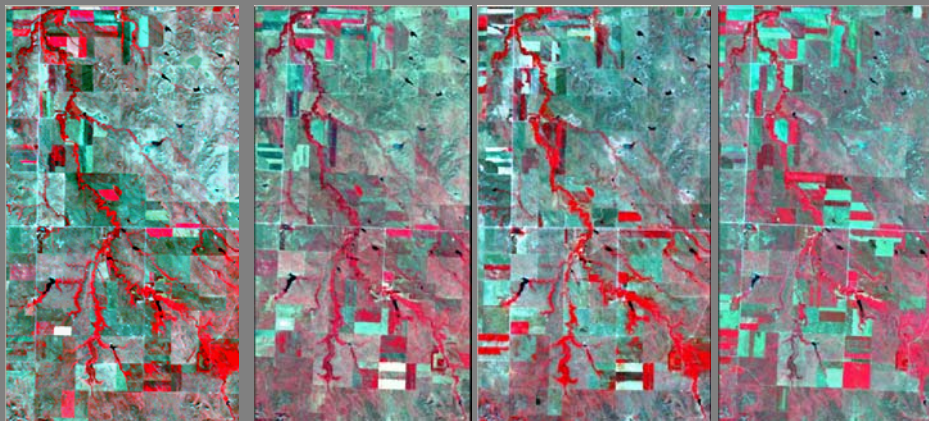


SAVI

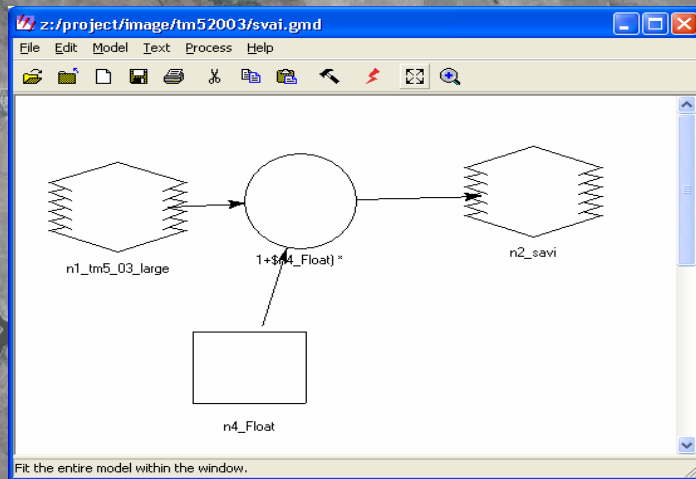
- Soil Adjusted Vegetation Index
- $SAVI = (1+L)(NIR-RED)/(NIR+RED+L)$
- $L = .5$ for most crop types

(Xavier & Vettorazzi 2004)

