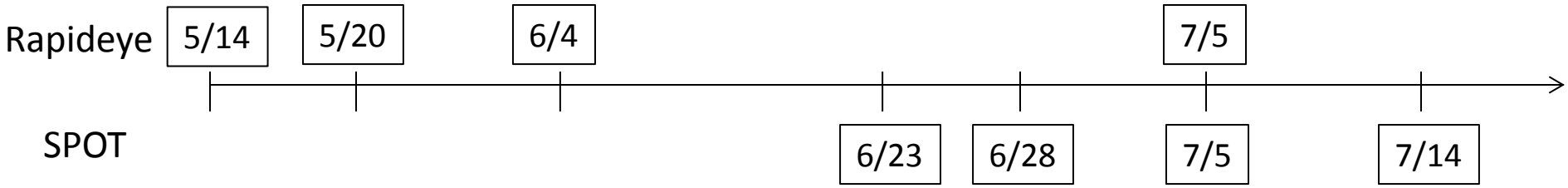
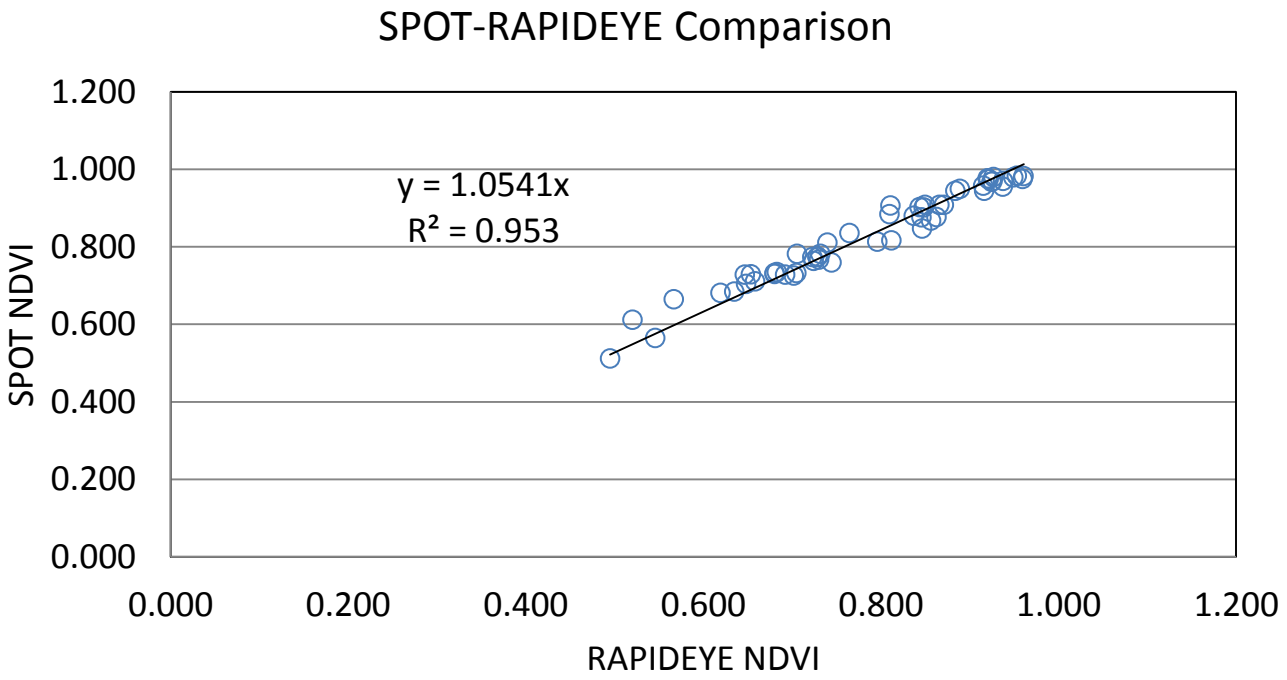
Soil Moisture Active Passive Validation Experiment 2012
SMAPVEX12

