Using GIS to serve Environmental Data in Iowa

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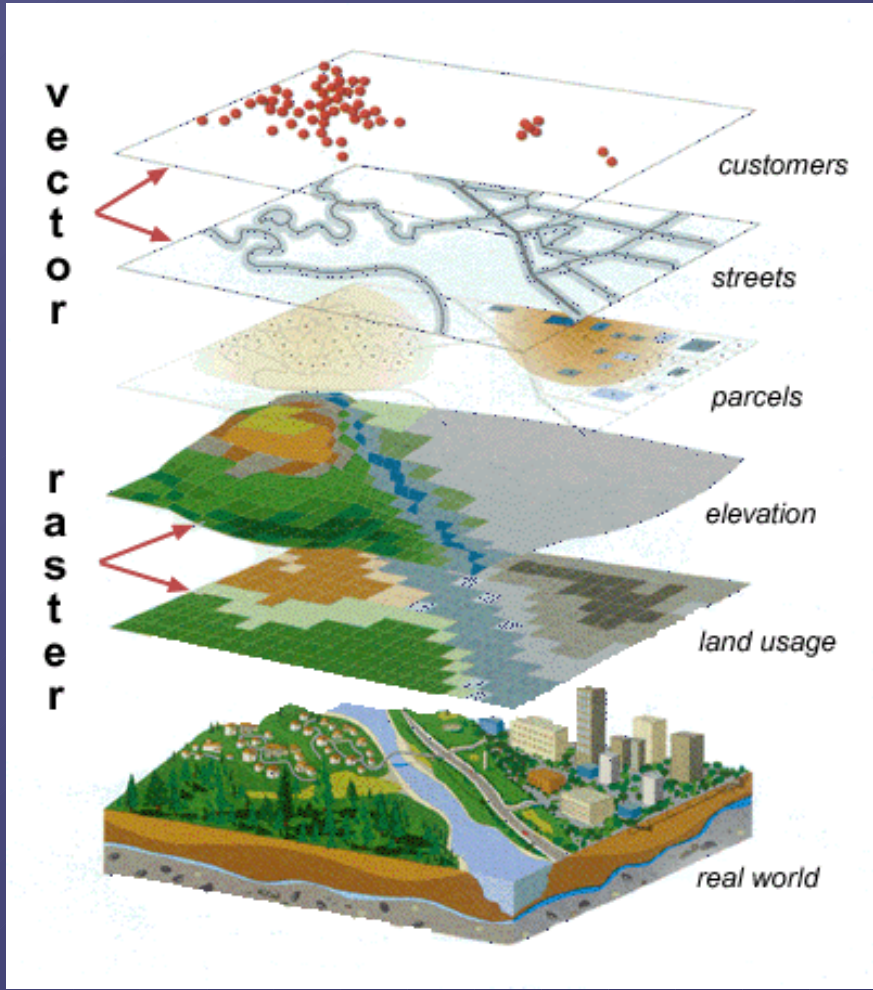
Outline

- What is GIS?
- Why use GIS?
- Who uses GIS?
- How the IEM utilizes GIS?
- Where are we going with GIS?
- When will I stop talking?

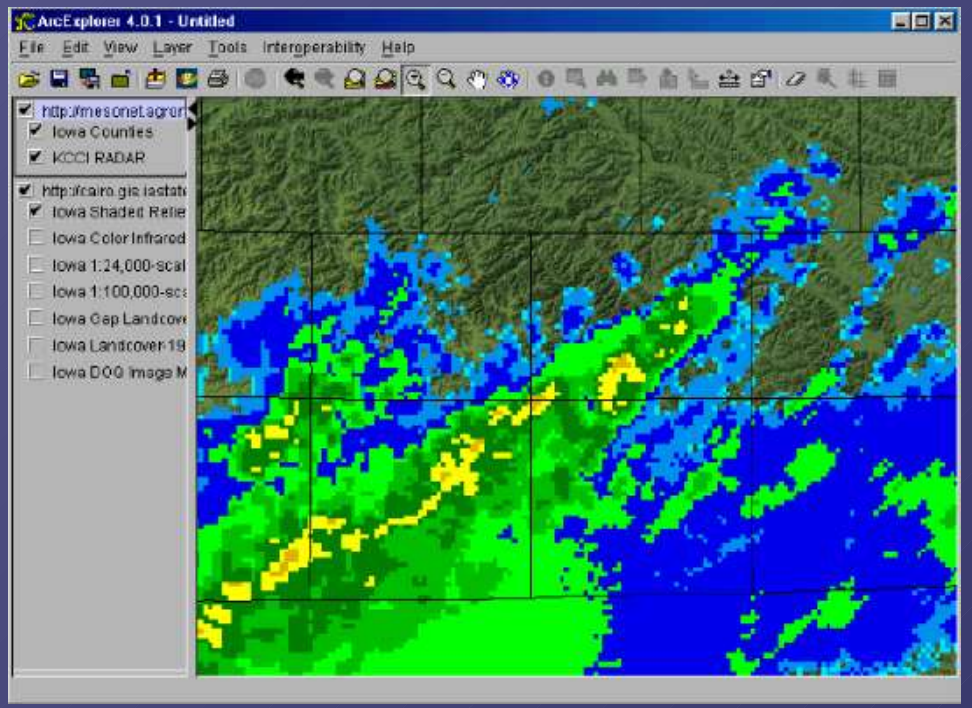
What is GIS?