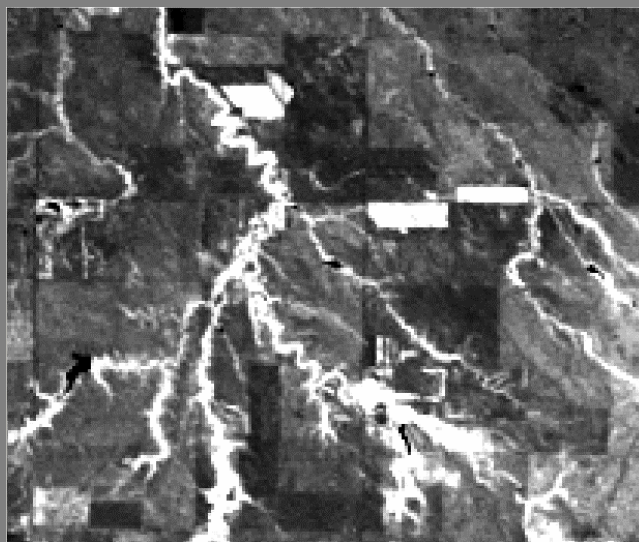
Satellite Images



SAVI Model



SAVI Image



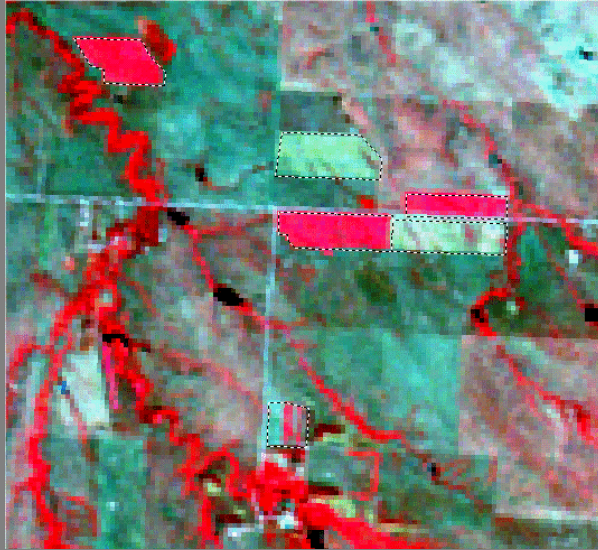
Landsat 7 ETM+ Settings

Gain Band 1	High
Gain Band 2	High
Gain Band 3	High
Gain Band 4	Low
Gain Band 5	High
Gain Band 6H	High
Gain Band 6L	Low
Gain Band 7	High
Gain Band 8	Low

Corrected Image





AOI's of Fields



Imagine Zonal Statistics

Save Zonal Statistics To Polygon Attributes

Vector Layer: (*.arcinfo) 

Raster Layer: (*.img) 

Window:
☐ Union ☒ Intersection

Data Type: None
Select Layer:

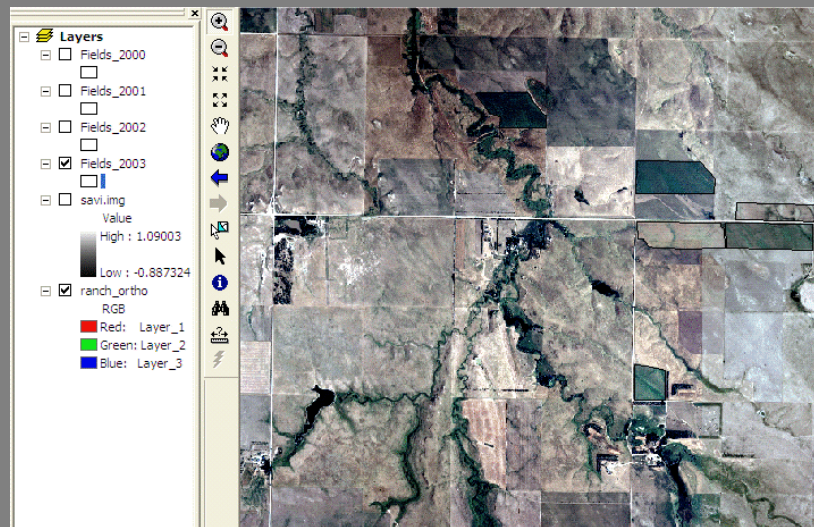
☐ Ignore Zero in Zonal Calculations

Zonal Functions:

<input type="checkbox"/> Majority	Attribute Name:	MAJORITY
<input type="checkbox"/> Max	Attribute Name:	MAXIMUM
<input type="checkbox"/> Min	Attribute Name:	MINIMUM
<input type="checkbox"/> Mean	Attribute Name:	MEAN
<input type="checkbox"/> Median	Attribute Name:	MEDIAN
<input type="checkbox"/> Diversity	Attribute Name:	DIVERSITY
<input type="checkbox"/> Range	Attribute Name:	RANGE
<input type="checkbox"/> Standard Deviation	Attribute Name:	STD_DEV
<input type="checkbox"/> Majority Count	Attribute Name:	MAJ_COUNT
<input type="checkbox"/> Majority Fraction	Attribute Name:	MAJ_FRAC

