Enabling Geospatial Data Access via Education: A MAGIC Approach

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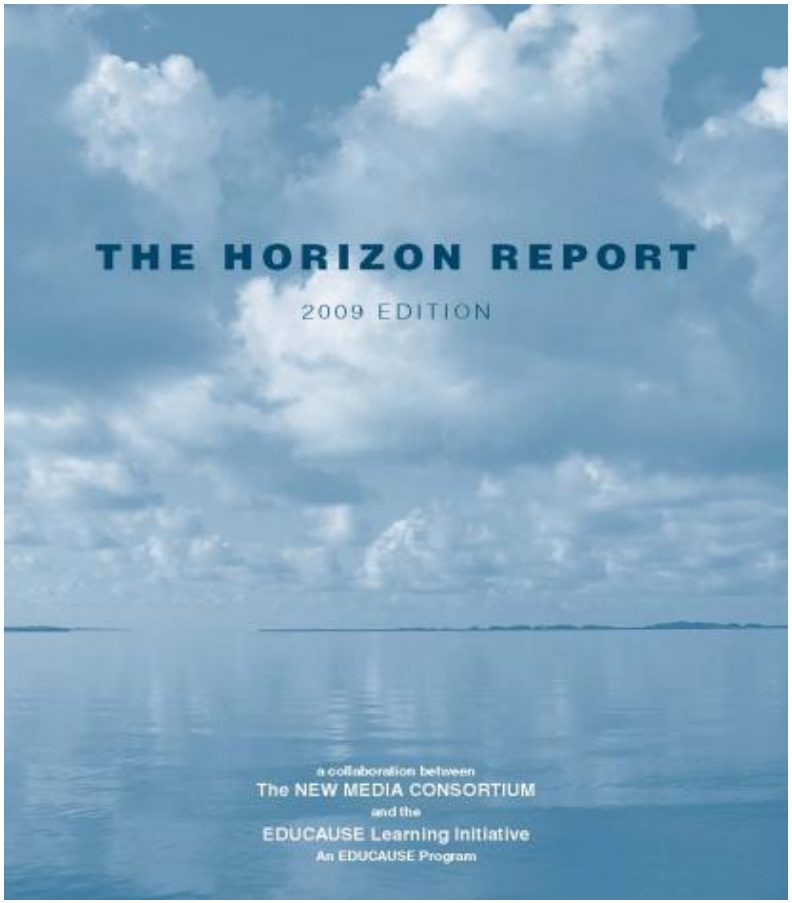
How it all began…

Initial Driving Force

- The University of Connecticut Libraries Map and Geographic Information Center (MAGIC) joined the Undergraduate Education Team within the Libraries during a reorganization in 2008.
- MAGIC needed to transition for expert user focus to meeting the needs of general users and undergraduate students

Reimaging MAGIC

- Reviewed Uconn Academic Plan and Library Strategic Plan
- Looked to peers
- Reviewed Horizon Report from EDUCAUSE to identify trends