- **a GIS is a system** of hardware, software and procedures to facilitate the management, manipulation, analysis, modeling, representation and display of georeferenced data to solve complex problems regarding planning and management of resources (NCGIA, 1990)



Why use GIS?

- Interface with many datasets
- Interface with many disciplines
- Tools to do 'portable' research



RADAR layer from the IEM
with topography from ISU GIS Lab

Who uses GIS?

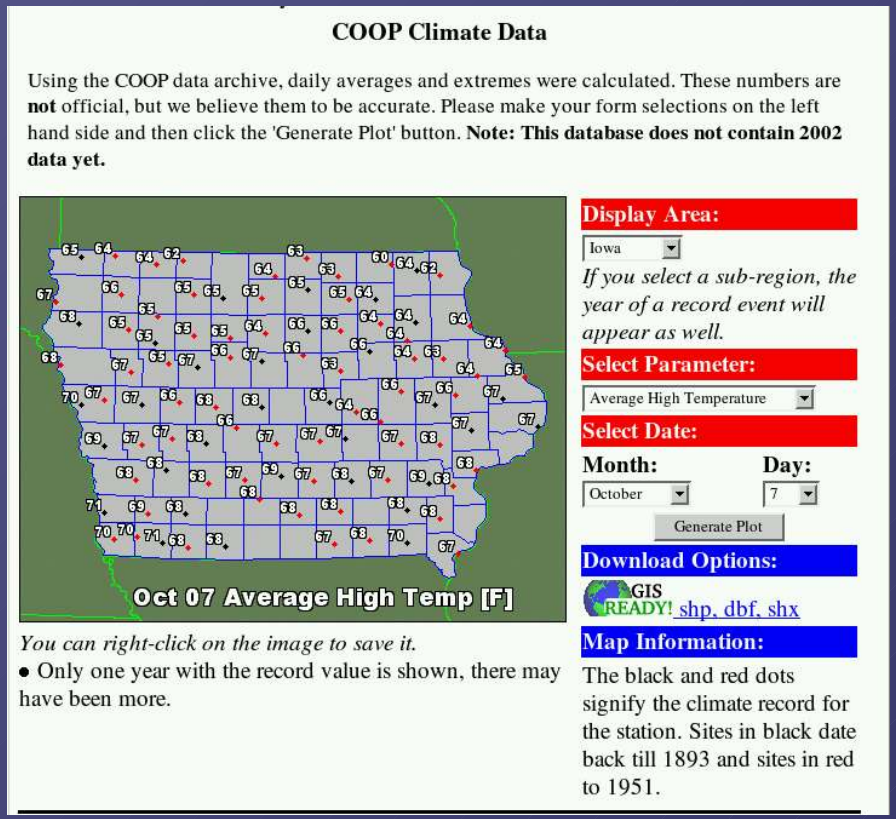
- Most of you probably do
- Just about everyone else does too!
- GIS framework moving into non-spatial areas.

How the IEM uses GIS?

- PostGIS, spatial blade for PostgreSQL
- Mapserver, Internet Mapping Server
- GRASS, desktop GIS