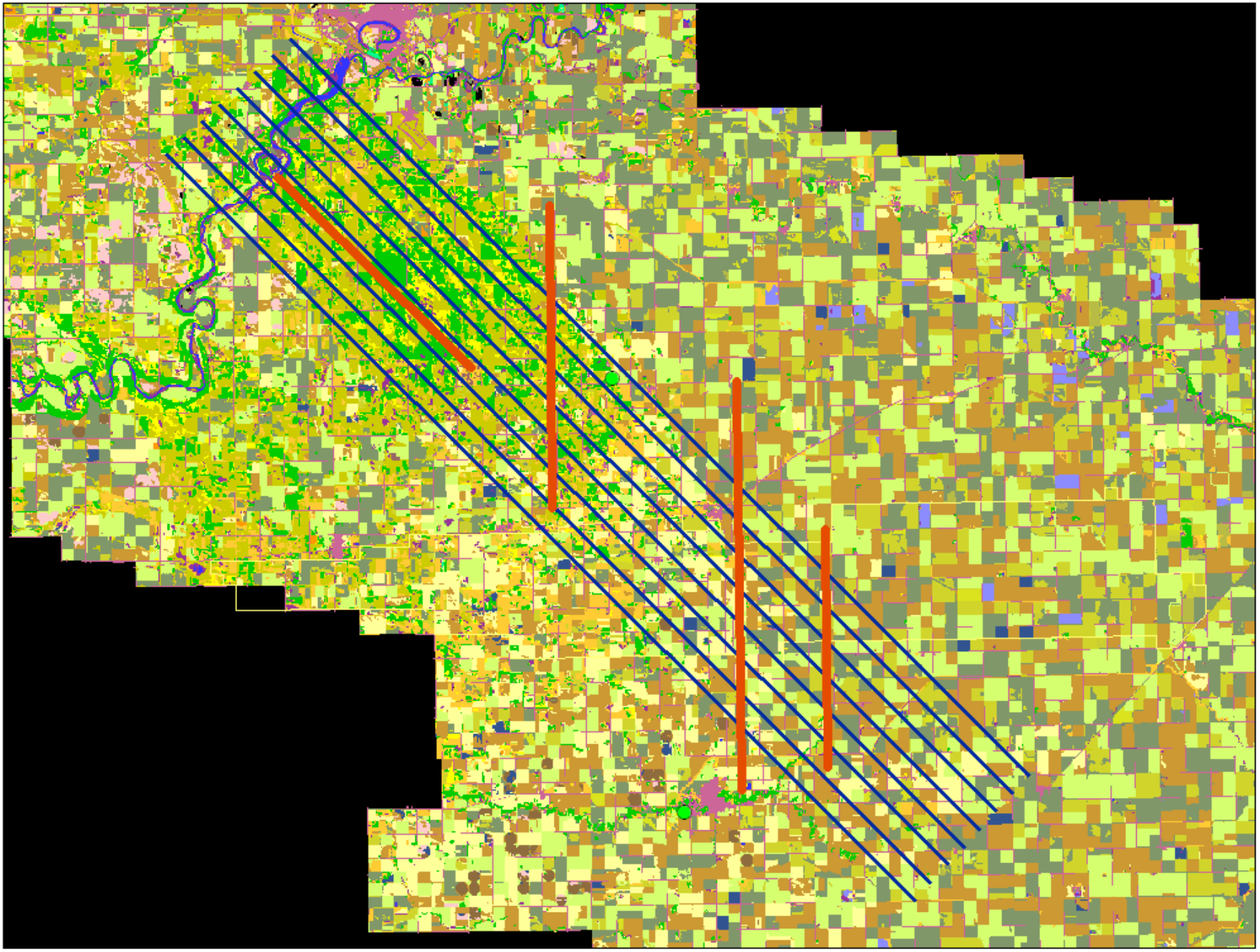
Agriculture and Agri-Food Canada

Vegetation Water Content of the SMAPVEX12 Domain



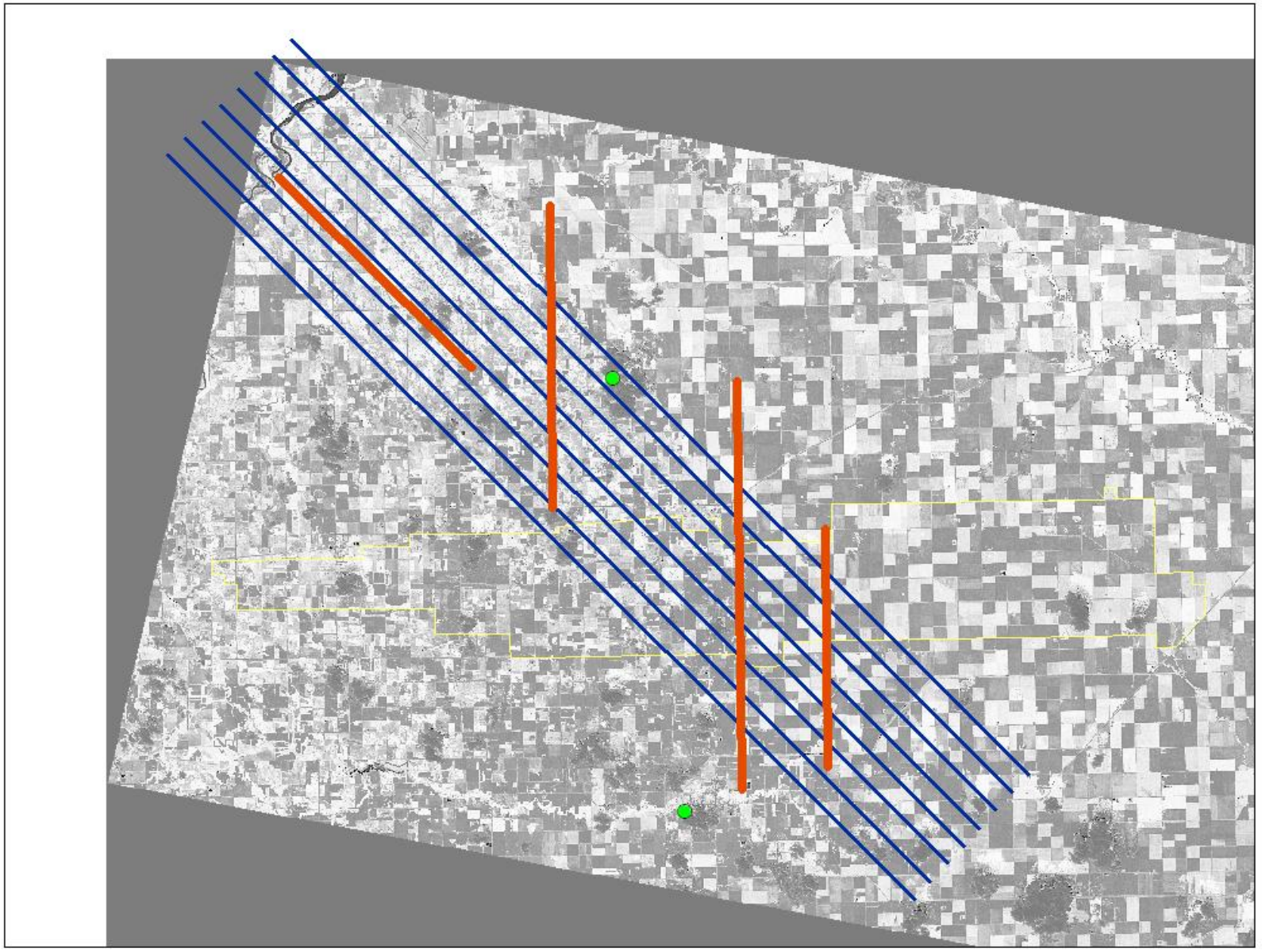