OK Batch AOI ... Cancel Help

Shape files of Fields

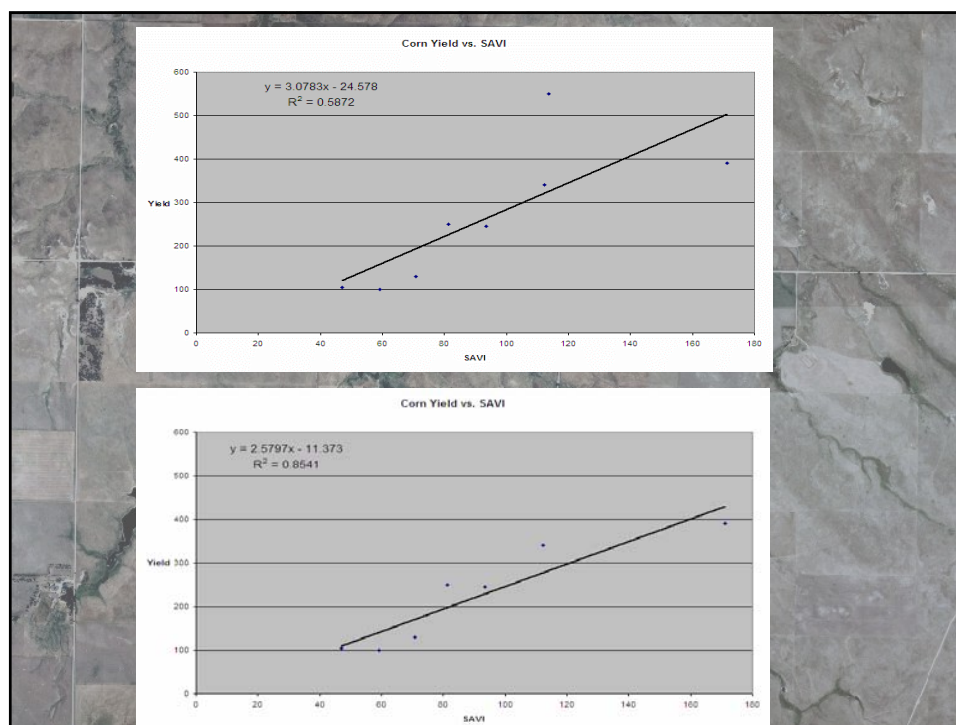
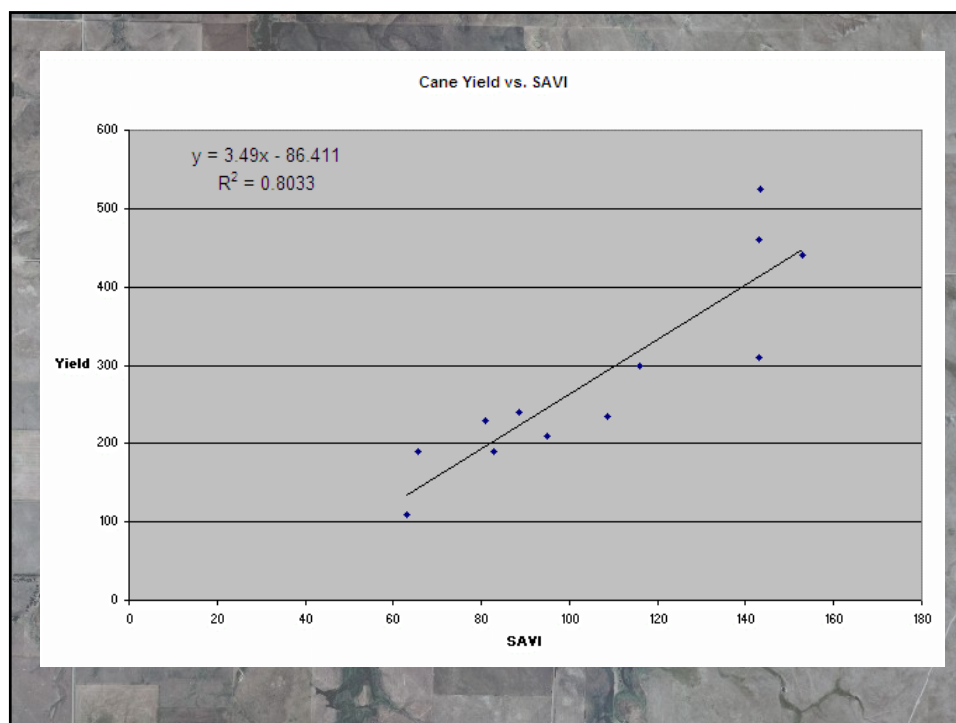


