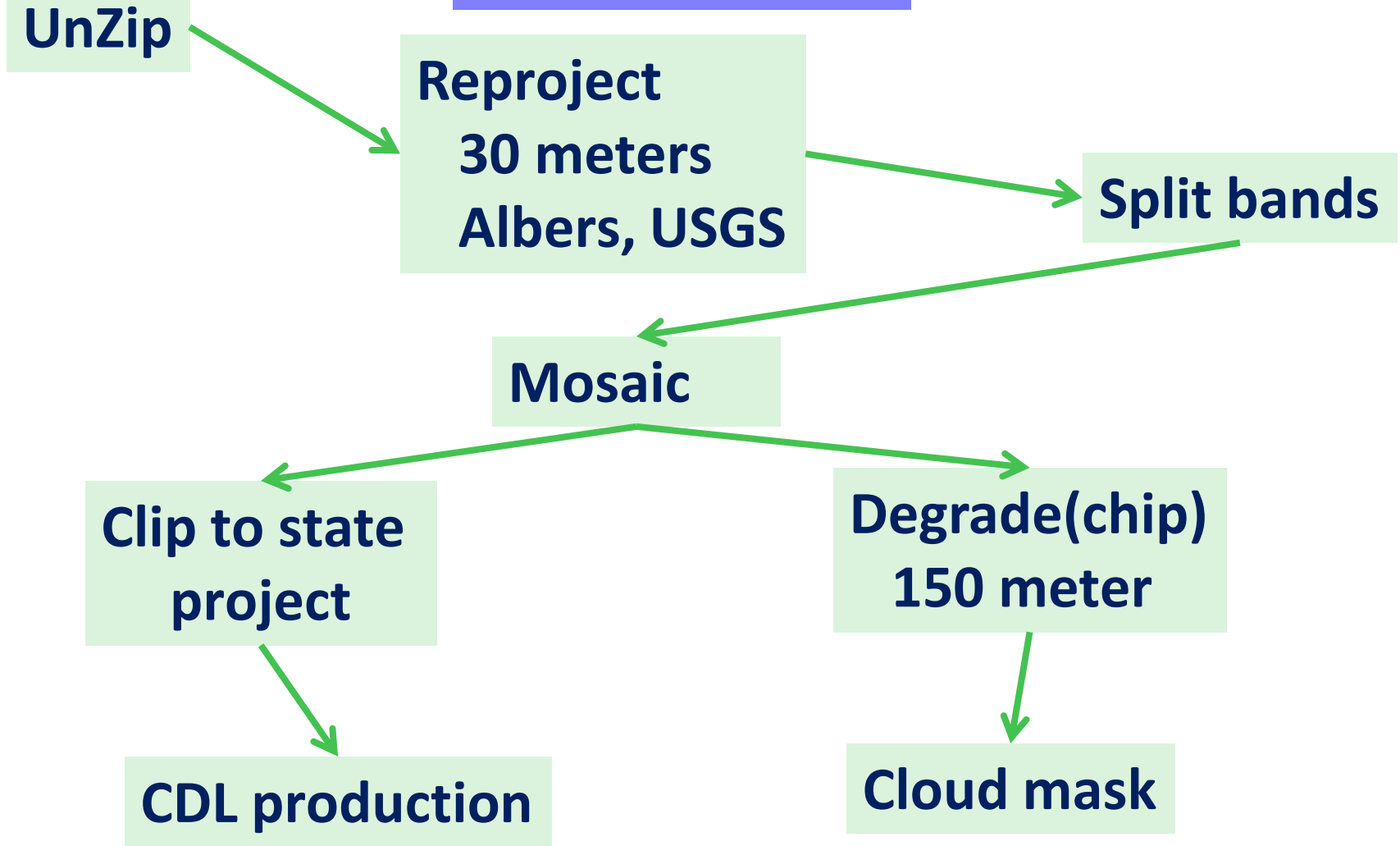
# 2012 Cropland Data Layer (CDL)