One day of overlap between 2 platforms





Soil Moisture Active Passive Validation Experiment 2012
SMAPVEX12

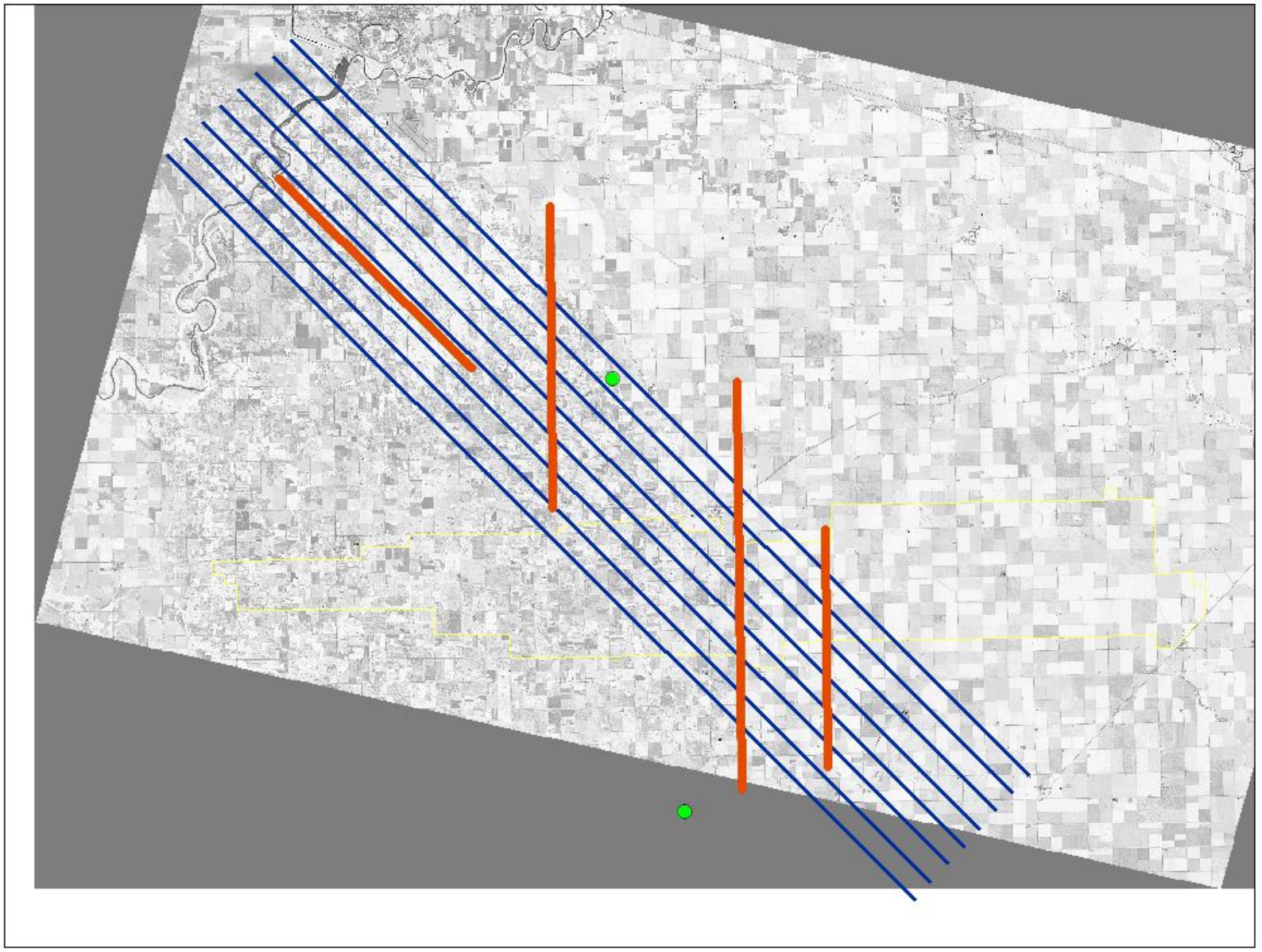
June 4
NDVI



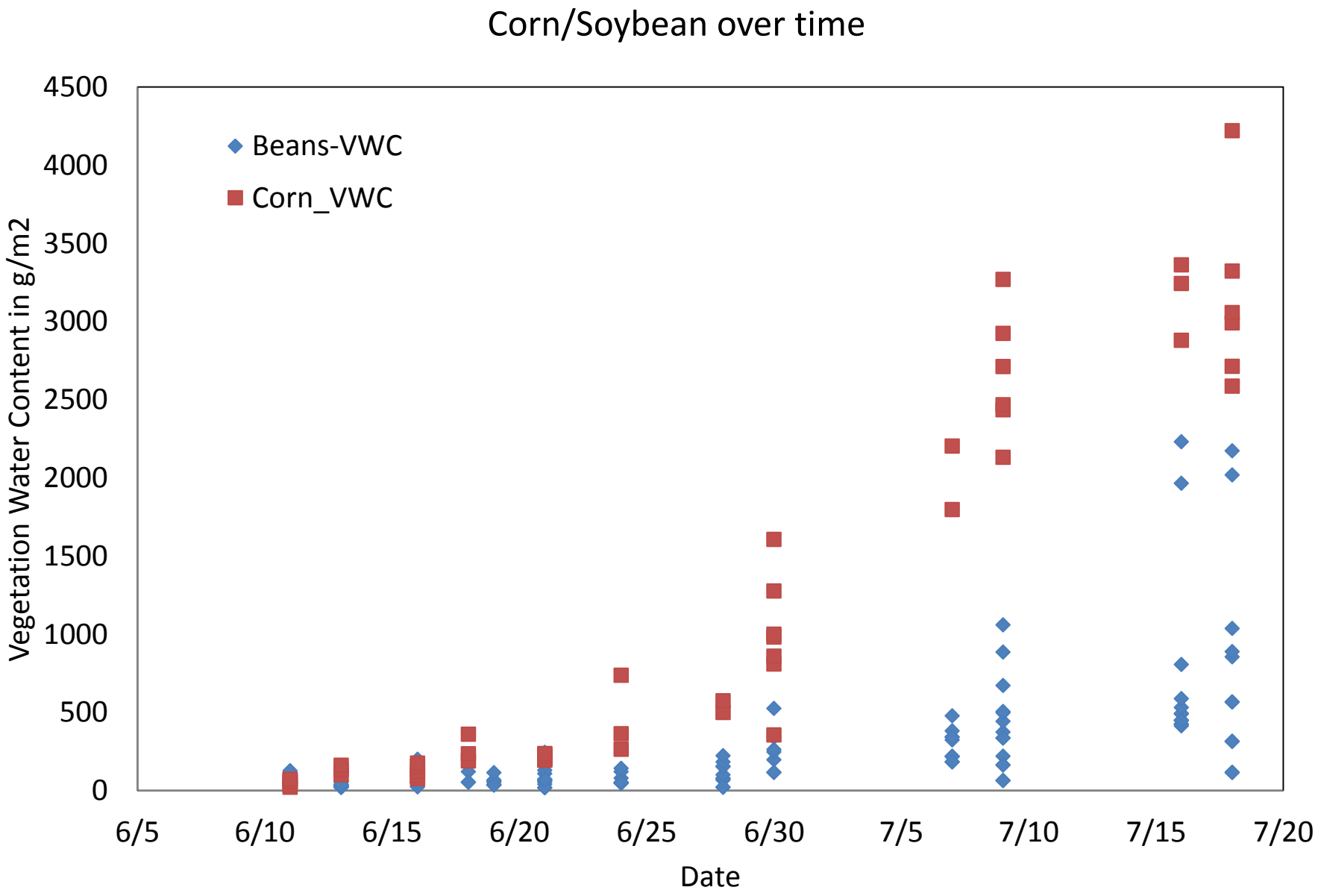
Soil Moisture Active Passive Validation Experiment 2012
SMAPVEX12