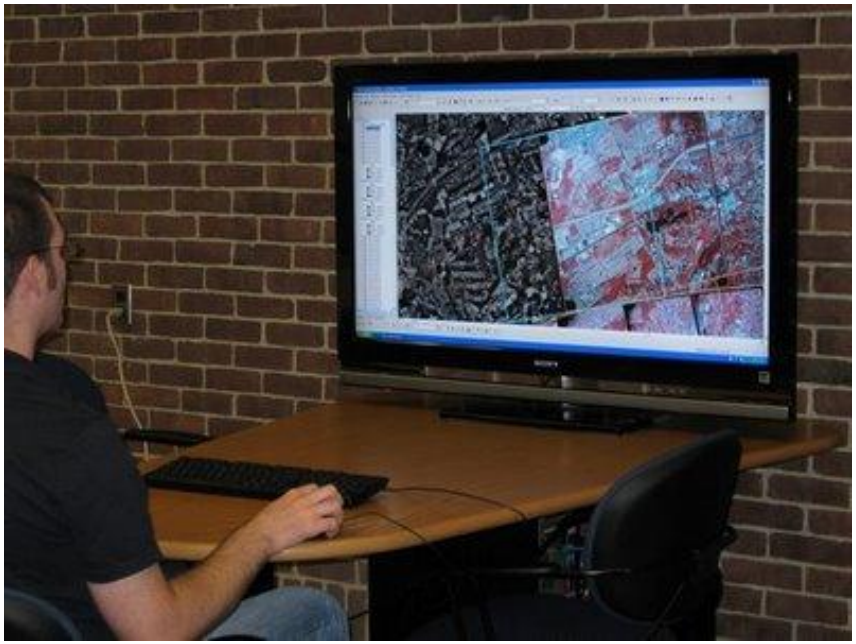


Listening to Students

First Phase

- Empowered student employees at MAGIC to develop project ideas
- Encouraged creativity
- Reviewed keyword search data
- Focuses on problem solving

We want to learn more!



Second Phase

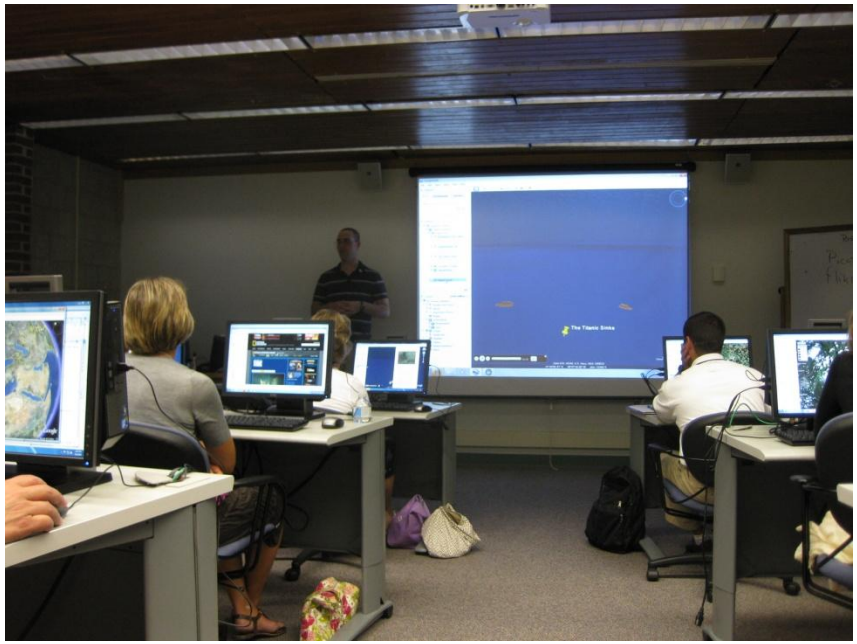
- Students expressed interest in internships at MAGIC
- Collaborated with Department of Geography to develop internship program

Internship Program at MAGIC

- Students receive academic credit for internship (no pay)
- Students work with advisor and MAGIC to identify learning goals
- Project outlined is developed based on learning goals
- Final version of project will be publicly accessible with clear attribution to student

Why Students Wanted an Internship Program at MAGIC?

- Classroom experience is task based with achievable outcomes
- Need to increase problem solving ability with GIS
- Desire to work on “Real” projects
- Interest in learning data creation process



Spring 2010

- 2 undergraduate students were first students to enroll in internship experience at MAGIC
- Both students excelled in the program, and enrolled in graduate programs upon completion of internship experience

Projects – Spring 2010

- Historical Railroad Maps
  - Scanning
  - Georeferencing
  - Making publicly available
- GIS Datasets
  - Revised shapefiles
  - Appended join fields for 2010 Census data
  - Developed and updated metadata

Spring 2011

- Two undergraduate student in geography
- Goal was to increase experience with GIS

Project - Spring 2011

- Developed GIS datasets
  - Processed 2010 Census data as it was released
  - Developed maps on 2010 Census data
- Developed climate and precipitation maps

Fall 2011

- 3 undergraduates in geography
- 1 graduate student in geography
- Each project is treated as an individual learning experience

Projects – Fall 2011

- Website development
- Air Navigation Map Index
- 2010 Census GIS Dataset Development
- GIS map development and GIS dataset development

Spring 2012

- 1 graduate student from geography
- Focus was on developing datasets for future projects

- Projects – Spring 2012
- Historical aerial photography mosaics

Then something surprising happened….

