

White Paper Report

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White Paper

Cartography of American Colonization Database (CACD) Project

Digital Humanities Start-Up Grant (Level I)

S. Max Edelson, Department of History, University of Virginia

The Cartography of American Colonization Database (CACD) Project began at the University of Illinois as a collaboration between S. Max Edelson (Department of History, UIUC) and Institute for Computing in the Humanities, Arts, and Social Sciences (I-CHASS) at NSCA. It continued under the direction of Edelson after his move to the University of Virginia (UVa) in Fall 2009 with institutional support from the Scholars' Lab at Alderman Library, Sciences, Humanities and Arts Network of Technological Initiatives (SHANTI), and Institute for Advanced Technology in the Humanities (IATH). It was extended through the Summer 2010.

Our goal was to implement the vision articulated in the NEH application: to bring together records of available high-quality digital images of maps, plans, and charts of the Americas in the age of colonization maintained by libraries and archives around the world. The CACD portal to cartographic web content was to be a clearinghouse of image links, bibliographic information, and other metadata from existing online collections as well as a new way of viewing and interacting with this visual material.

We conducted regular weekly meetings in Fall 2008-Spring 2009 with project team that included I-CHASS faculty Alan Craig (Associate Director for Human-Computer Interactions) and Robert McGrath (NCSA). These meetings explored a series of potential solutions to the problems outlined in the grant, including bibliographic datamining techniques, map visualization, and database construction. We experimented with MS Mapcruncher as a program that could display cartographic images in compelling ways. We also explored partnerships with the Digital Library Foundation's Aquifer project to make use of the America Social History Online web interface. We consulted with developer Klokán Petr Přidal to create new software to adapt his GeoreferenceR and KMLServer programs to display maps in the database on 3D earth

platforms such as Google Earth. Although these potential partnerships did not yield lasting collaborations, they were integral to the ways in which we began defining our research problem.

MS Mapcruncher experiments. Over the course of the 2008-2009 academic year we designed the database's field structure, experimented with Mapcruncher/Virtual Earth visualizations, and defined our temporal and spatial visualizations. With funding provided by the UIUC Research Board, we hired two graduate research assistants, who worked to identify sample groups of manuscript map images related to the Blathwayt Atlas (ca. 1684) and the Assiotti List (c. 1780), two important collections of British imperial maps of America. The RAs used MS Mapcruncher to create an image archive that was georeferenced for display on Visual Earth. They created records for an additional 774 maps in Philip D. Burden's *The Mapping of North America I & II*, the most comprehensive source for printed maps before 1700.

These meetings and preliminary projects led to the following public presentations at which we described emerging techniques and showcased some of the visualizations we created with MS Mapcruncher:

S. Max Edelson "Atlases of Empire: Britain's Geographic Vision for America, 1683-1780," Department of History, University of Virginia, Charlottesville, February 11, 2009

S. Max Edelson, Alan Craig and Robert McGrath, "Rendering Digital Maps: Using and Displaying Images in the Cartography of American Colonization Database," Workshop on "Visualizing the Past: Tools and Techniques for Understanding Historical Processes," University of Richmond, Virginia, February 20-21, 2009

S. Max Edelson and Alan Craig, "Digitizing the Cartobibliography: The Cartography of American Colonization Database," Symposium on "New Directions in Digital Humanities Scholarship, Council on Library and Information Resources, University of Illinois at Urbana-Champaign, February 26-27, 2009

S. Max Edelson, Alan Craig and Robert McGrath, "How to Create a Universal Digital Cartobibliography: Crossing the Boundary From a Sea of Images to a Cartographic Record of American History," HASTAC (Humanities, Arts, Science, and Technology Advanced Collaborative) III, Traversing Digital Boundaries, Institute for Computing in the Humanities, Arts, and Social Science, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign, April 19-21, 2009

The project hired UIUC Librarian Nathan Yarasavage in Fall 2009 to design and build a FileMaker Pro database to store bibliographic data. This created field template that associated CACD fields with MARC record categories.

S. Max Edelson moved from UIUC to the University of Virginia (UVa) in Fall 2009. He received a faculty fellowship at UVa's Sciences, Humanities & Arts Network of Technological Initiatives (SHANTI) to work with the Faculty Visualization Cohort and develop the "New Map of Empire" website. In collaboration with Bill Ferster at SHANTI, Edelson designed a version of the CACD that worked with stored image files. "The New Map of Empire" site features manuscript maps, plans, and charts created by the British imperial state during the period 1760-1783. This website, built on the VisualEyes platform, shows the results of major surveying project in North America and the Caribbean in the second half of the eighteenth century.