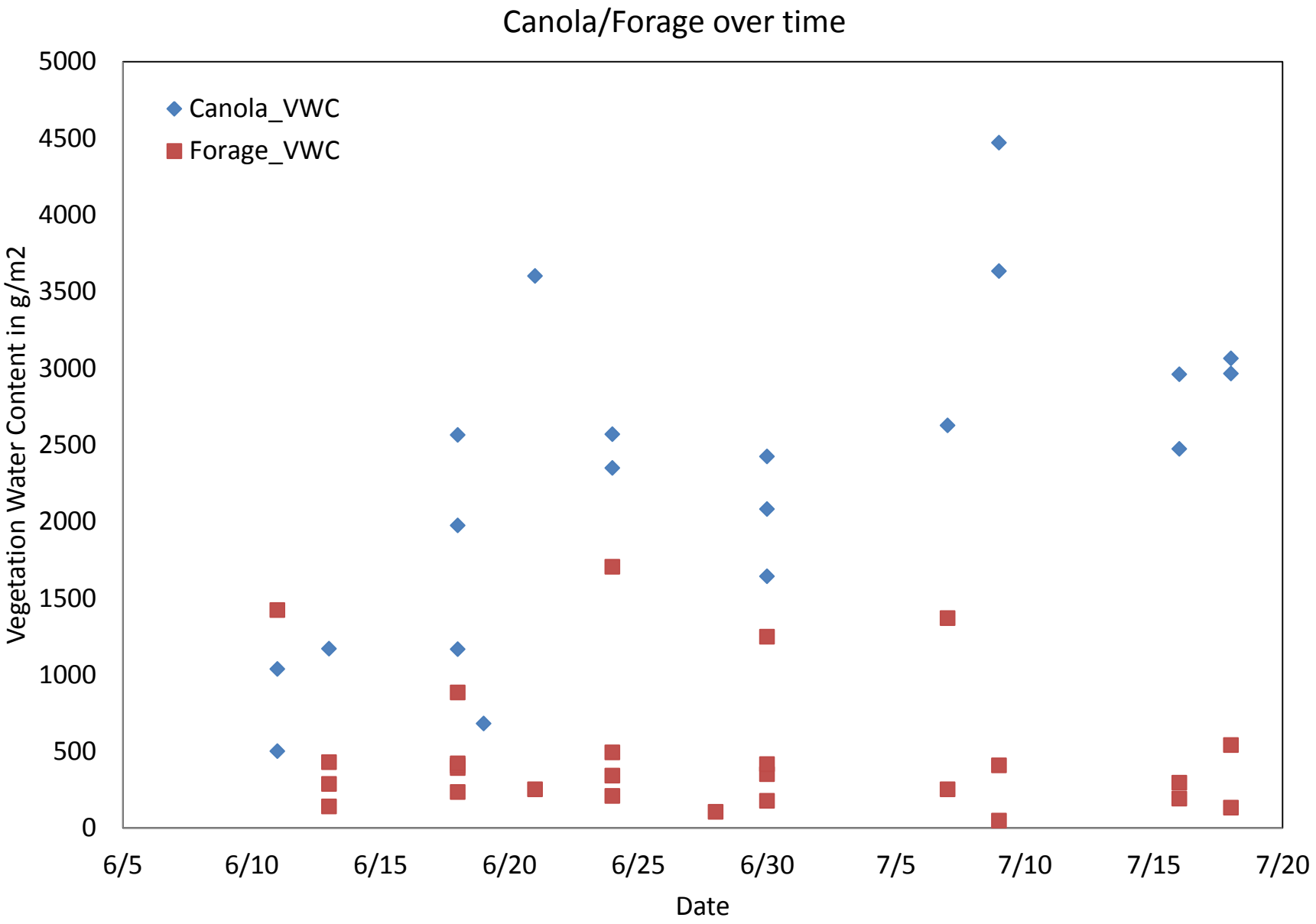
Agriculture and Agri-Food Canada

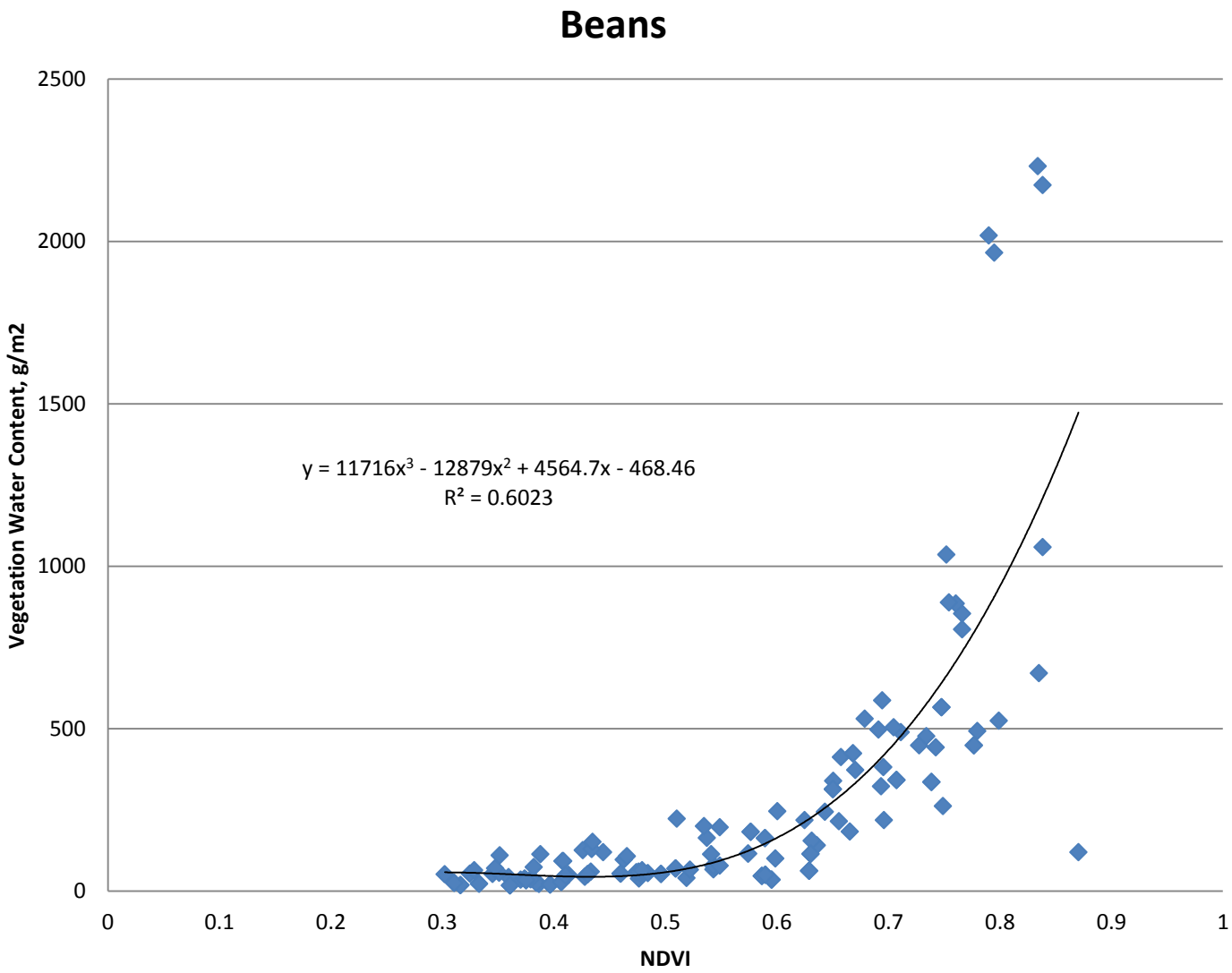
July 5
NDVI

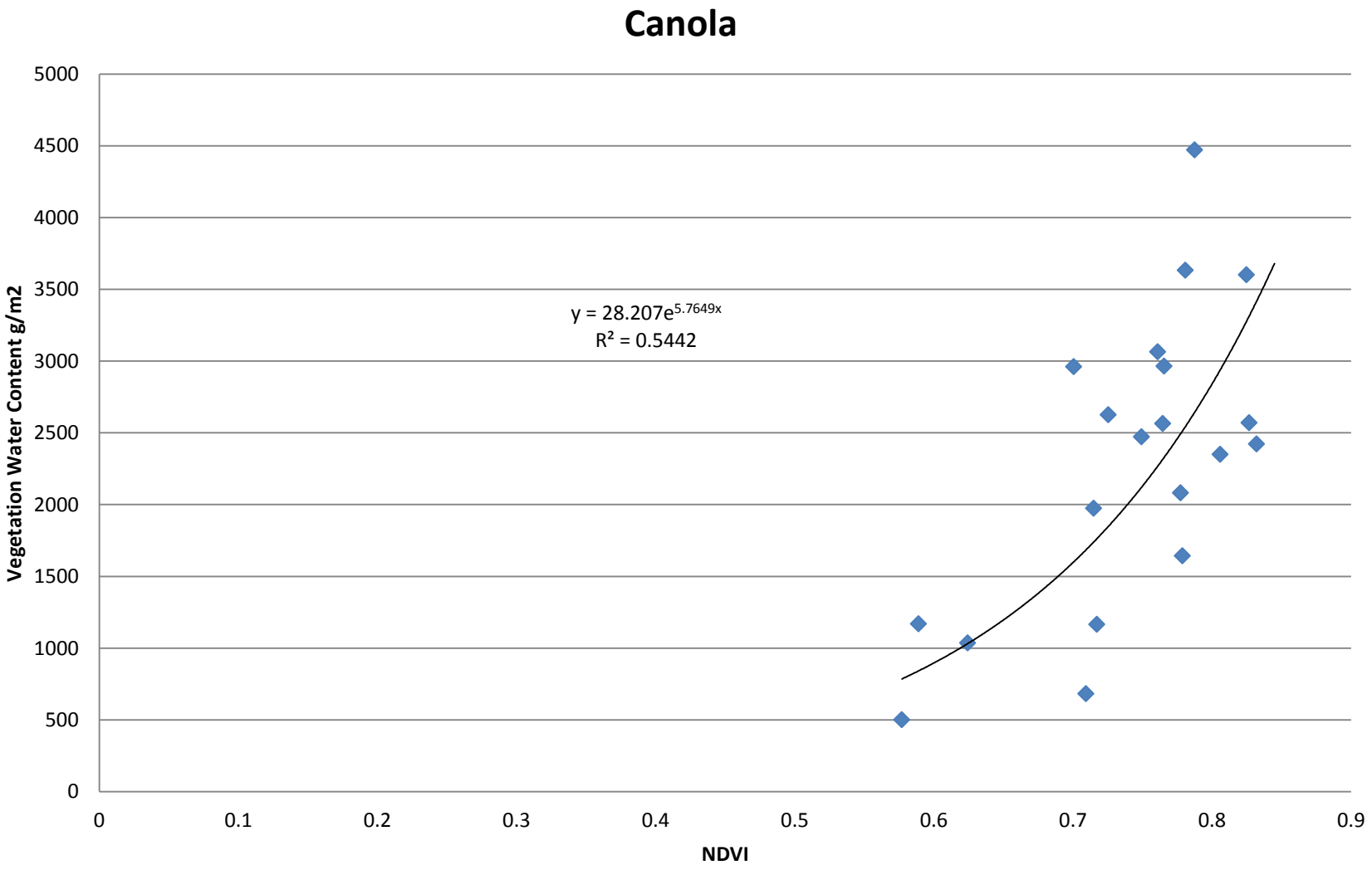


