



<http://www.spc.noaa.gov>



<http://climate.met.psu.edu>

Natural Hazards - PA

Final Project – Geog 363 S.02
Aaron Marks



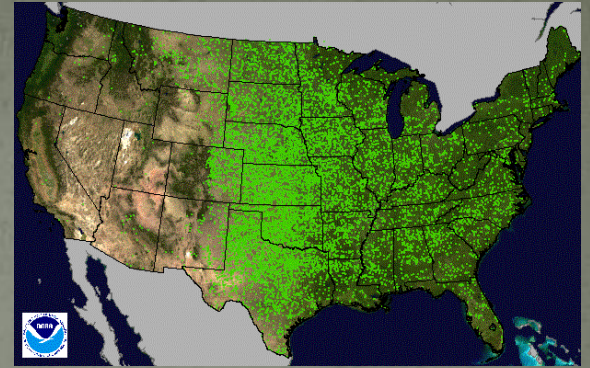
<http://www.ec.gc.ca>



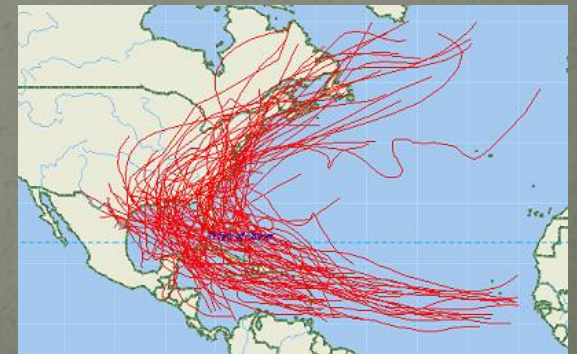
<http://www.agu.org>

Objectives

- Represent Past Hazards (Data)
 - As much data as possible
 - Natural Hazards
 - Other?
- Predict High Risk Areas (Analysis)
 - Interpolate, Estimate, Classify
- Present Overall Danger (Results)
 - Combine Classified Maps



<http://www.spc.noaa.gov>



<http://www.mapcruzin.com>

Data sources



PASDA

PENNSYLVANIA
SPATIAL DATA ACCESS

The Pennsylvania Geospatial Data Clearinghouse

- PASDA – <http://www.pasda.psu.edu>
Pennsylvania county boundaries - 2011 PennDOT
- National Atlas - <http://nationalatlas.gov>
Earthquakes 1568-2009 - June 2010
Hurricane paths 1851-2004 - 2005
- NOAA – National Weather Service
Storm Prediction Center -
<http://www.spc.noaa.gov/gis/svrgis/>
Tornado Touchdown pts 1950-2010
Hail 1955-2010
Wind 1955-2010



Methods

- Database – ArcCatalog
- Project - NAD83_GEO
- Time Frame – 1955-2000
- Area Selection - PA
- Joins!
- Interpolate – IDW/Kriging
- Classify