Students wanted additional experience at MAGIC…

Spring 2012 – Independent Study Projects

- 2 Undergraduates and 1 graduate student in geography
- Projects were developed with an independent study focus
- Treated as researchers with full access to everything in collections

Spring 2012 Projects

- Historical Air Navigation Index Interface Development
- ArcGIS Server Installation and Configuration
- Historical Aerial Photography Mosaicing

Internships have helped MAGIC and the Connecticut State Data Center to Provide More Content, More Resources, and Services

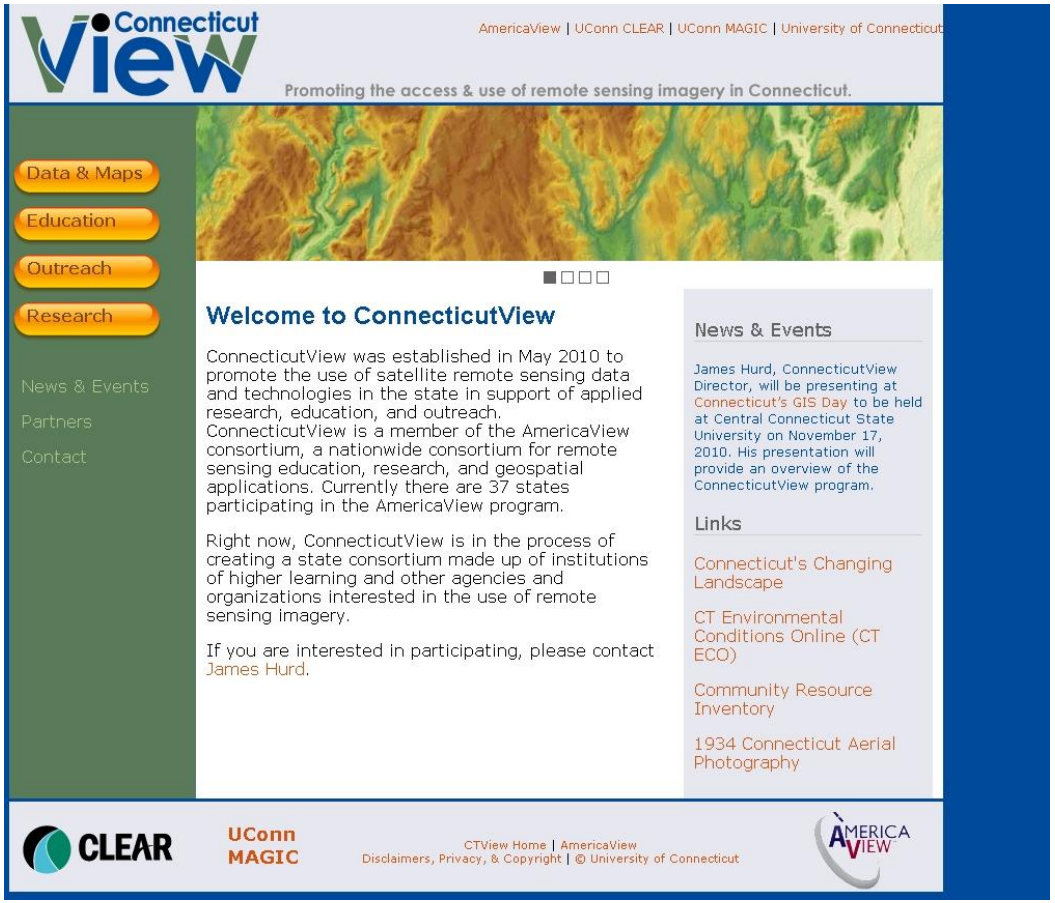
Or to put it another way….