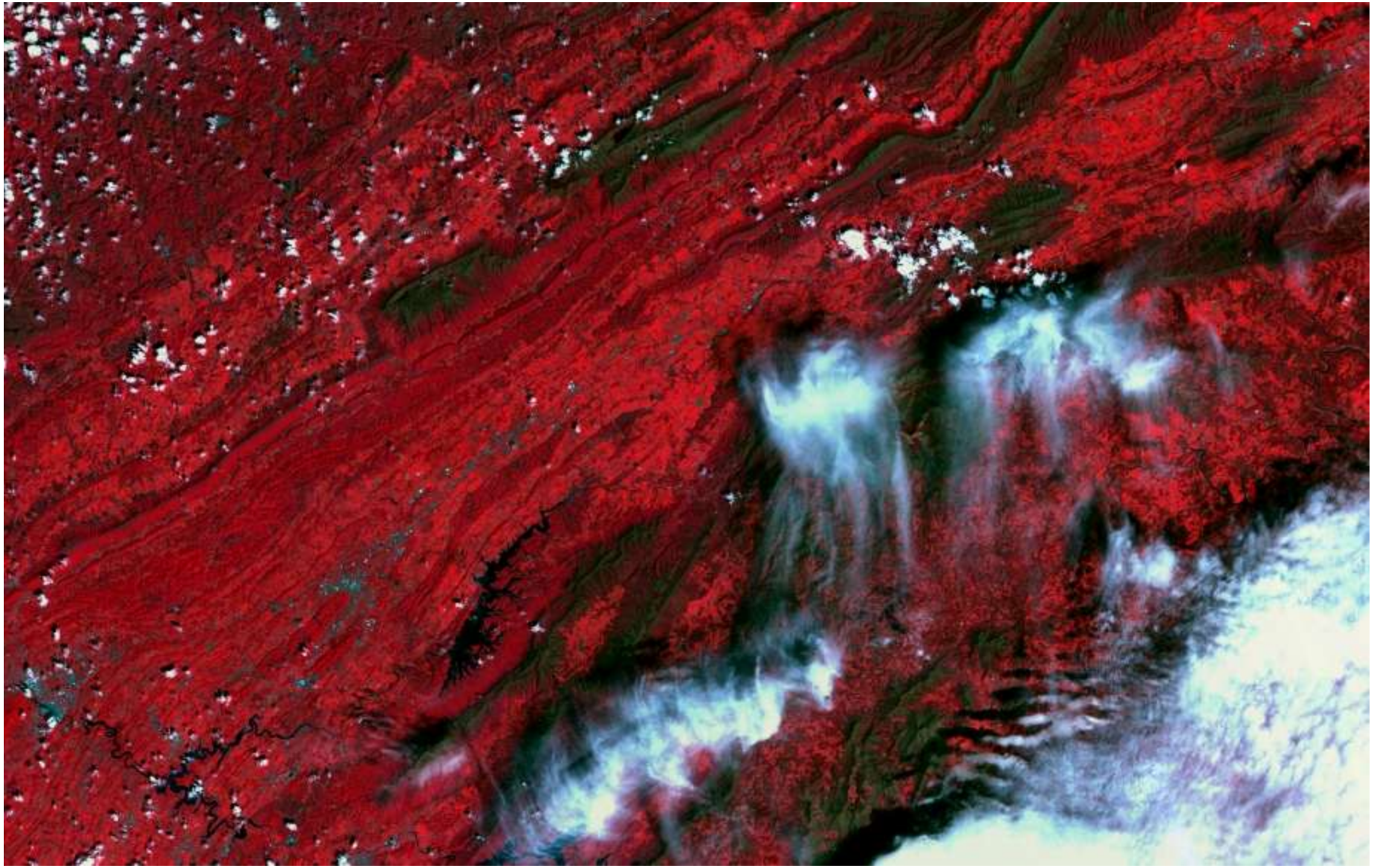


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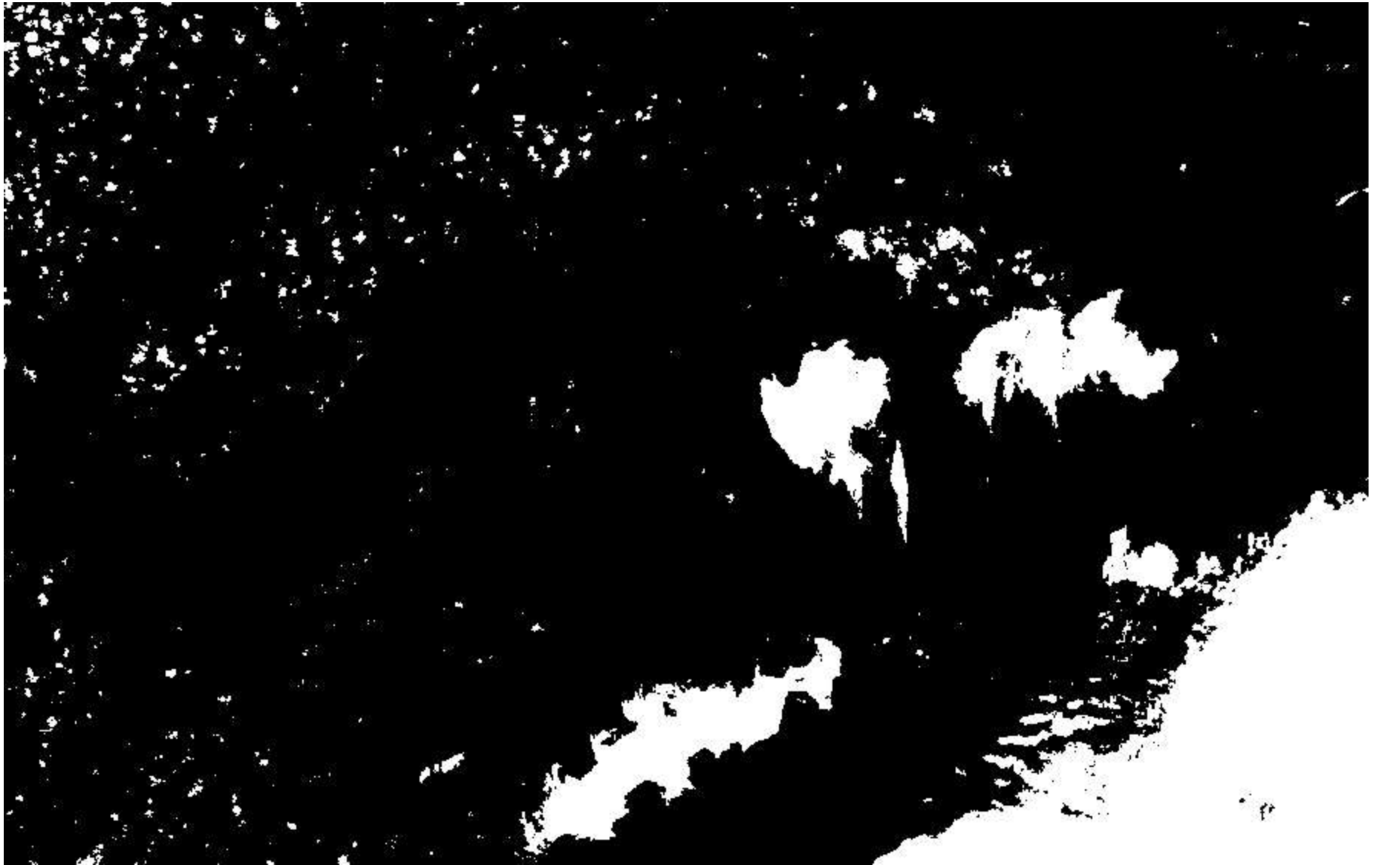
# Processing





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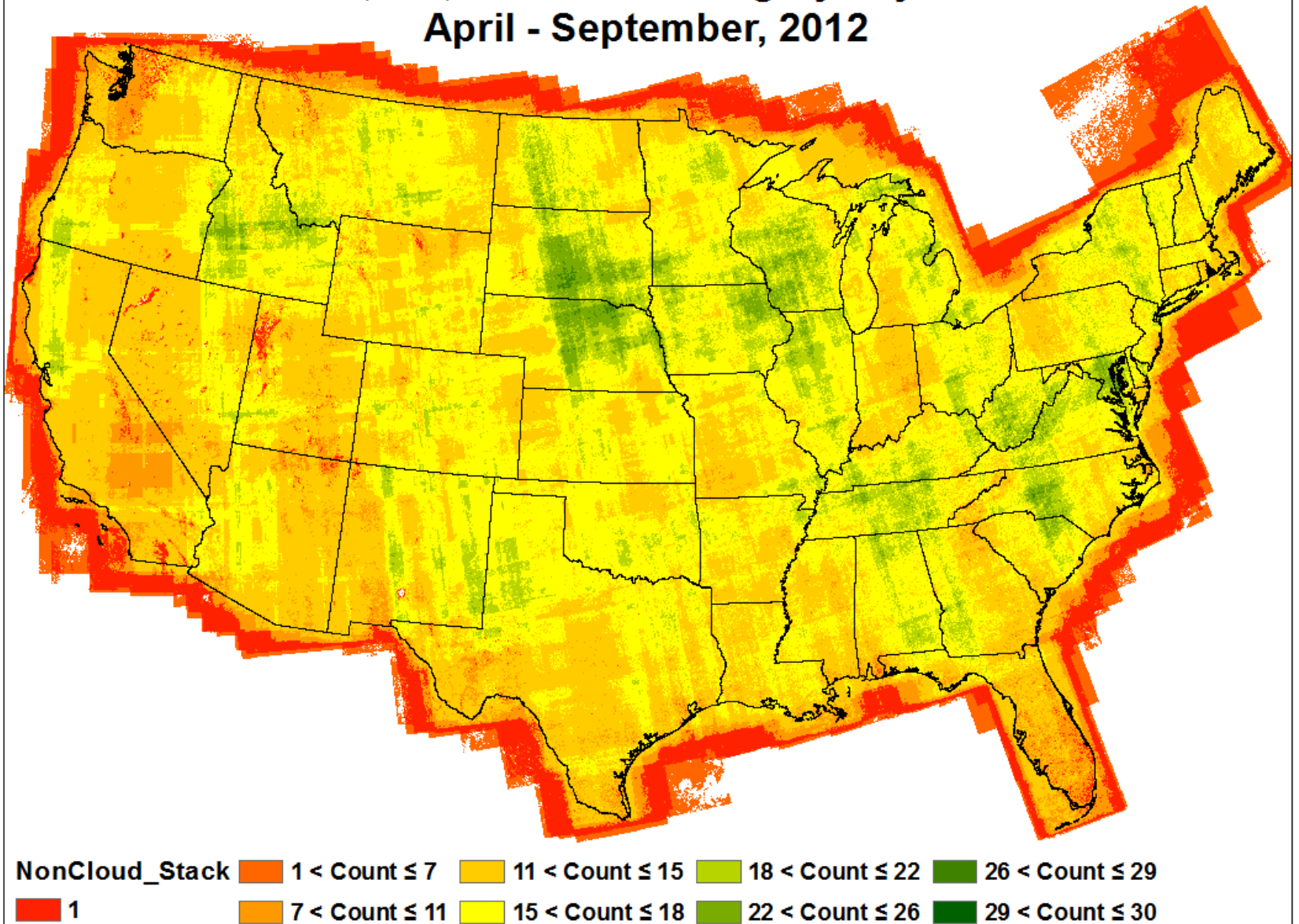




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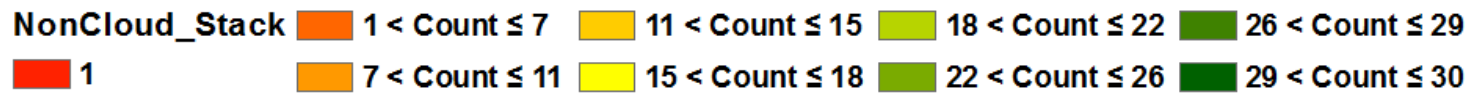
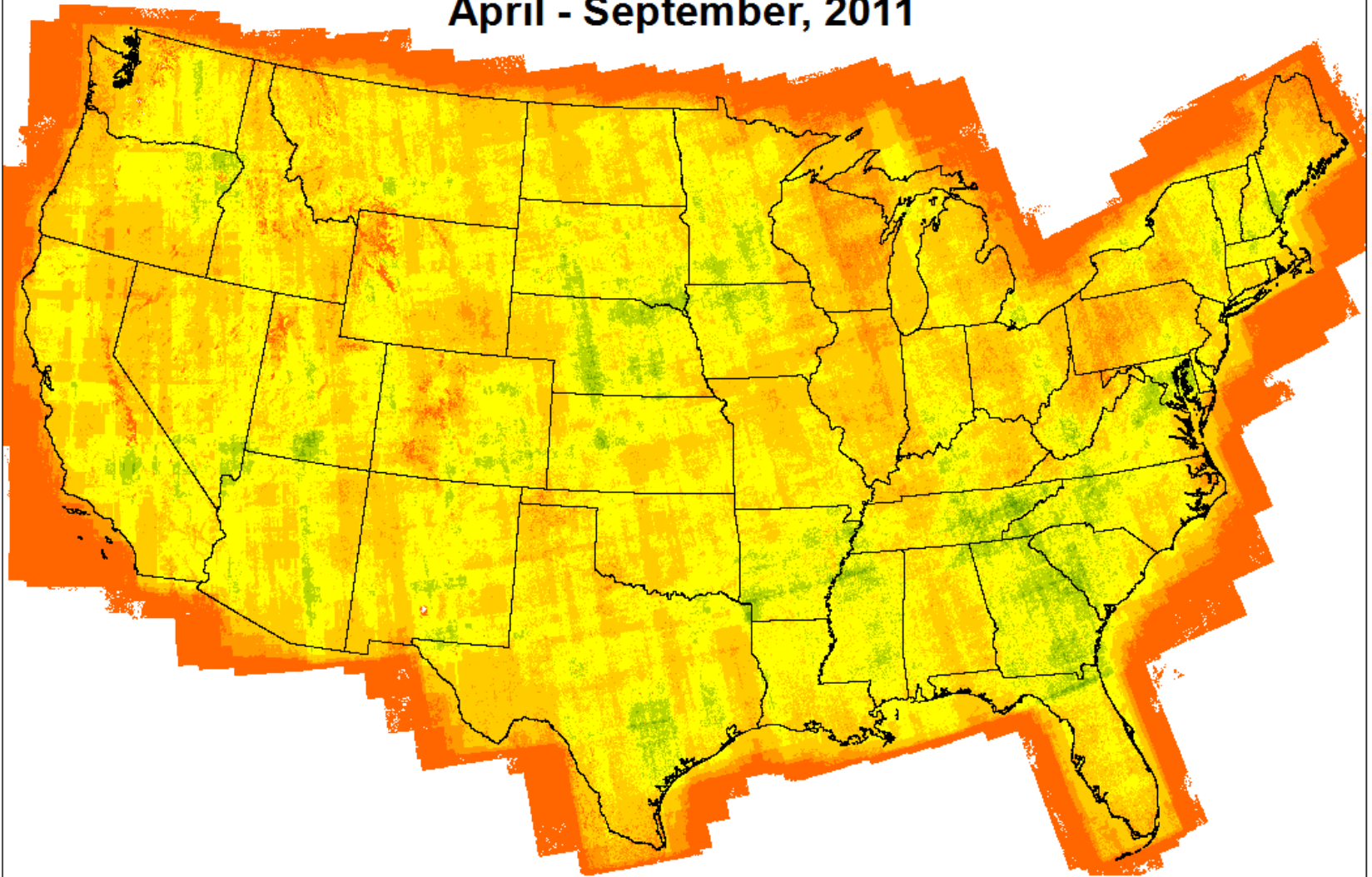