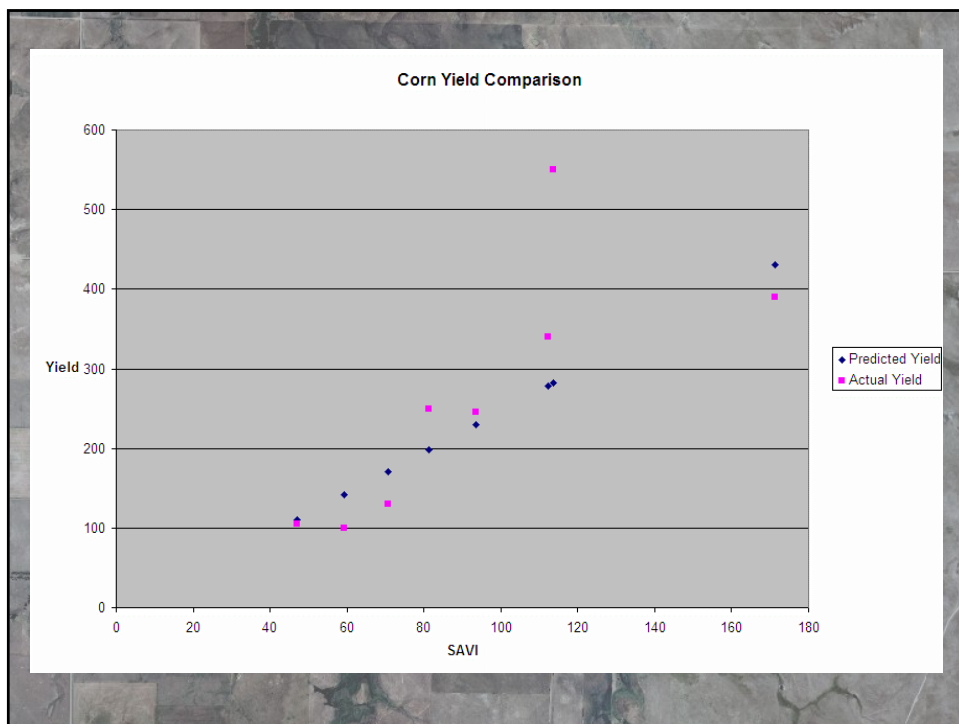
Zonal statistics

Attributes of 2001

VALUE*	COUNT	AREA	MIN	MAX	RANGE	MEAN	STD	SUM
1	88	79200	0.376518	0.939502	0.562984	0.745119	0.151993	65.5704
2	211	189900	0.238806	0.574163	0.335357	0.443521	0.065432	93.583
3	194	174600	0.240964	0.901099	0.660135	0.739302	0.134546	143.425
4	153	137700	0.186529	0.814634	0.628106	0.419751	0.1081	64.222
5	113	101700	0.344681	0.914498	0.569817	0.734284	0.120302	82.974
6	196	176400	0.2287	0.840467	0.611767	0.414988	0.085939	81.3376

Record: 1 | Show: All Selected | Records: (0 out of 6 Selected) | Options





Conclusions

- Positives:
SAVI can be used to predict crop yields with fairly accurate results,
Could be implemented on a large or small scale
- Limitations:
Must have prior knowledge of crop type,
To make predictions more accurate one must have many known yields with images