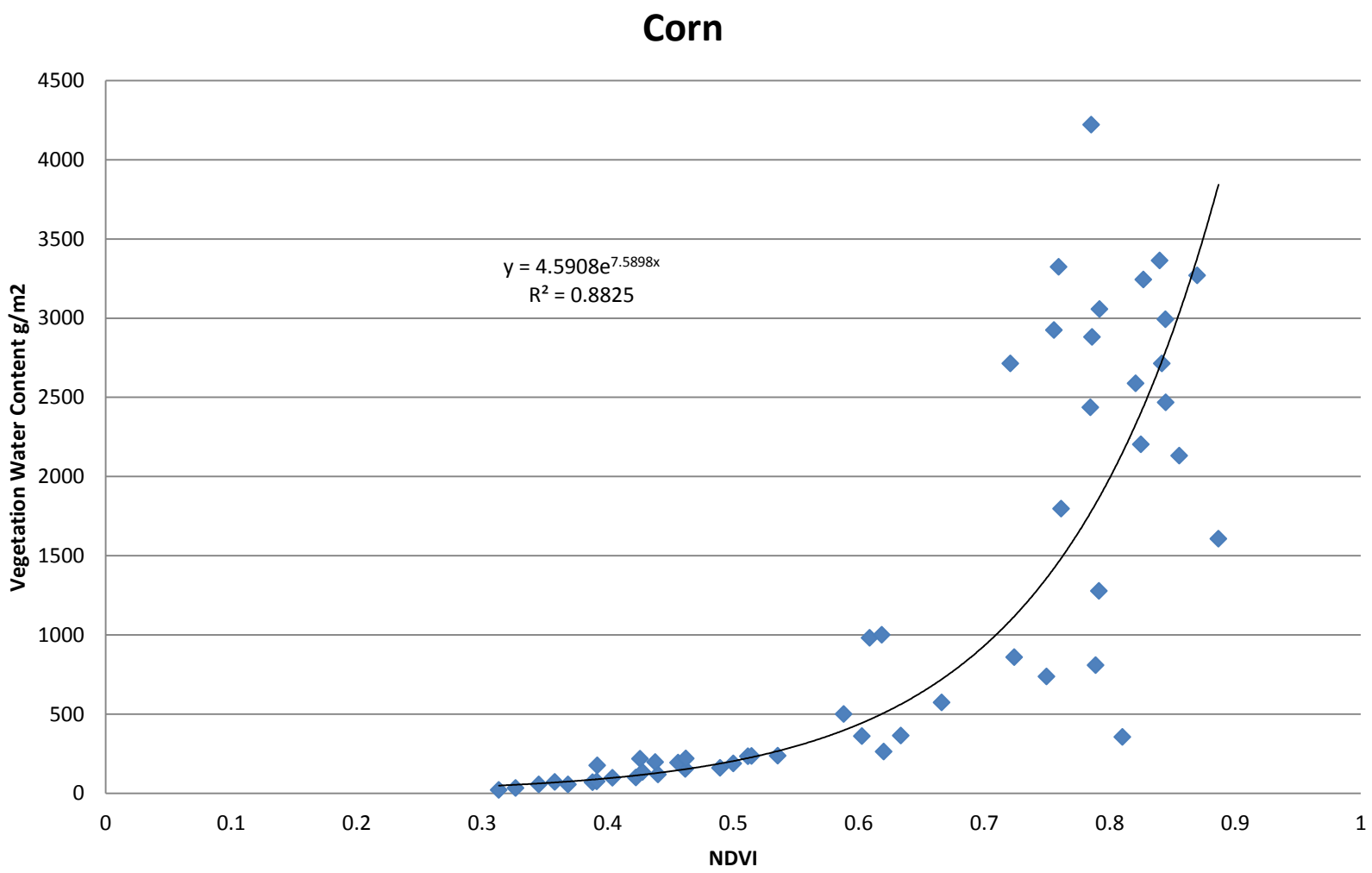
Wheat over time
Vegetation Water Content in g/m2
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
5/31
6/10
6/20
6/30
7/10
7/20
Date
Wheat_VWC
WW_VWC