# Deimos, UK, Non-Cloud Imagery Layer count April - September, 2012

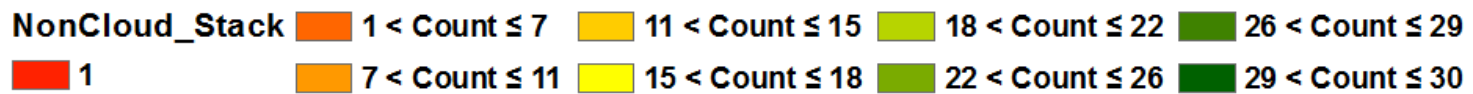
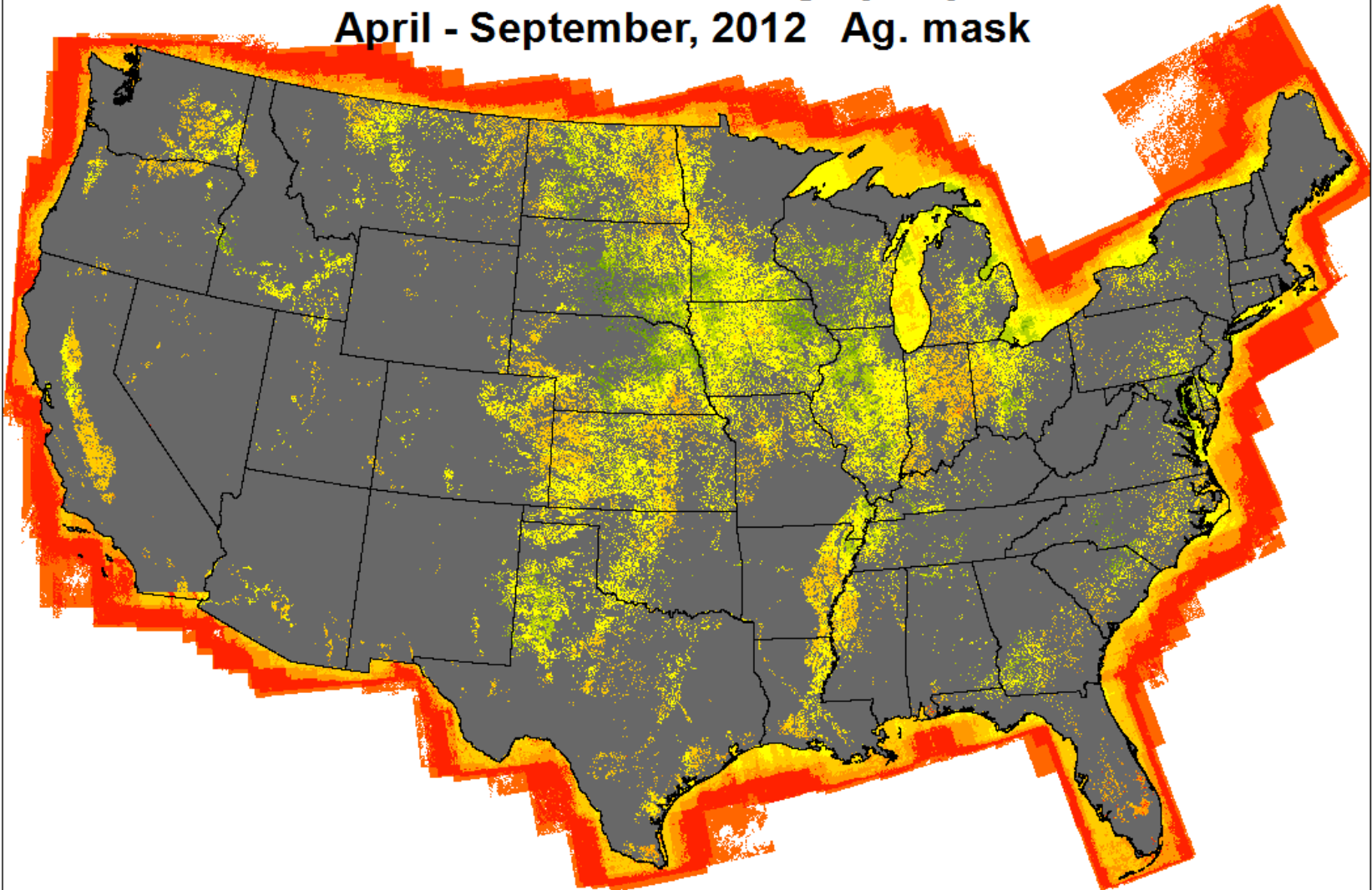




# Deimos, UK, Non-Cloud Imagery Layer count April - September, 2011



# Deimos, UK, Non-Cloud Imagery Layer count April - September, 2012 Ag. mask



# Spatial and temporal distribution?

- **Distribution of collects within a campaign?**
- **How many days between cloud free collects?**
- **How many cloud free collects per campaign?**