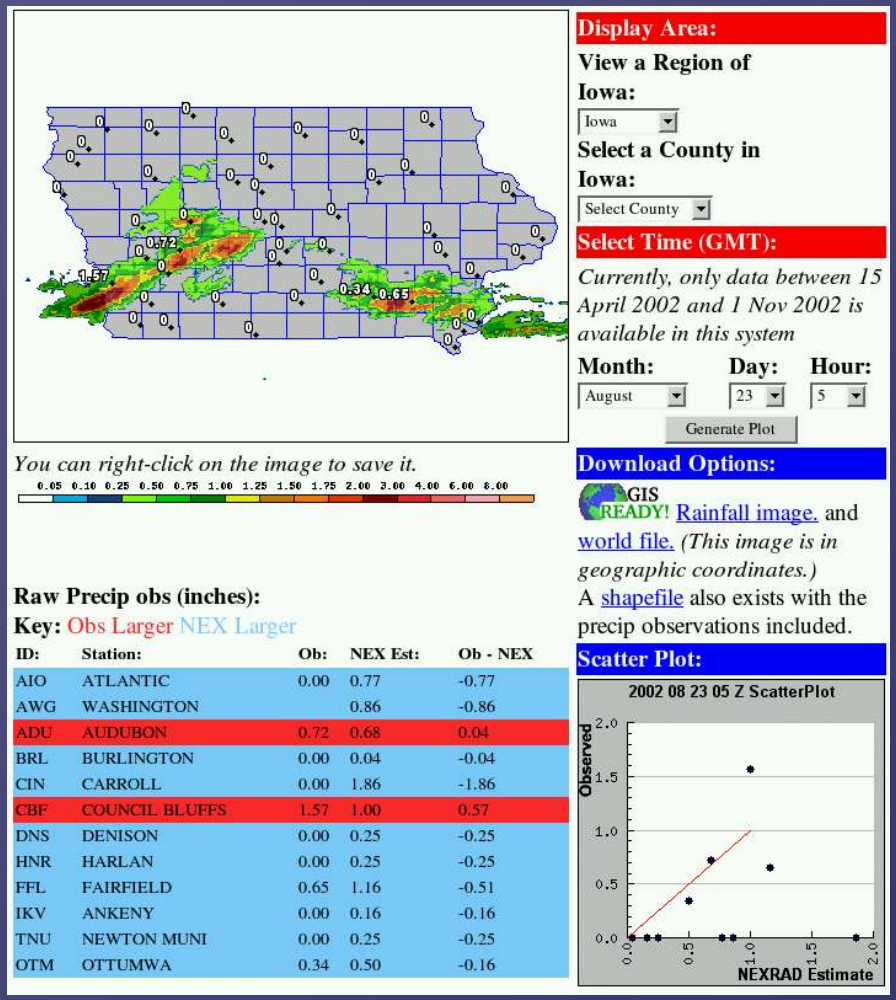
Internet Mapping Example

- Generate dynamic plots of climate data
- The data for the plot is immediately available in GIS format for download.



Analyzing Rainfall

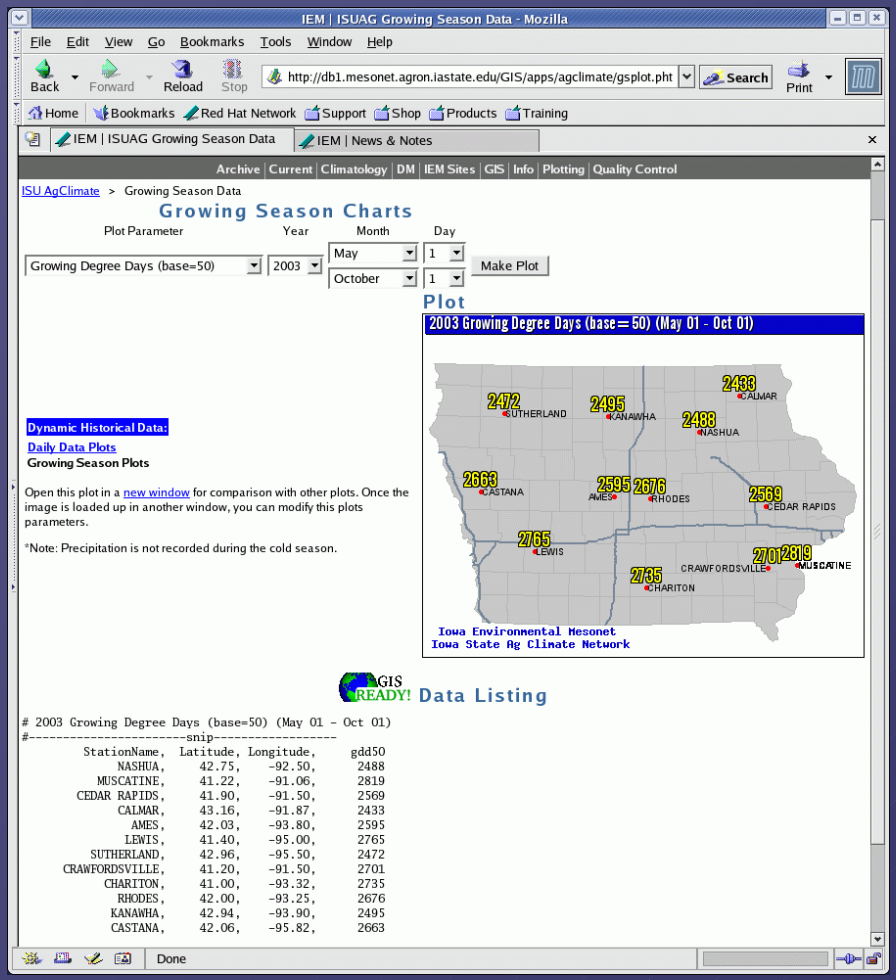
- Combine NEXRAD estimates with automated observations.
- All data shown is immediately available for download.