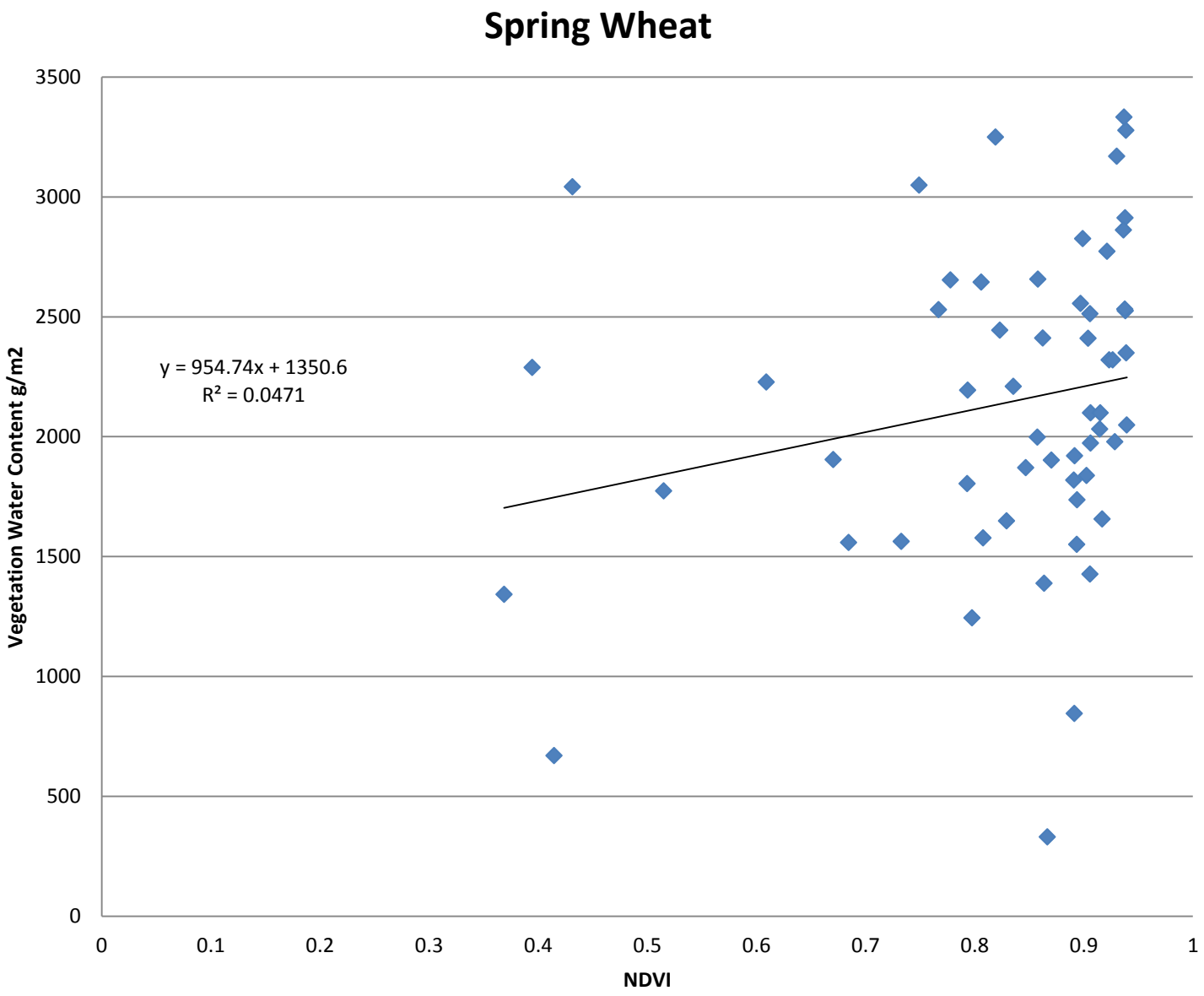

Corn/Soybean over time
Beans-VWC
Corn_VWC
Vegetation Water Content in g/m2
4500
4000
3500
3000
2500
2000
1500
1000
500
0
6/5
6/10
6/15
6/20
6/25
6/30
7/5
7/10
7/15
7/20
Date