# Analysis data - Coverage

Recode non-Cloud  
to julian-90

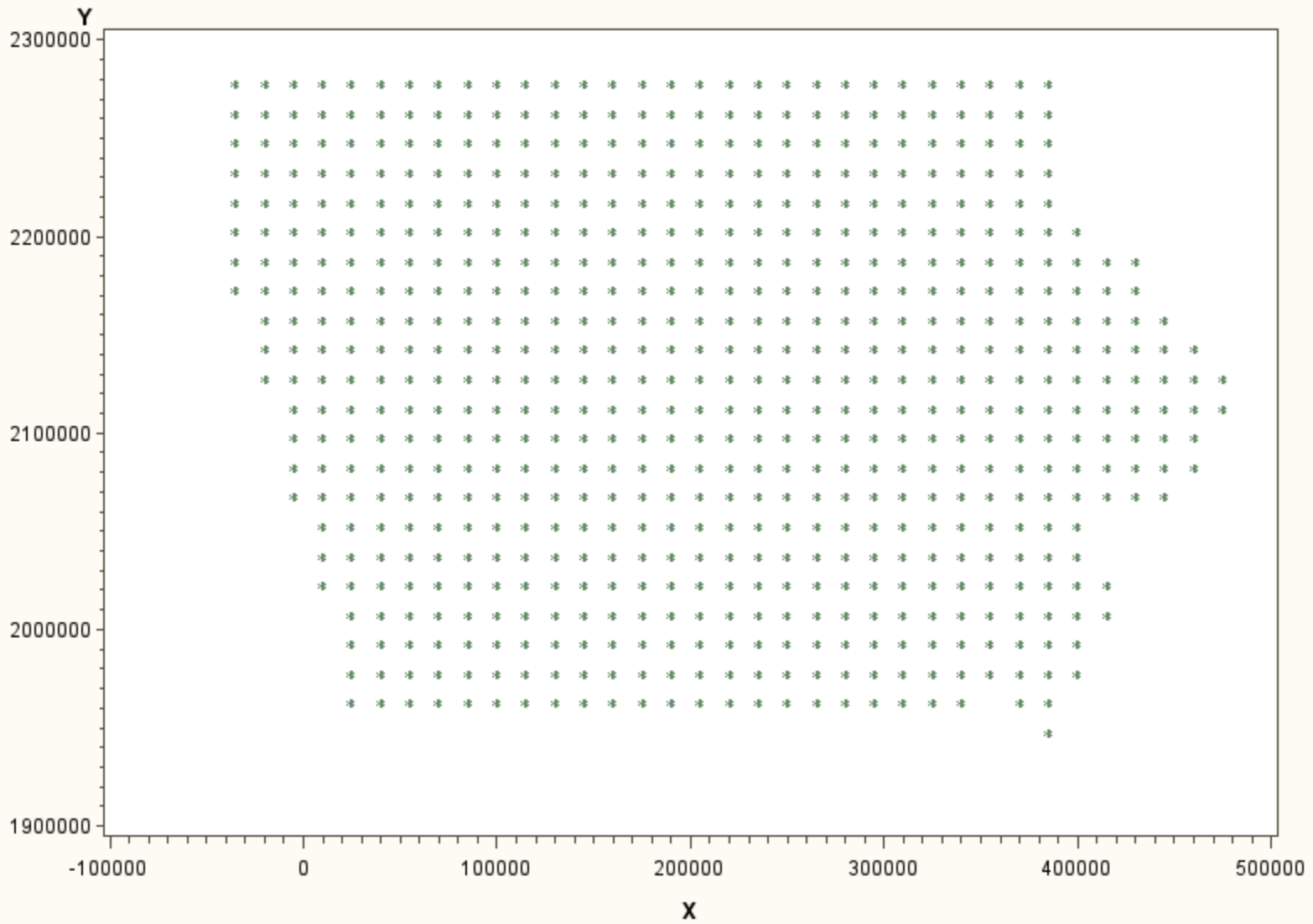
Merge all mosaics  
of same date  
to U.S. extent

Imagine: Pixel-to-Table  
systematic sample  
every 100<sup>th</sup> pixel  
(State, county, ag. mask)

Import to SAS  
merge tables  
remove zeros

Analysis

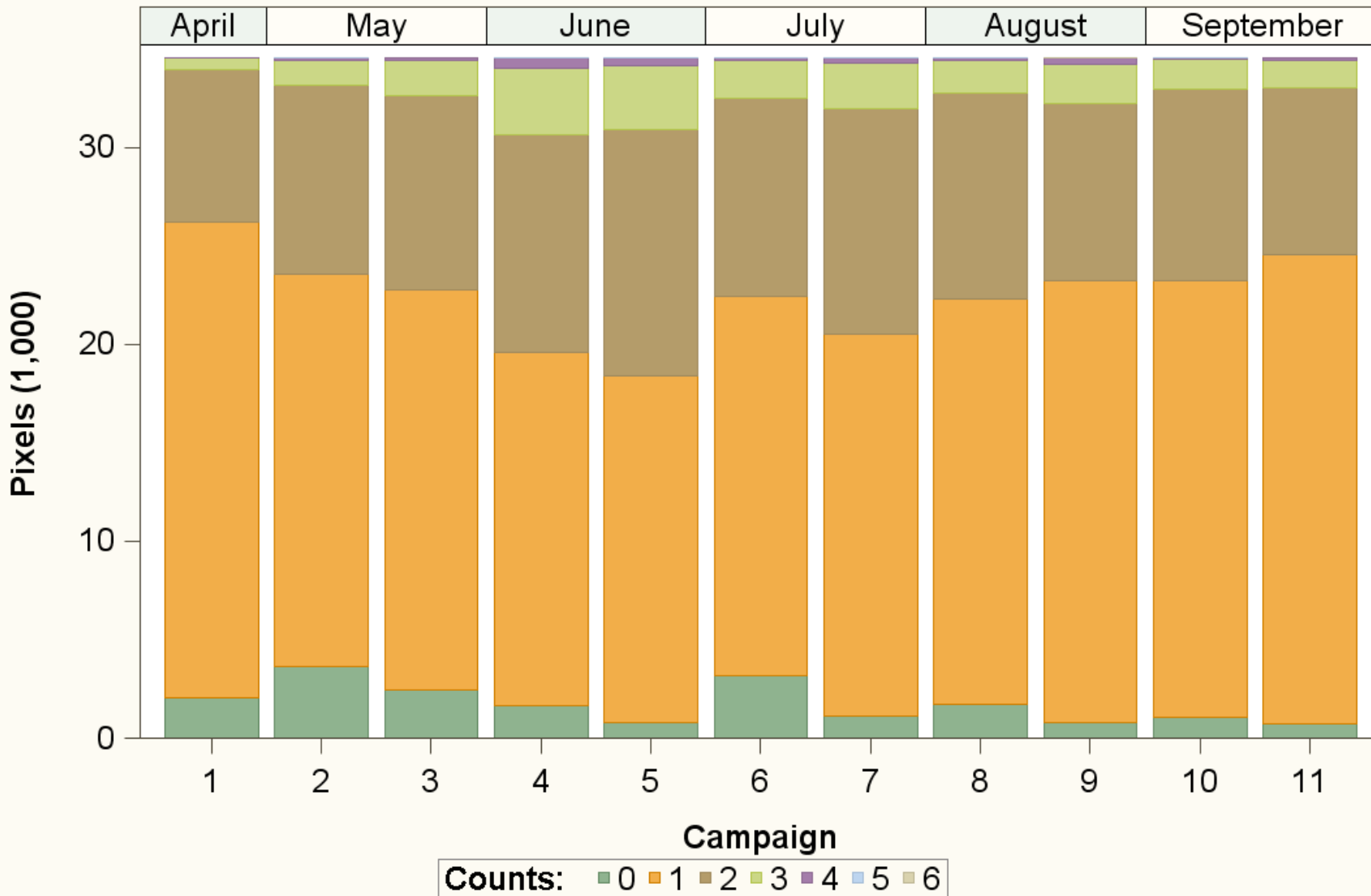




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# Collection Counts per Campaign by Pixel



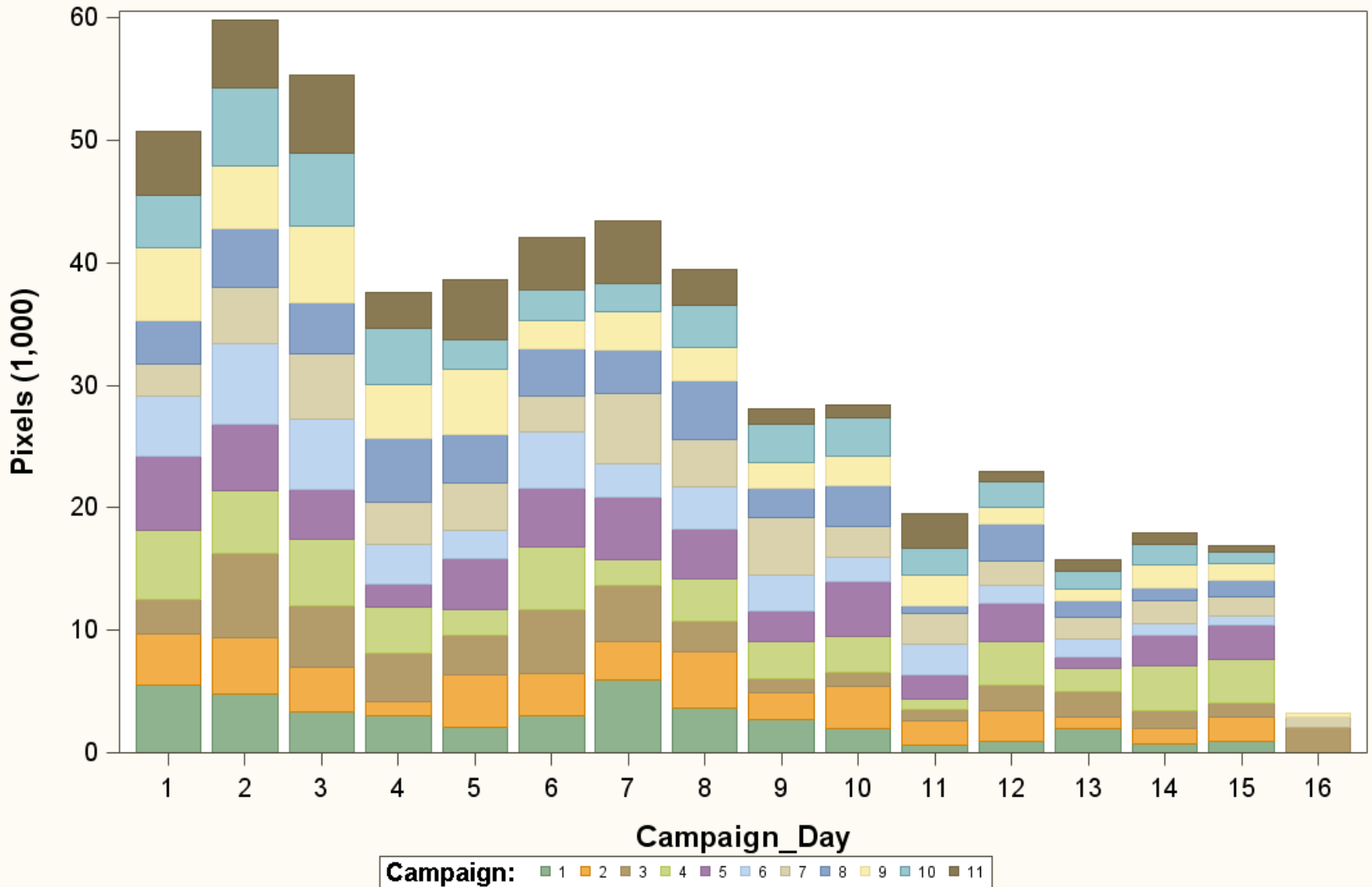
Sample: 100, Level: All (template: Bar\_group)