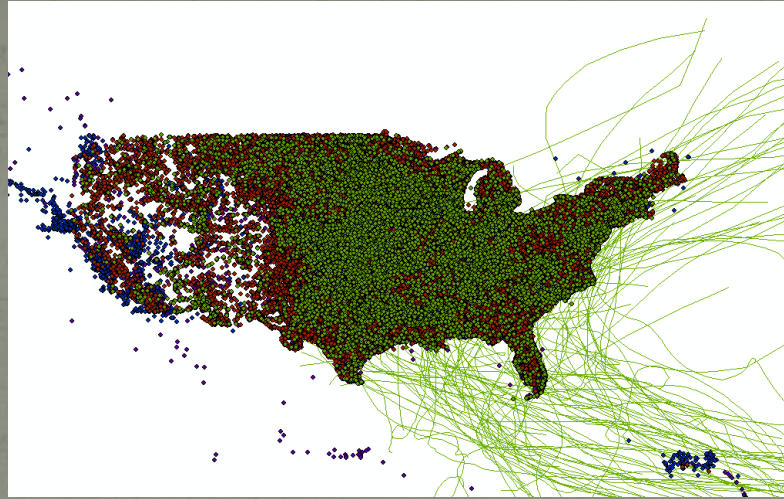
Attributes of Voting Precincts

ID	ZONE	SHAPE_area	SHAPE_len	X	Y
C	1	20349489.559	77253.403175	1434239.89444	640973.208431
C	1	126519092.059	93639.304992	1422272.24816	640959.979612
C	1	254200613.329	91354.903613	1464464.8684	633192.39992
C	1	14390328.360	86134.50166	1426233.00245	631734.162767
C	1	80401392.1945	39352.37954	1441178.34619	613857.199521
C	1	140202145.159	56465.120141	1455975.87676	614195.576176
C	1	385430480.387	92205.070917	1460638.91751	604426.592595
C	1	533997059.33	136488.366667	1428451.33926	592799.503212
C	1	157960094.053	69150.224149	1439991.00713	604071.109006
B	1	10621287.611	49139.70437	1475071.07098	598126.277991
B	1	86178542.9182	38713.452117	1472798.01646	593005.435615
B	1	20669756.473	73308.896399	1481151.8944	582965.312093
C	3	24919201.118	77716.263691	1462683.7375	598234.82937
B	1	40811438.5195	42346.056383	1468540.46877	584807.536459
B	1	75739107.1501	37671.00967	1462990.97191	576232.020162
C	3	14434442.320	59991.752217	1450564.49216	627845.416669
A	3	158476109.841	65390.503227	1443060.76206	574116.31816
A	3	42186816.0469	35272.674373	1463492.87259	615757.896286
A	2	16665570.048	4447.065594	1432000.46777	671199.736737
A	3	67318674.7303	45690.699963	1467277.7301	674631.916904