Canola/Forage over time
Canola_VWC
Forage_VWC
Vegetation Water Content in g/m2
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
6/5
6/10
6/15
6/20
6/25
6/30
7/5
7/10
7/15
7/20
Date


Beans
Vegetation Water Content, g/m2
2500
2000
1500
1000
500
0
y = 11716x³ - 12879x² + 4564.7x - 468.46
R² = 0.6023
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
NDVI


Canola
Vegetation Water Content g/m2
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
NDVI
y = 28.207e5.7649x
R² = 0.5442


Corn
y = 4.5908e^7.5898x
R² = 0.8825
Vegetation Water Content g/m2
NDVI
0
500
1000
1500
2000
2500
3000
3500
4000
4500
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Spring Wheat
y = 954.74x + 1350.6
R² = 0.0471
Vegetation Water Content g/m2
NDVI
3500
3000
2500
2000
1500
1000
500
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

Crop Type	Vegetation Water Content, kg/m^2
Beans/Soybeans	0.250
Canola	0.800
Corn	0.760
Forage/Pasture	0.164/0.130
Spring Wheat	0.620
Winter Wheat	0.660

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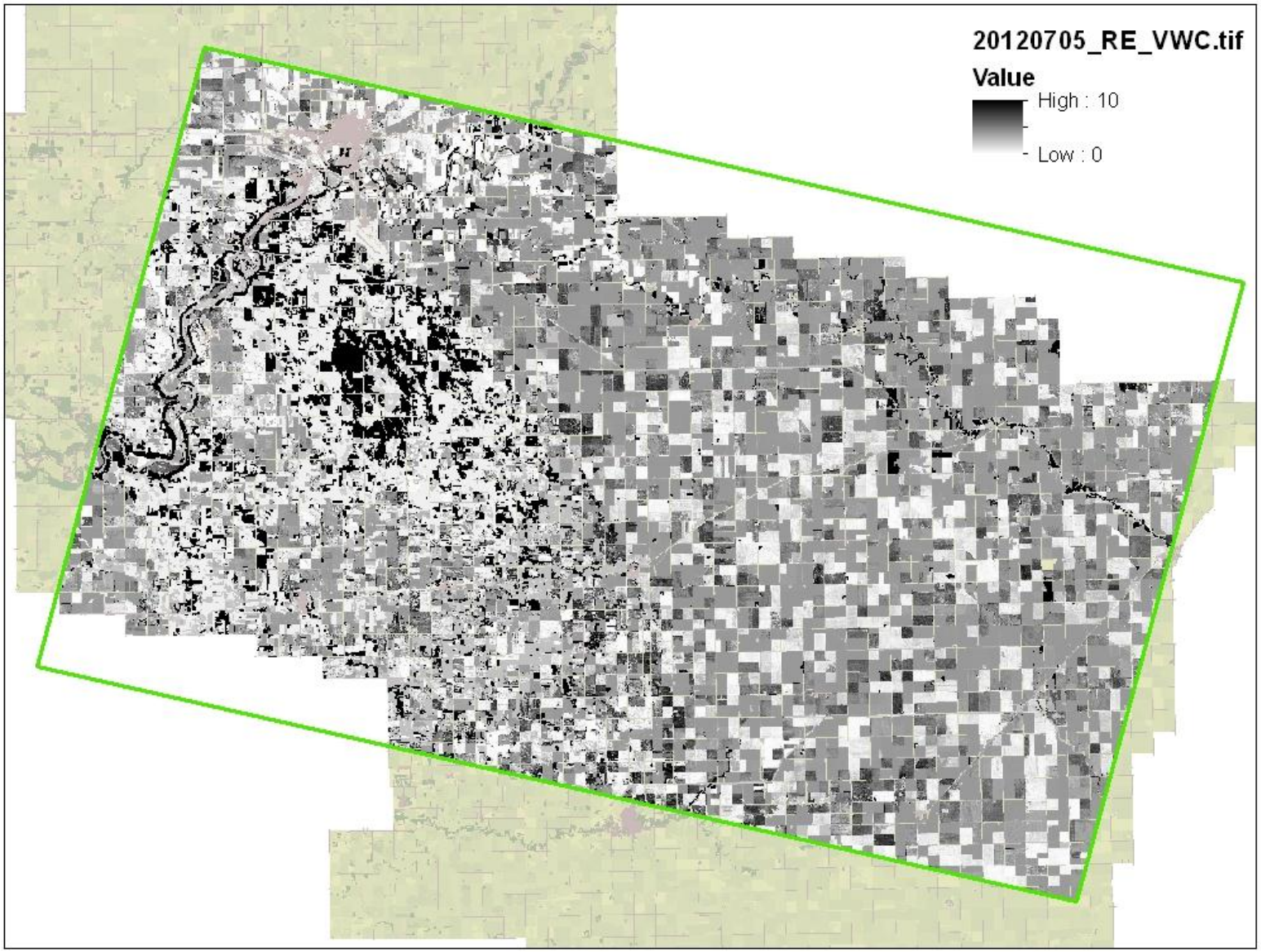

Open Issues:

Forests?

Bounds of Domain?

Pasture/Forage Constant?

Field Averaged NDVI used currently, cropscan not utilized.

What is final resolution, 5, 10 m?