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# Collects by Campaign Day across Campaigns



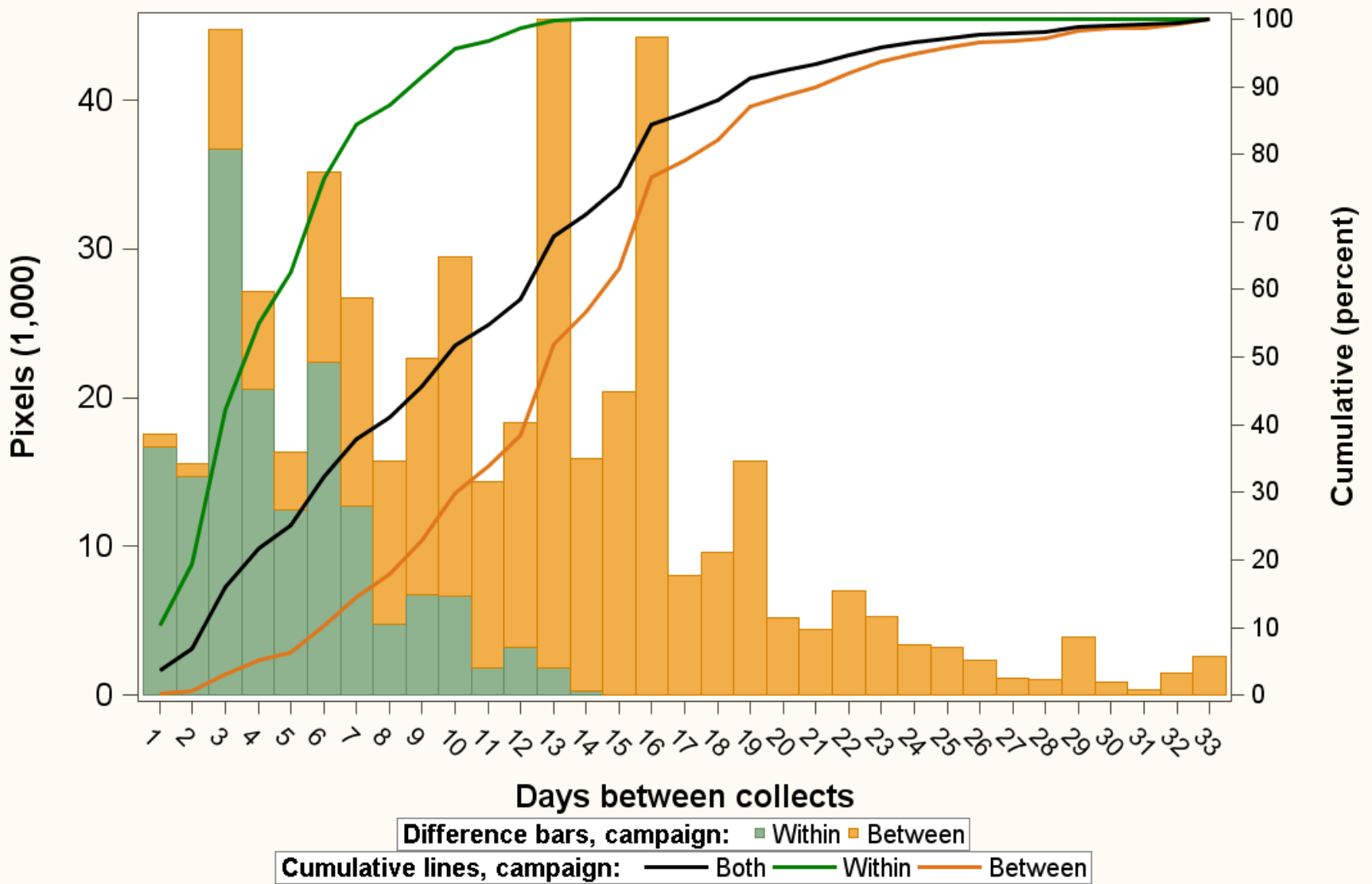
Campaign days 1-15 == 16-30, from work.Campaign



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# Distribution of Days between Cloud Free Collections



for all sampled pixels, April to Sept. (dif. 33 includes all greater than 33)

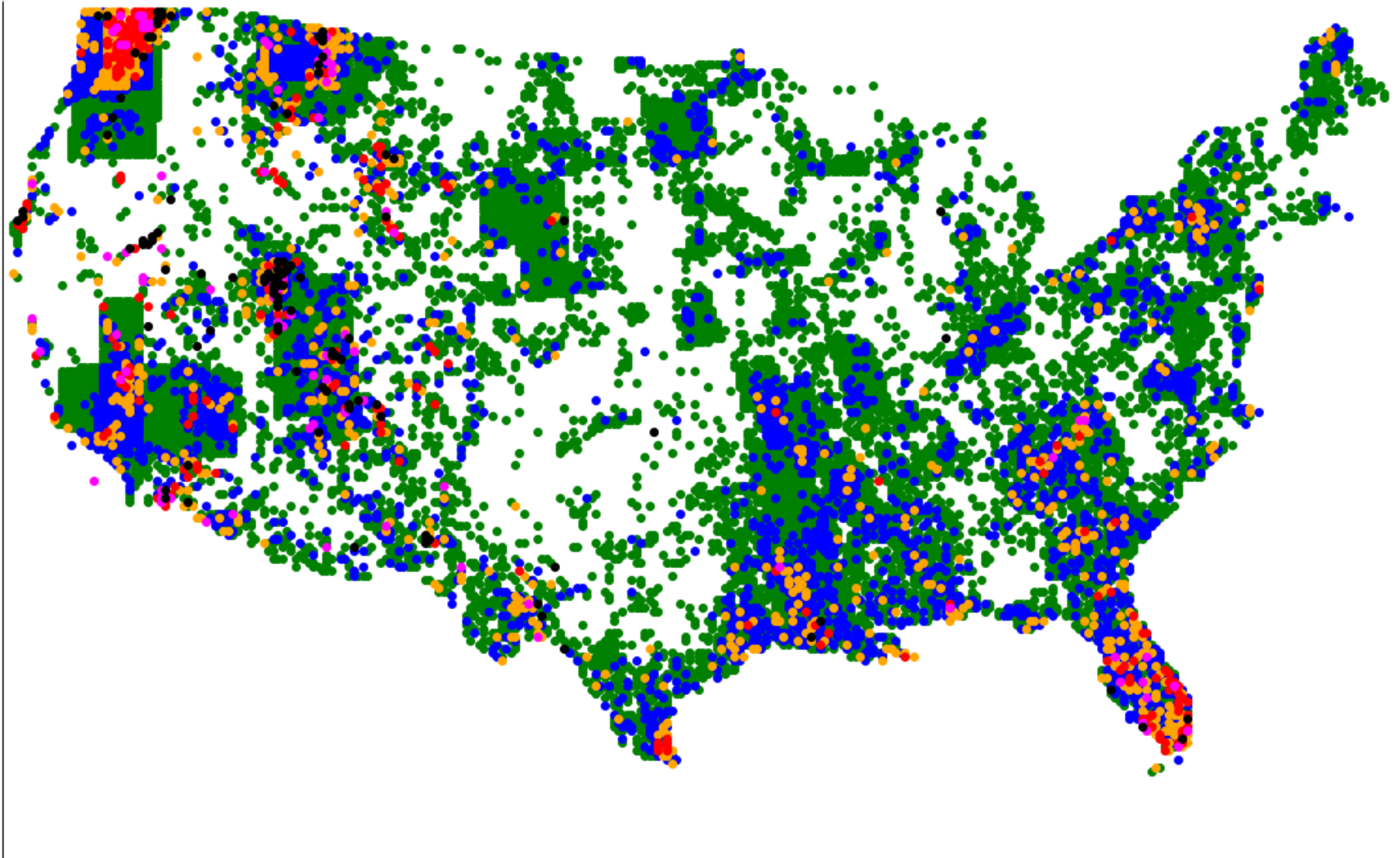


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# Count of Zero Collects across Campaigns