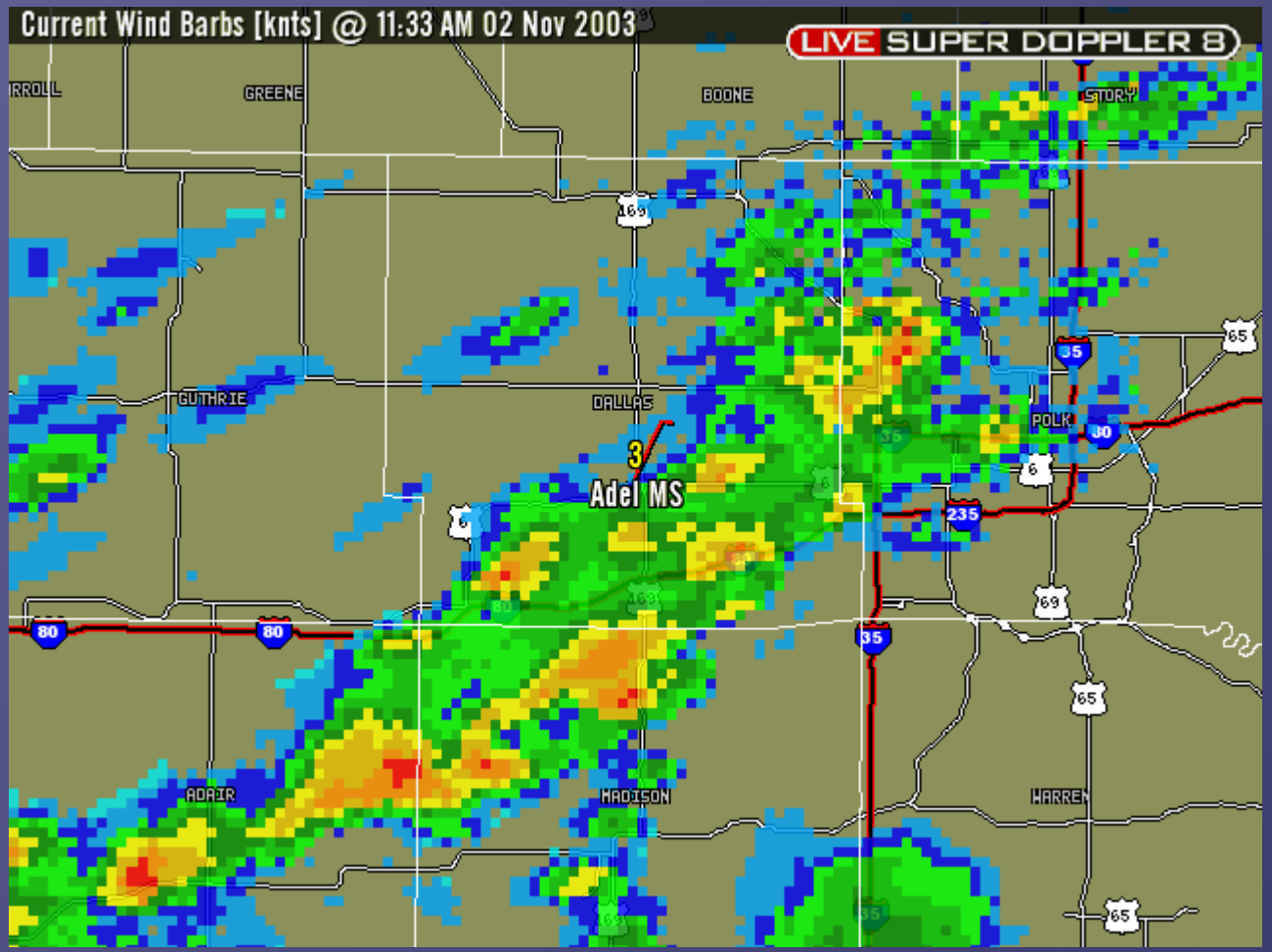
ID:	Station:	Ob:	NEX Est:	Ob - NEX
AIO	ATLANTIC	0.00	0.77	-0.77
AWG	WASHINGTON		0.86	-0.86
ADU	AUDUBON	0.72	0.68	0.04
BRL	BURLINGTON	0.00	0.04	-0.04
CIN	CARROLL	0.00	1.86	-1.86
CBF	COUNCIL BLUFFS	1.57	1.00	0.57
DNS	DENISON	0.00	0.25	-0.25
HNR	HARLAN	0.00	0.25	-0.25
FFL	FAIRFIELD	0.65	1.16	-0.51
IKV	ANKENY	0.00	0.16	-0.16
TNU	NEWTON MUNI	0.00	0.25	-0.25
OTM	OTTUMWA	0.34	0.50	-0.16