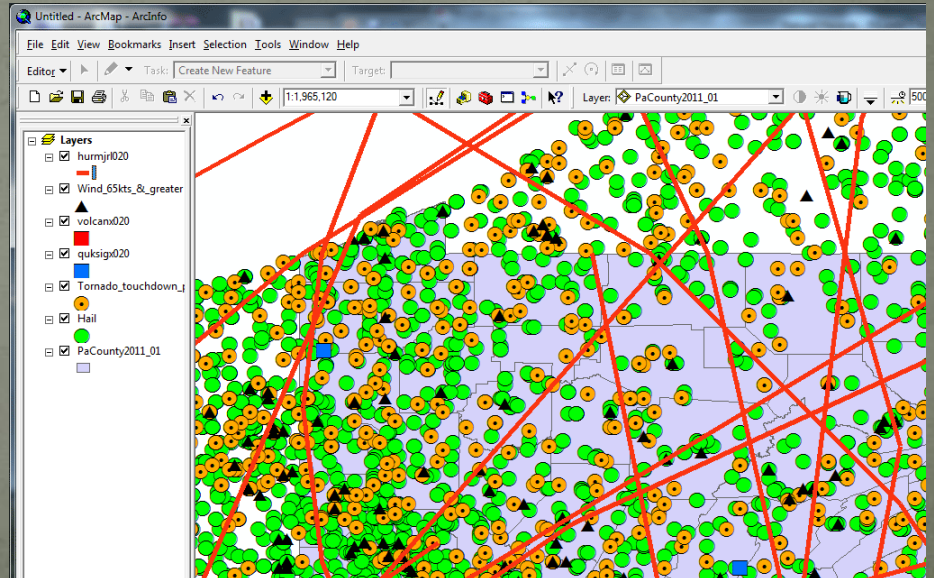


Results – Thus Far

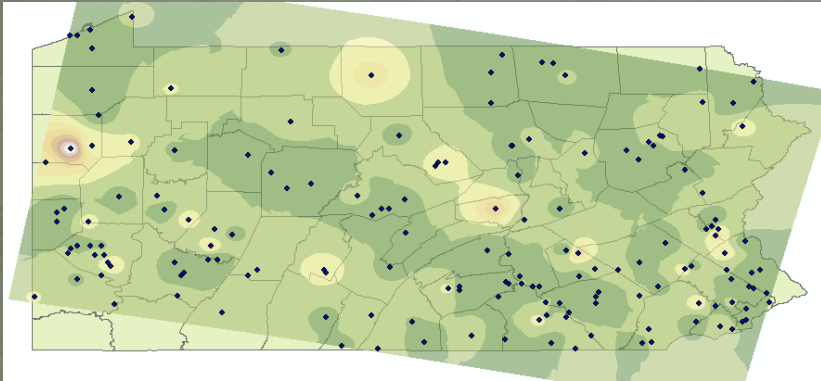
- Lots of data



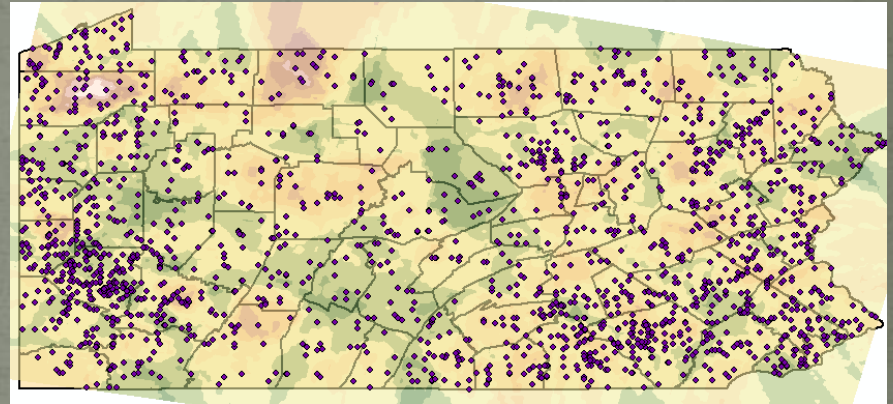
- Too Much...



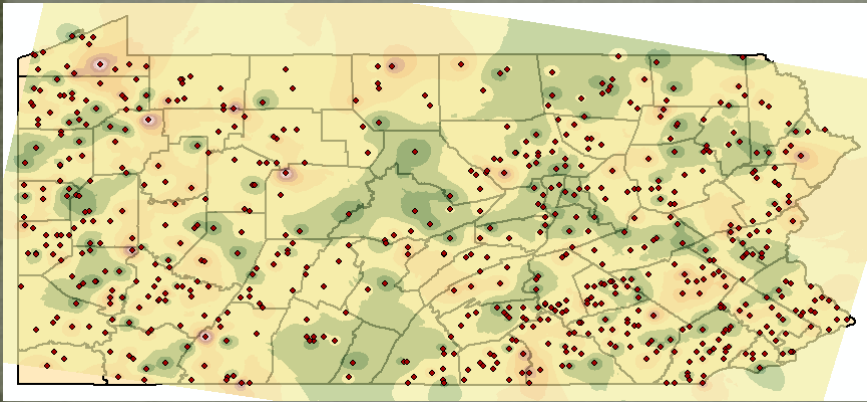
Interpolate - Estimate



Wind > 65 kts - IDW (65-130 ktz color scale)



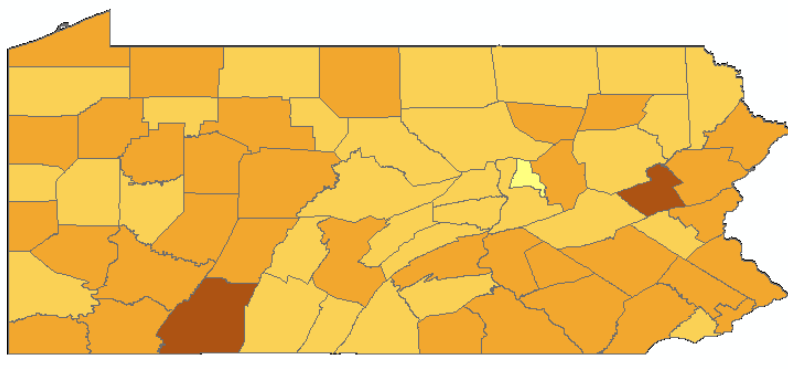
Hail - Kriging (.75 - 1.8 in color scale)