Counts: • 1 • 2 • 3 • 4 • 5 • 6

6 is 6-11 campaigns, from: Count\_per\_campg\_accum



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# Analysis data - CDL

Recode non-Cloud to  
unique Scene ID,  
+5000 for cloud

Merge all mosaic  
of same date  
U.S. extent

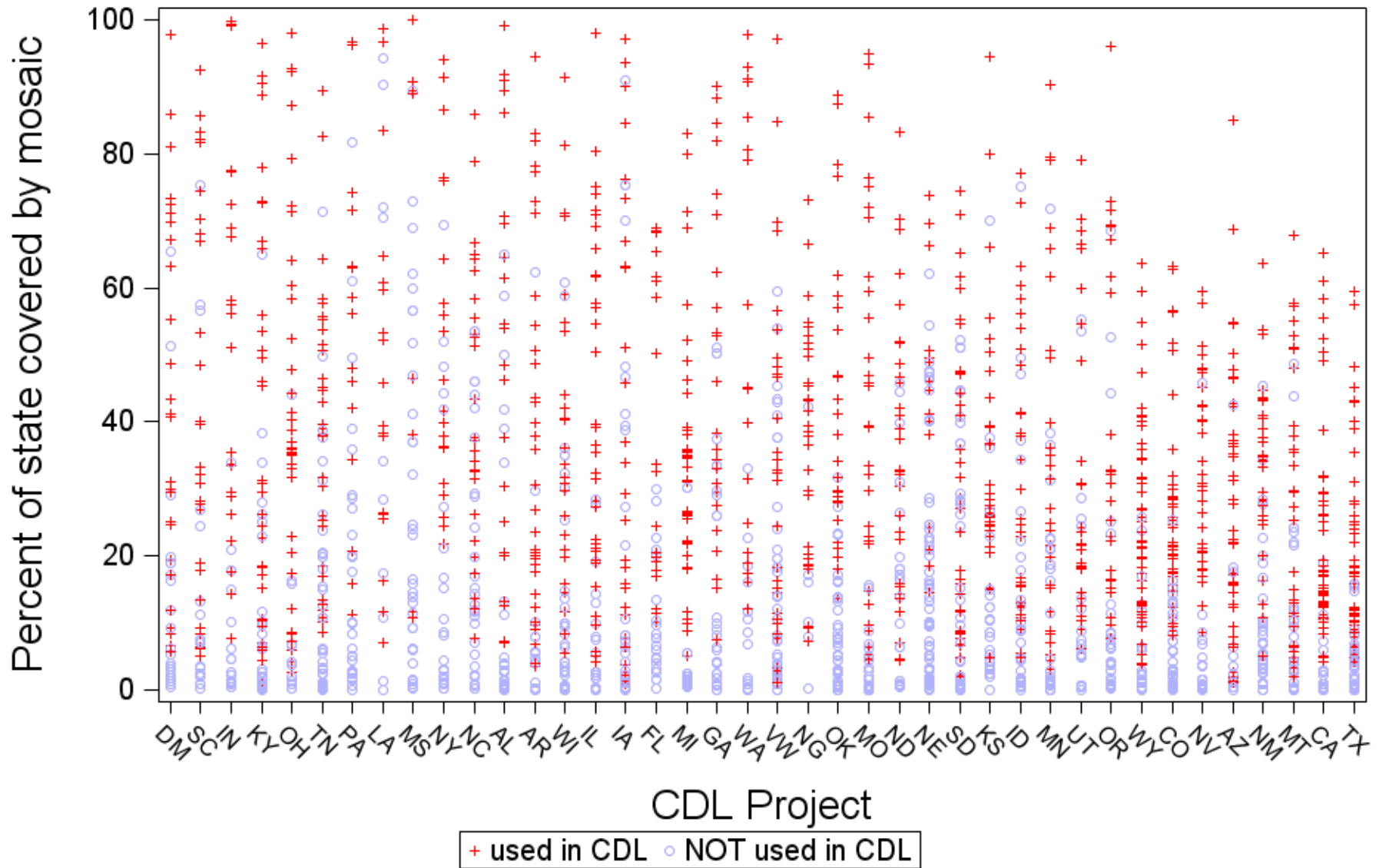
Imagine: Pixel-to-Table  
systematic sample  
every 100<sup>th</sup> pixel  
(State, county, ag. mask)