Custom Growing Season Data

- Typical growing season data does not fit actual planting dates.
- Users pick timespan and parameter.
- Data immediately available for Excel or GIS in CDF format.

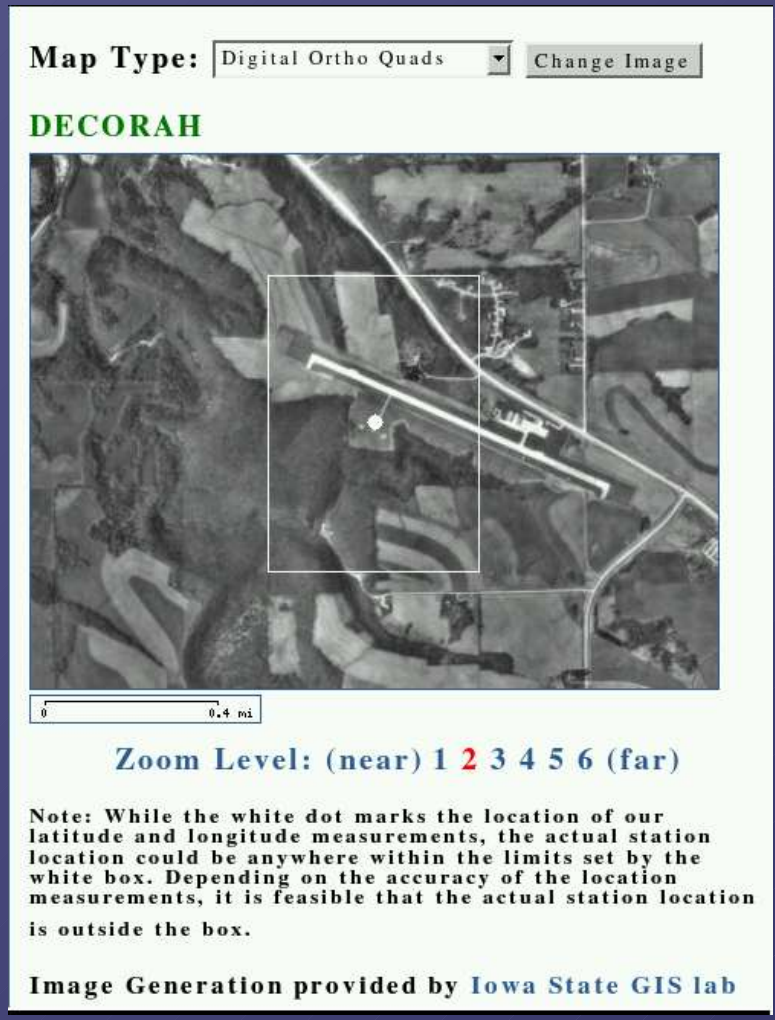


Pulling RADAR into GIS



OGC Web Services

- Open GIS Consortium (OGC) develops standards for GIS systems to inter-operate
  - Web Map Service (WMS)
  - Web Feature Service (WFS)
- Dynamically bring in Ortho Quads from the ISU GIS Lab
- All generated with Open-Source software and Open GIS standards



GIS Data Services Available

- Today's NWS COOP observations
- Climate data
- Station locations
- Current & Historical RADAR composites
- Various WMS services
- High resolution rainfall (coming soon)

Where are we going with GIS?

- Expand our Web Map Service (WMS) and Web Feature Service (WFS).
  - Currently have a RADAR WMS
  - Will have a WFS before next year
- See how we can get weather and climate data to the GIS community in a Free/free and open matter.

When will I stop talking?

NOW!,
but I will start again
after the break!

I'm done, questions?

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