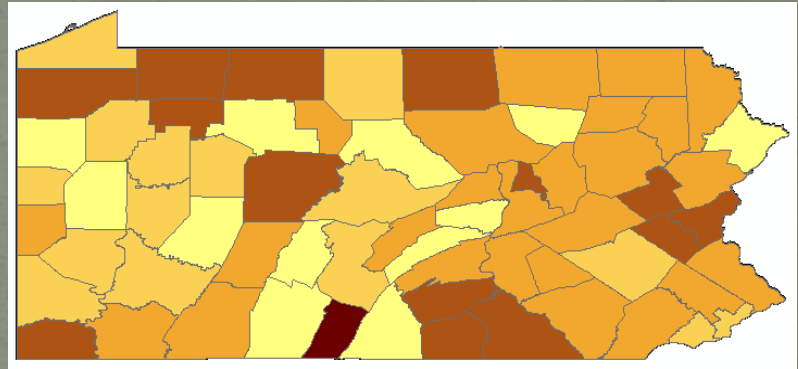
Tornadoes - IDW (F 0-4 color scale)



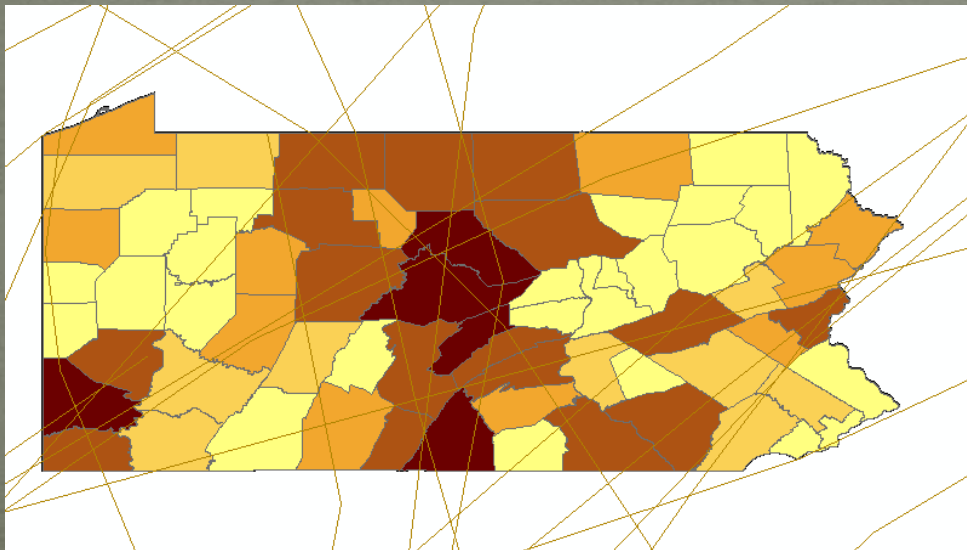
Classify



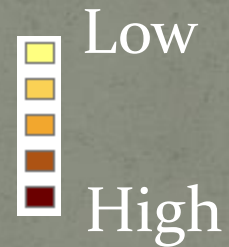
Tornado - Avg (0.33 - 2.0 color scale)



Hail - Avg size (0.8-1.4 color scale)