Import to SAS  
merge tables  
remove zeros

Analysis



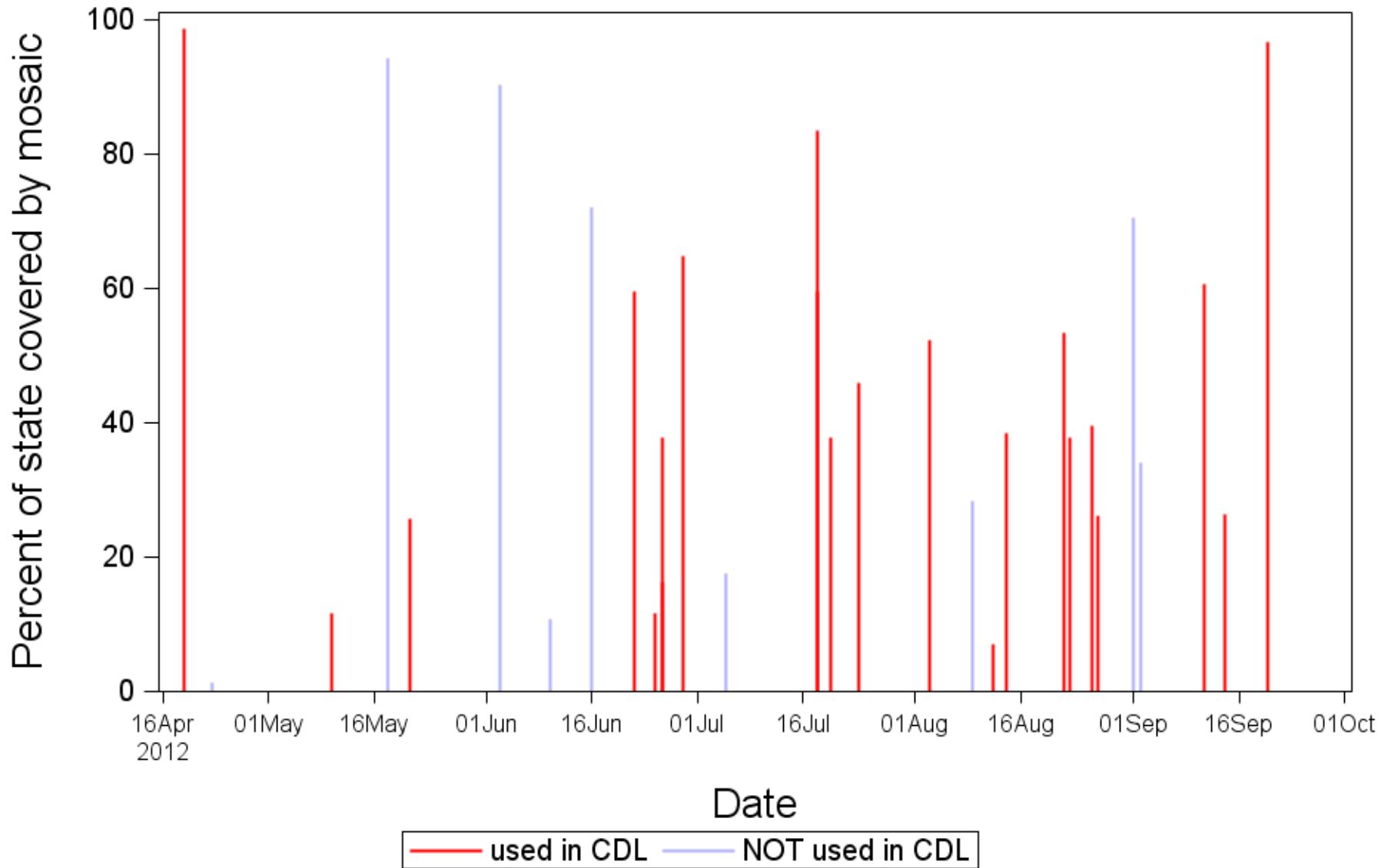
# State Coverage by Mosaics, by Project



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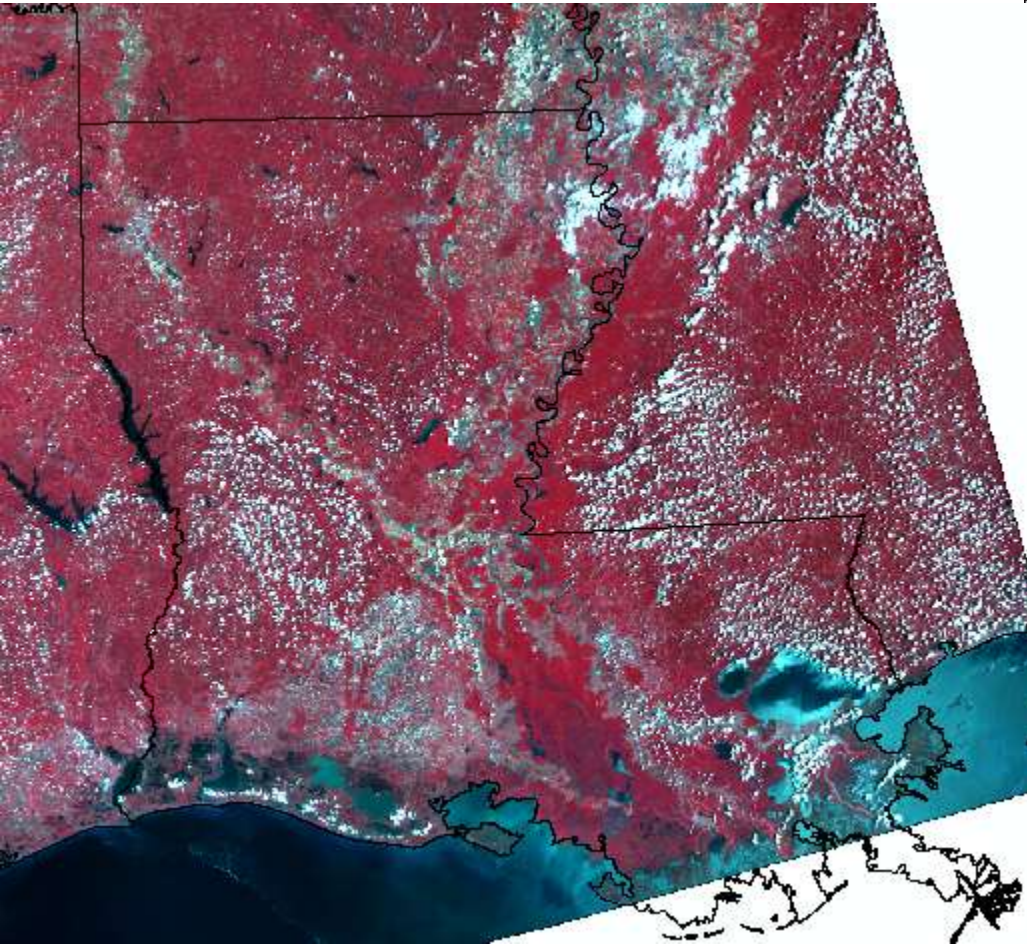
# Mosaic Usage Across Time for LA



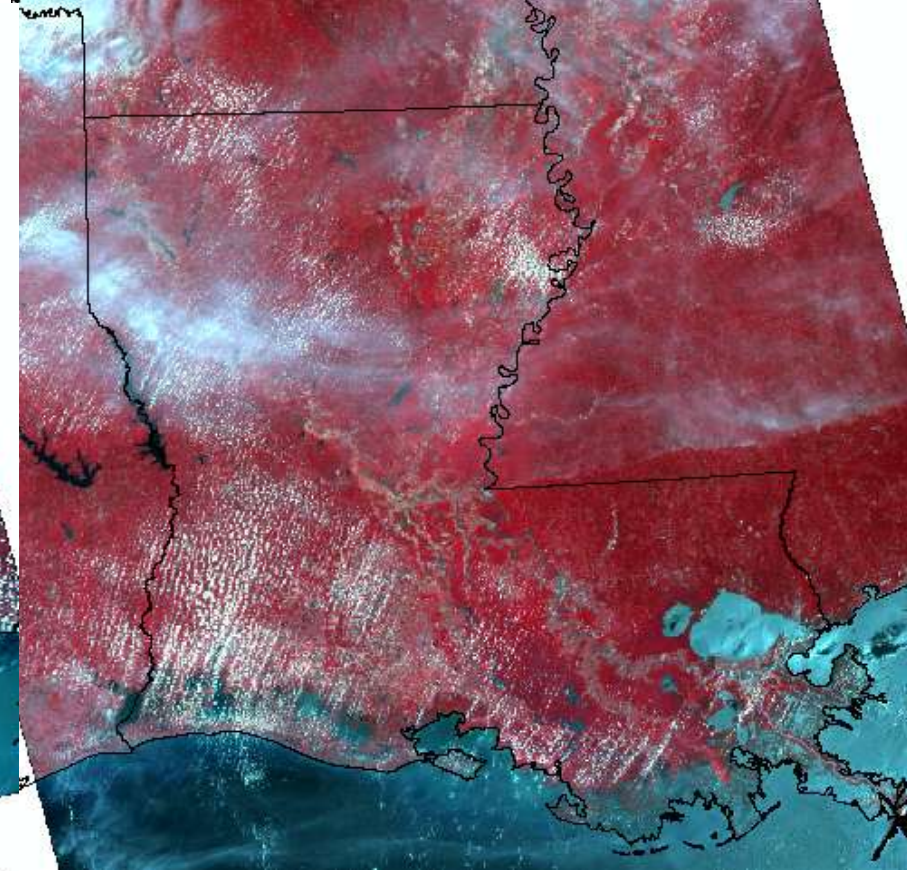
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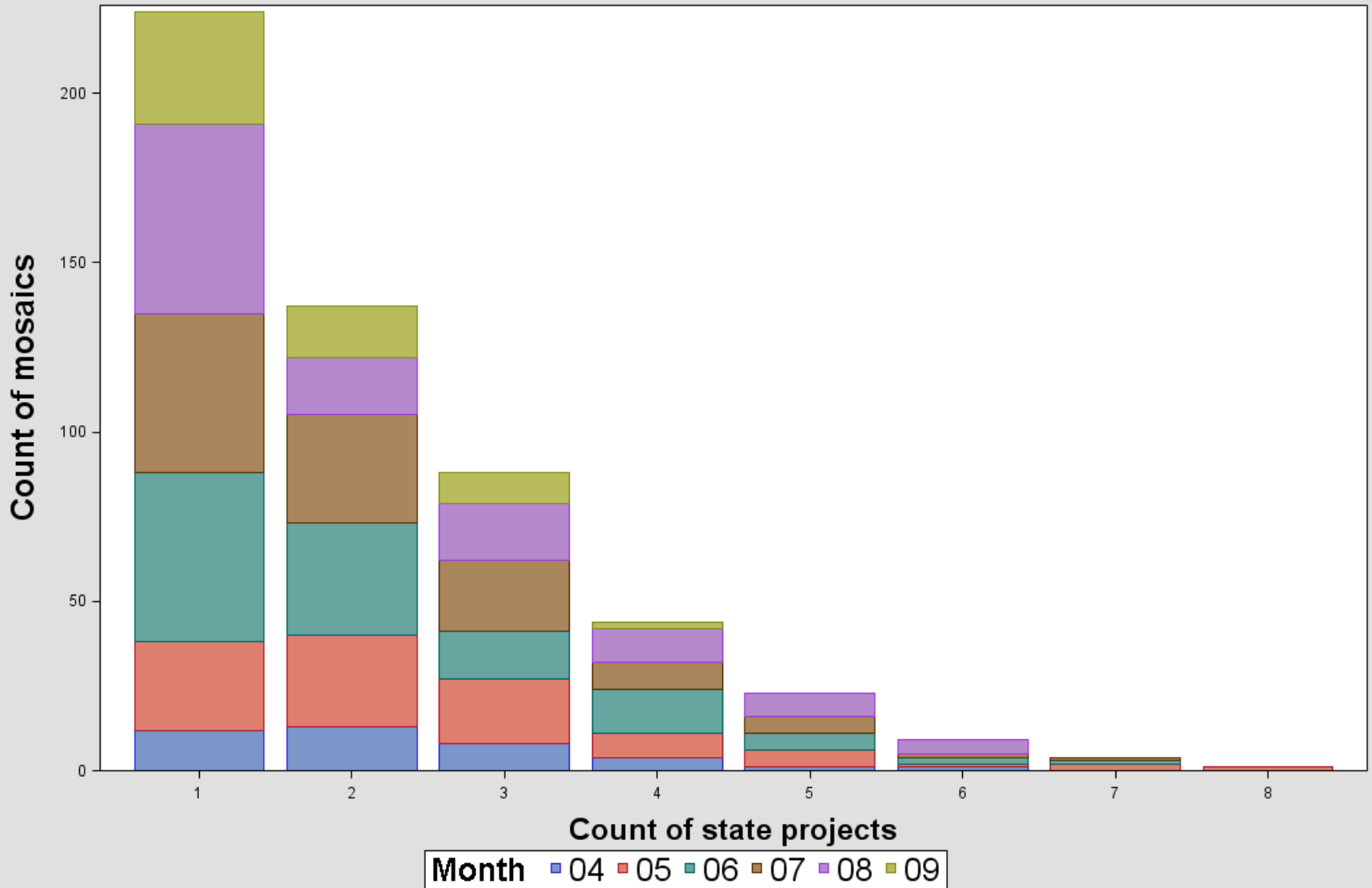
May 18