601,220

Total Views of Website content provided by MAGIC and the Connecticut State Data Center between January 1, 2011 to December 31, 2011

Fall 2011

Using WordPress for Website Development

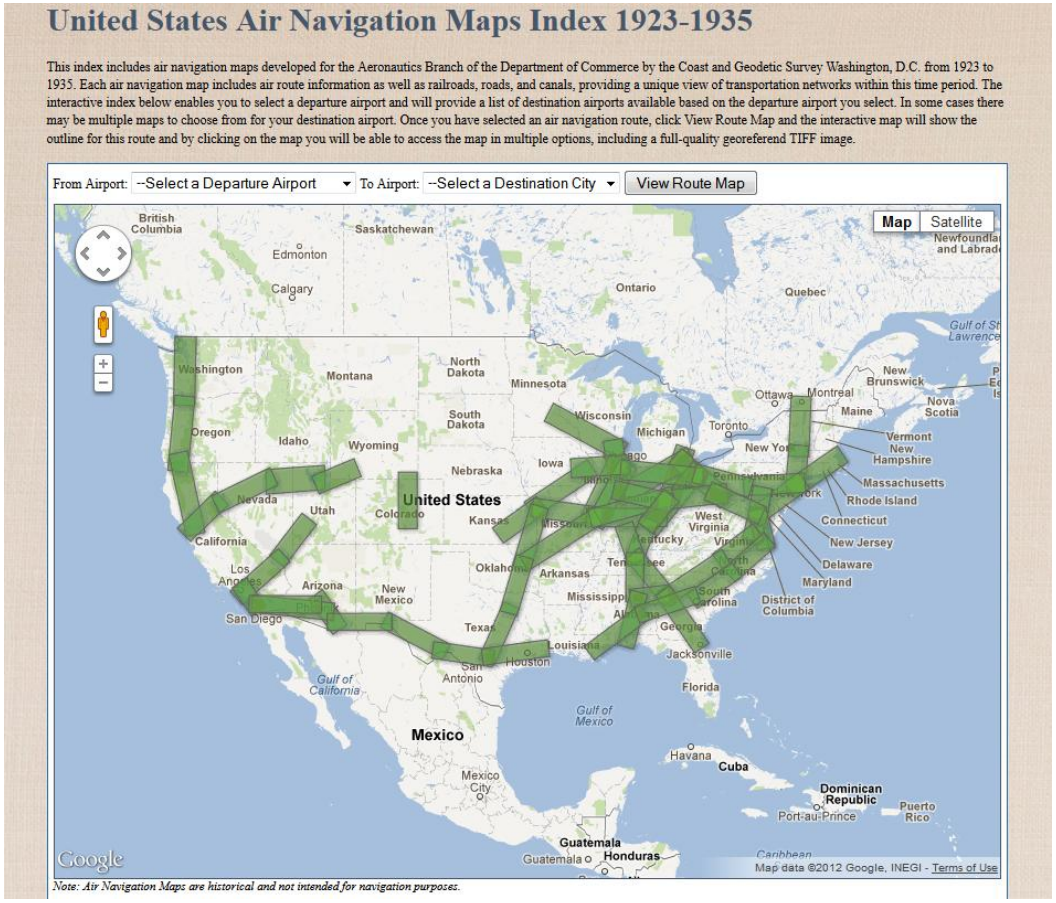


Spring 2012

ArcGIS Server Test Interface

Fall 2011 – Spring 2012

Air Navigation Maps Index 1923-1935



Spring - Fall 2011

2010 Census Data

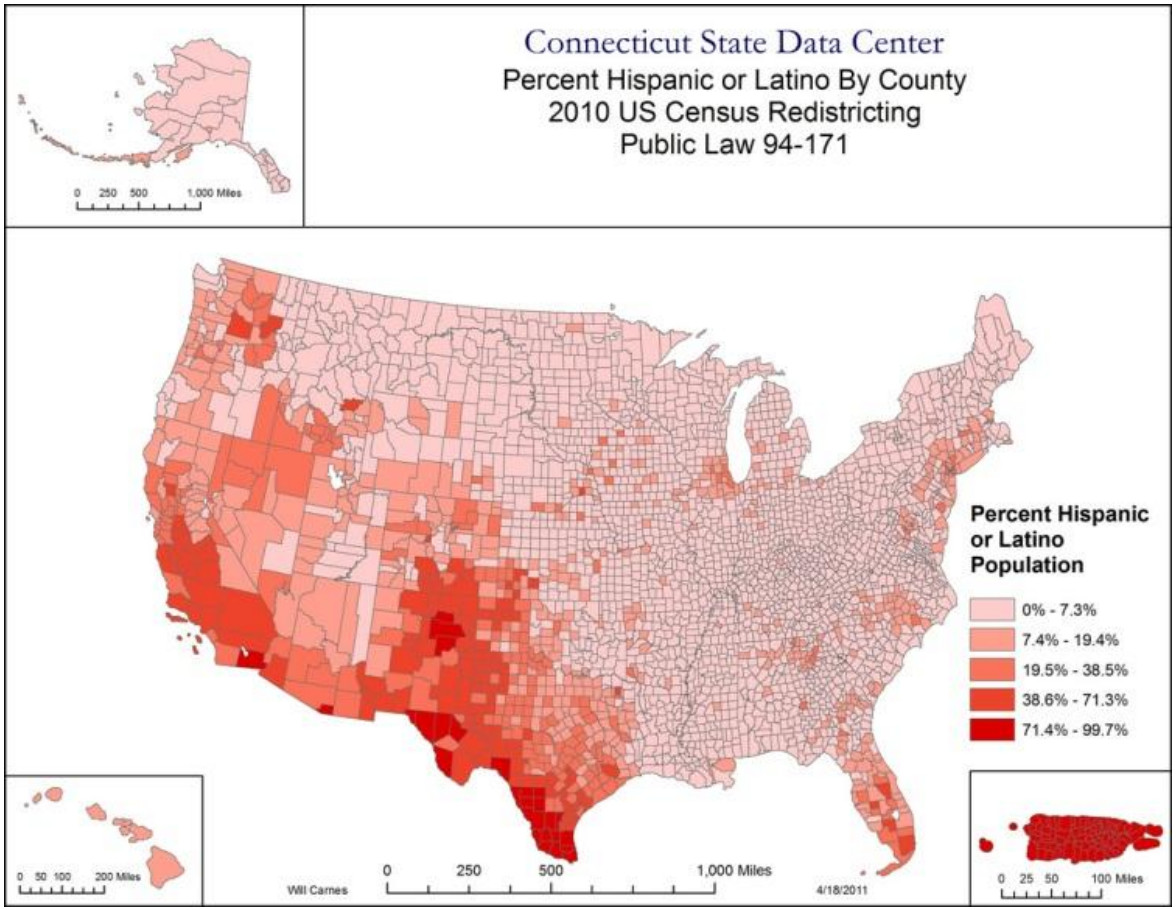
2010 Census Demographic Profile for Connecticut

The latest 2010 Census data can be found using the American FactFinder or for advanced users, you can access this data directly via the US Census FTP server. The 2010 Census Demographic Profile data for Connecticut was released on May 11, 2011 and includes population, age, sex, race, ethnicity, relationship, household, and housing data. From the links below, users can download the data for Connecticut by multiple geographies from the Spreadsheet link in .csv format. Each of these geographies include multiple attributes and a codebook is provided for each dataset to assist users with using this data.