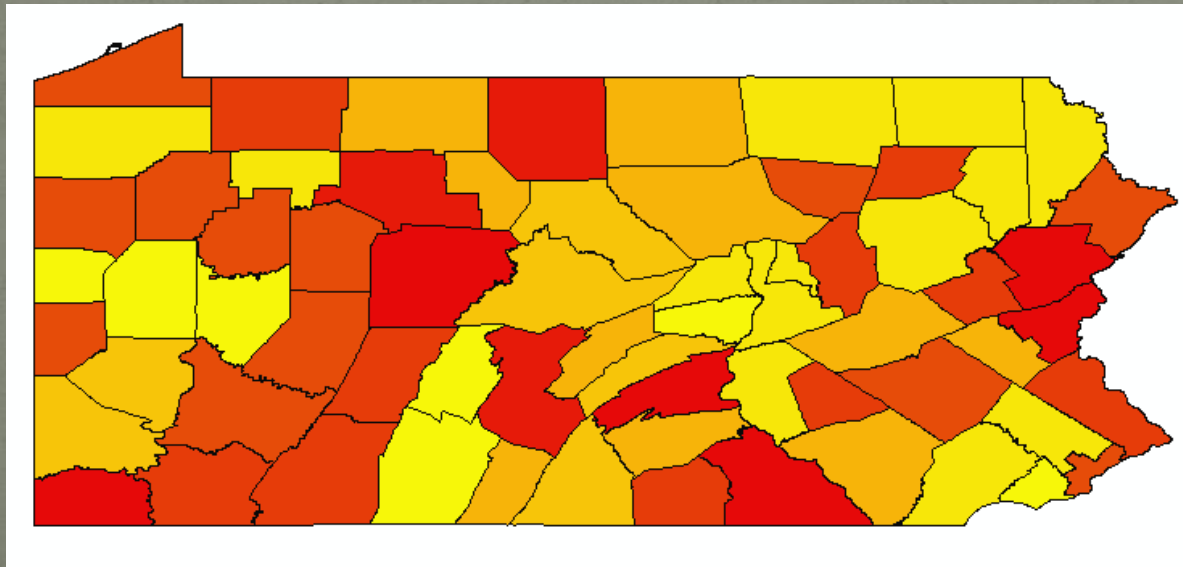


Hurricane- Total Wind (0-360 mph color scale)



Final Steps

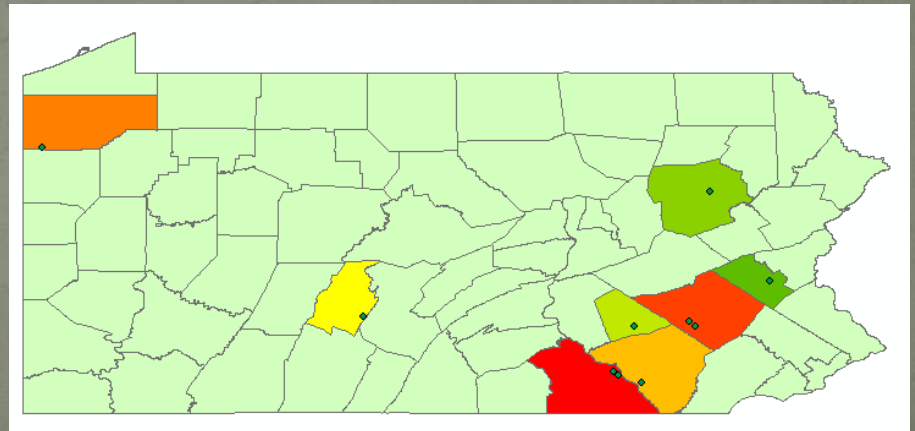
- Combine! Final Map (Report) – Rank counties by risk
- Add data? – Have Crime, Earthquakes, Water Quality, Fires, so on



Current:
Overlay
3 hazards classified
yellow/red color
low/high risk

Further

- Many factors involved, Land use / landscape not considered
- Overall Climate change (involve interva)
- More Variables, data
- Predict Cost of living



Earthquake data, not used (yet?)