June 3



# Frequency of Mosaic Usage by Project



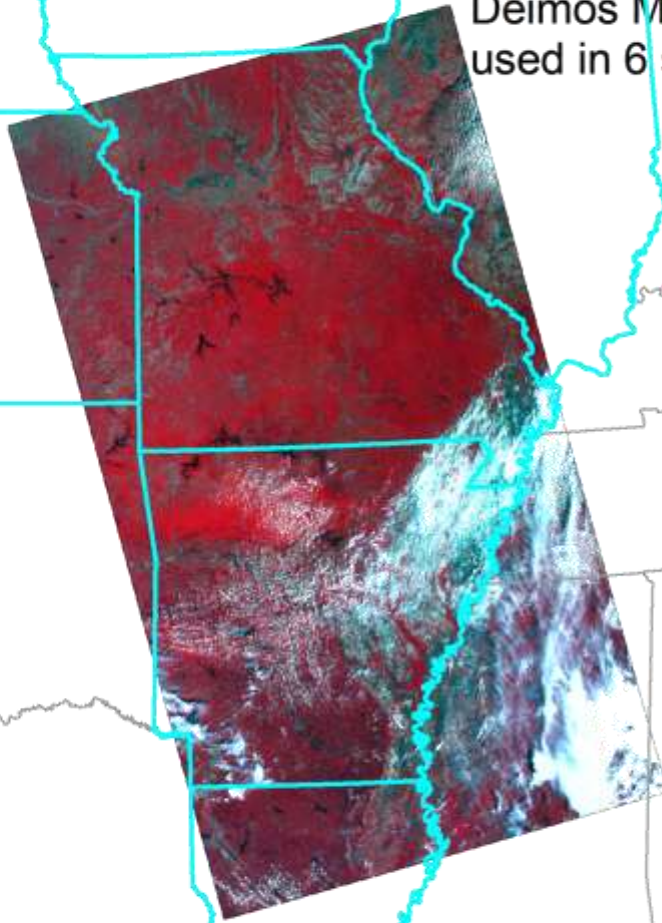
533 of 698, 76% of mosaics from April-Sept. used in CDL production



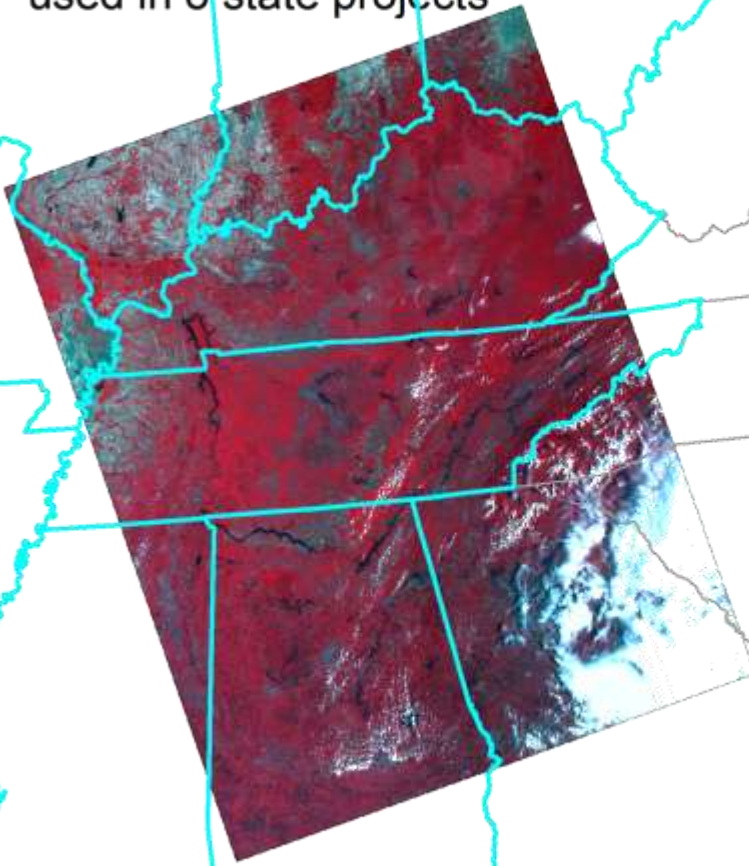
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Deimos May 21, 2012  
used in 6 state projects

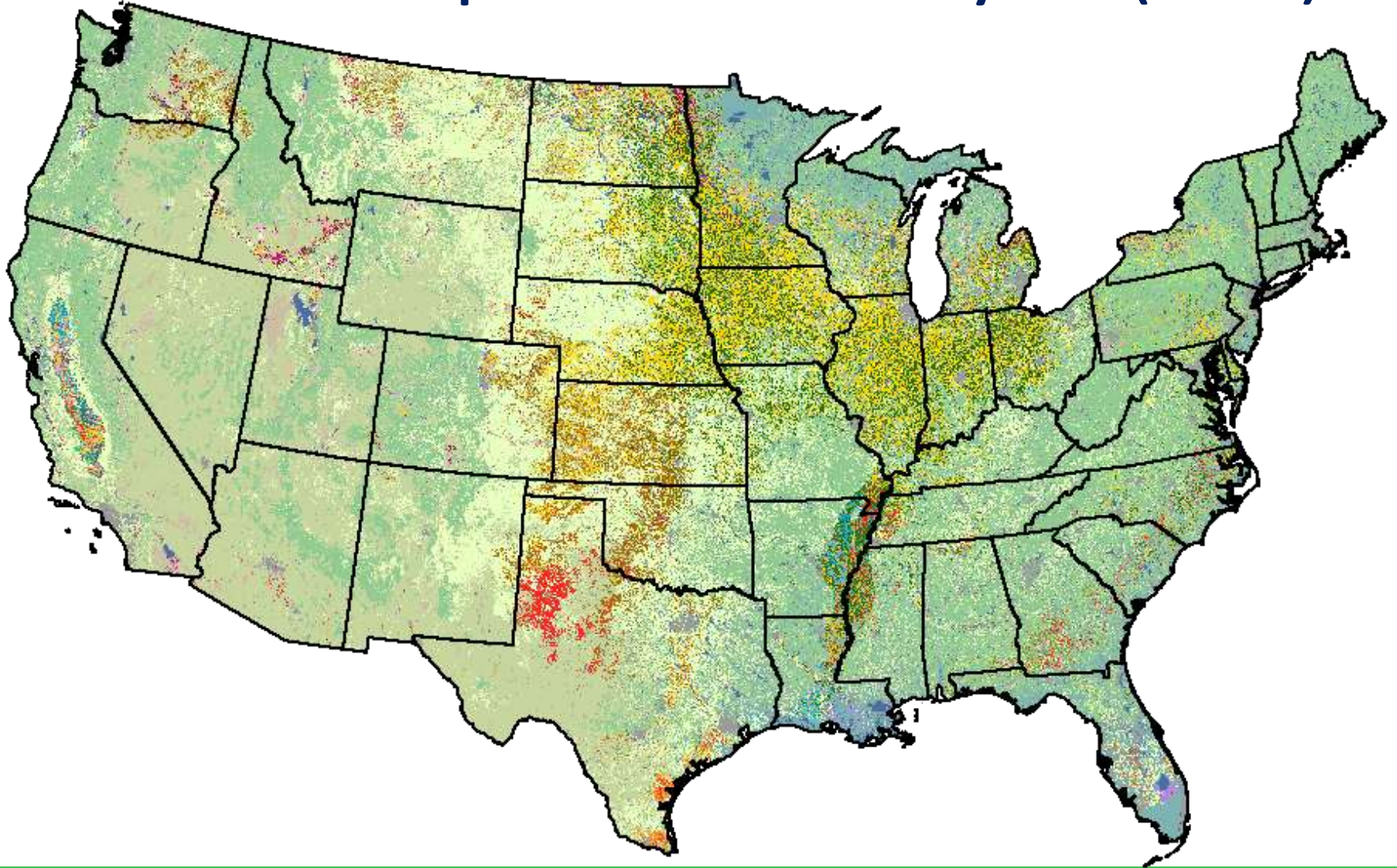


Deimos May 15, 2012  
used in 8 state projects





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