Dataset	Geography	Year	Source	Summary Report	Metadata	Spreadsheet	Shapefile	KML	Preview in Google Maps
Connecticut (Statewide)		2010	US Census Bureau	**Coming Soon**					
Connecticut 111th Congressional Districts	Cong. Districts	2010	US Census Bureau	**Coming Soon**					
Connecticut Counties		2010	US Census Bureau	**Coming Soon**					
Connecticut State House Districts	CT House Districts	2010	US Census Bureau	**Coming Soon**					
Connecticut State Senate Districts	CT Senate Districts	2010	US Census Bureau	**Coming Soon**					
Connecticut Towns (County Subdivisions)		2010	US Census Bureau	**Coming Soon**					

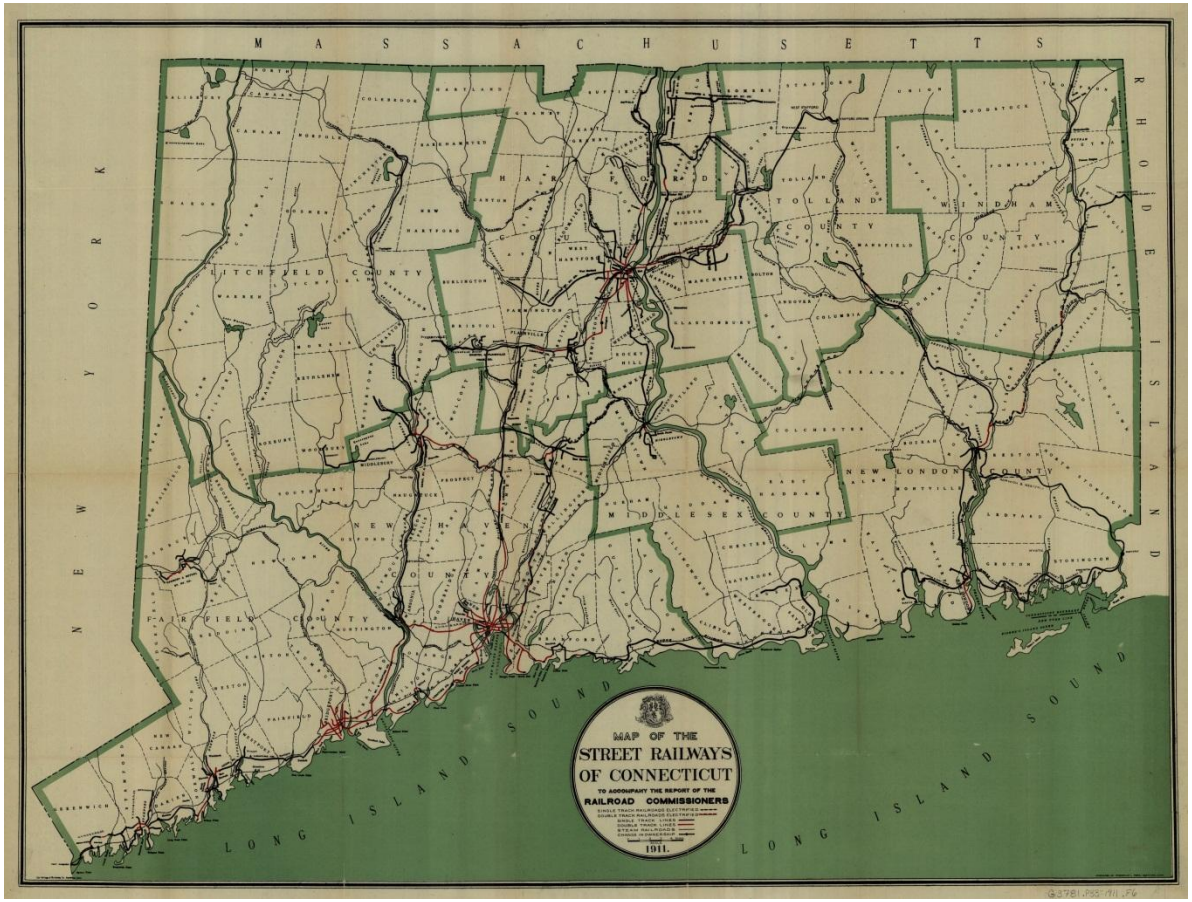
Spring 2011

2010 Census Maps



Spring 2010

Historic Railroad Maps

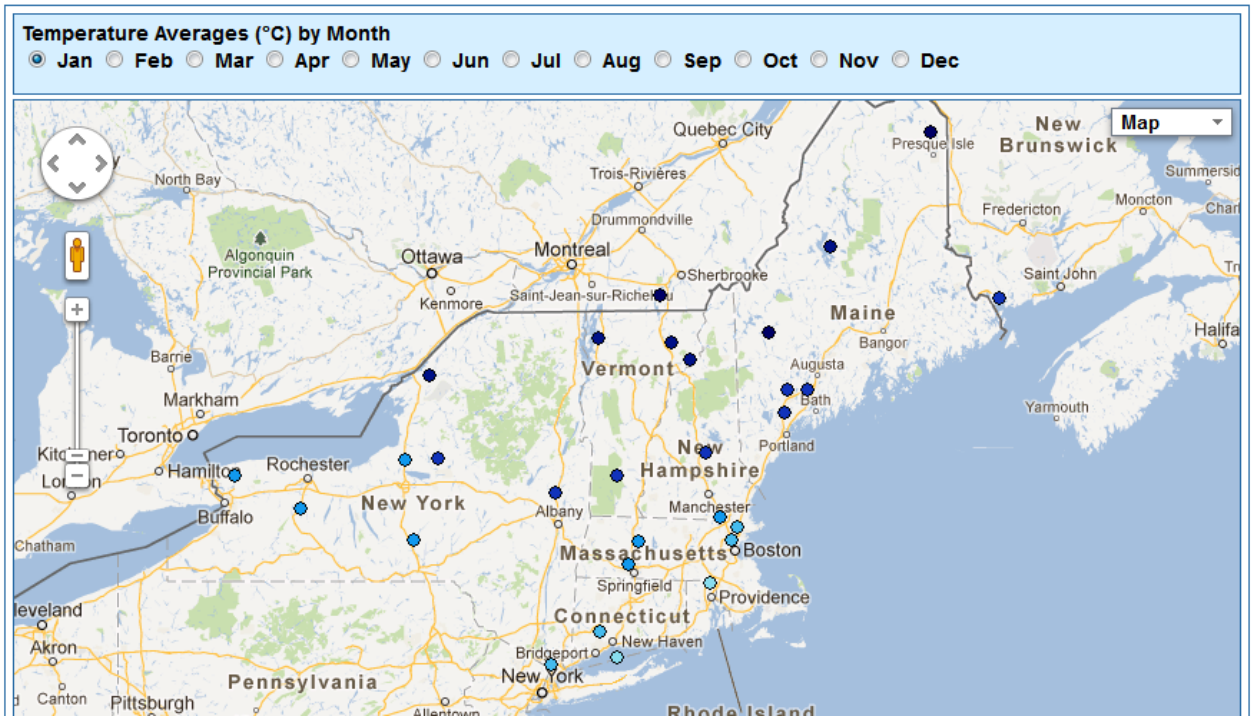


Spring 2010

Climate Maps

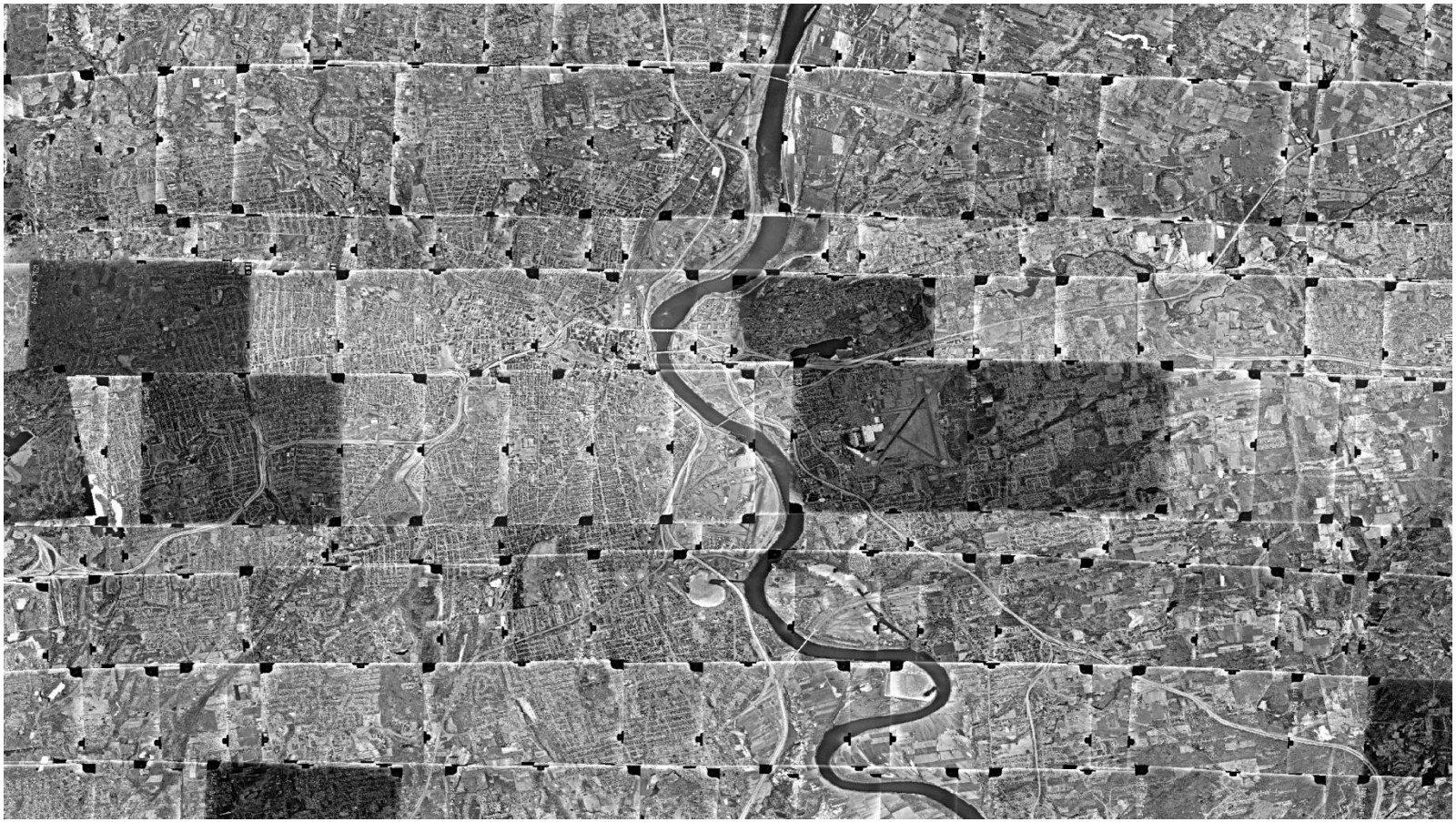
New England Climate Map - 1961-1990

This map includes monthly average temperatures and deviations from the mean temperatures for the 29 northeastern United States weather stations cataloged by the World Meteorological Organization (WMO) for 1961-1990. All values are in degrees Celsius.



Fall 2011 – Spring 2012

Air Photo Mosaics



Next Steps

- Increasing partnerships and collaborative projects
- Expanding internship program to additional departments across campus
- Exploring Independent Study Project Options

A Model For Success

- Strengthening connection to teaching is a win win
- Provides students with experience working with projects and datasets that benefit the public
- Provides a great way to strengthen skills in GIS while working on projects that benefit the public

Questions?

Want to know more about the internship program? Contact us at:

magic@uconn.edu

Special Thanks to all of the faculty and students that have made the internship program a success!