VisualEyes is web-based authoring tool developed at the University of Virginia to weave images, maps, charts, video and data into highly interactive and compelling dynamic visualizations. It enables scholars to present selected primary source materials and research findings while encouraging active inquiry and hands-on learning among general and targeted audiences. It communicates through the use of dynamic displays – or "visualizations" – that organize and present meaningful information in both traditional and multimedia formats, such as audio-video, animation, charts, maps, data, and interactive timelines. VisualEyes was started at

the Virginia Center for Digital History and is partially funded by a grant from the National Endowment for the Humanities with continued support from SHANTI.

The New Map of Empire site displays map images using a suite of custom-designed visualizations, including GeoBars (which display the bounds of the maps as frames on a basemap) and georeferenced layers that can be launched in Google Earth. This website is still in development. It will be released as a companion site to Edelson's forthcoming book, *The New Map of Empire: How Britain Imagined America before Independence* (Harvard University Press, 2012). Incoming UVa graduate student Douglas MacGregor worked as a research assistant during Summer 2010 to program and prepare images and data for this project.

The original goals of the CACD were divided into two discrete "tracks" during the grant period. The first (New Map of Empire, see above) builds visualizations for working with a set of cartographic images stored as files. The second (still called CACD) seeks to create a portal that can allow users to search for links to digitized cartographic images. After more than a year and a half spent struggling to create and maintain a database that could house bibliographic data relating to the thousands of digitized maps of the Americas available on the web, we examined ways of accessing OCLC data to accomplish this goal remotely. OCLC is the largest repository of bibliographic data in the world and maintains a common database to which the world's libraries submit bibliographic citations. In collaboration with UIUC metadata specialist Jessica Efron, S. Max Edelson authored a white paper titled "Creating a Portal to Access Digital Maps using the OCLC API." This paper describes the data relating to digital cartographic images available on OCLC and the ways in which it might be organized and searched.

The original plan for the CACD changed during the grant period. Our original idea of the computing challenge identified in the grant application—building a repository and archive of

data and images retrieved from the web—changed as we recognized a series of technical obstacles to becoming a repository for large quantities of image data and metadata. S. Max Edelson left UIUC for UVa, a change of employment that led to difficulties in maintaining institutional relationships as well as new opportunities and collaborations for this research.

We succeeded in part of what we set out to do in the grant application. The New Map of Empire site does indeed offer an innovative series of visualizations that can potentially transform the way scholars can use and study maps online. It will also offer a compelling new way to think about publishing research in cartographic history when it appears alongside a traditional published book as dynamic archive of its primary source materials. In part because of the work undertaken with the grant, S. Max Edelson was named Digital Innovation Fellow for 2010-2011 by the American Council of Learned Societies (ACLS). This fellowship has provided a year's leave and a research budget that continues to support these projects. Our goal is to complete the New Map of Empire and CACD projects by the summer of 2012. Our goal for the ACLS research year is to build and publish a portal that allows users to search for digital maps within the two largest online repositories for such maps, the Library of Congress and the David Rumsey Historical Map Collection.

The primary audiences for these projects are scholars interested in the history of cartography and their students. Because the projects are still being developed, this project's impact has been limited to scholarly audiences who have attended public presentations relating to the CACD. Edelson presented a lecture and workshop to the American History Teachers' Collaborative at the Urbana Public Schools called "Early American Spaces: Using Maps to Illustrate Colonial History" on November 22, 2008. The presentation included an online bibliography of digital maps featured in the presentation.

The original plan for the CACD grant assembled an advisory board to review and provide feedback on a working web version. We maintained contact and communication with this board but did not produce a prototype for evaluation during the grant period. Those who have seen demonstrations of the project have been intrigued by its potential and have offered good advice for improvement. Harvard University Press offered Edelson a book contract in part because it is seeking out publishing projects that have a compelling web component. Edelson's work on this project has generated a set of teaching tools that use georeferenced digital maps to introduce students to early American history. He created a lecture, for example, that features John Smith's 1612 map of Virginia displayed as a layer on Google Earth. This makes possible a three-dimensional tour of the region that follows Smith's voyages.

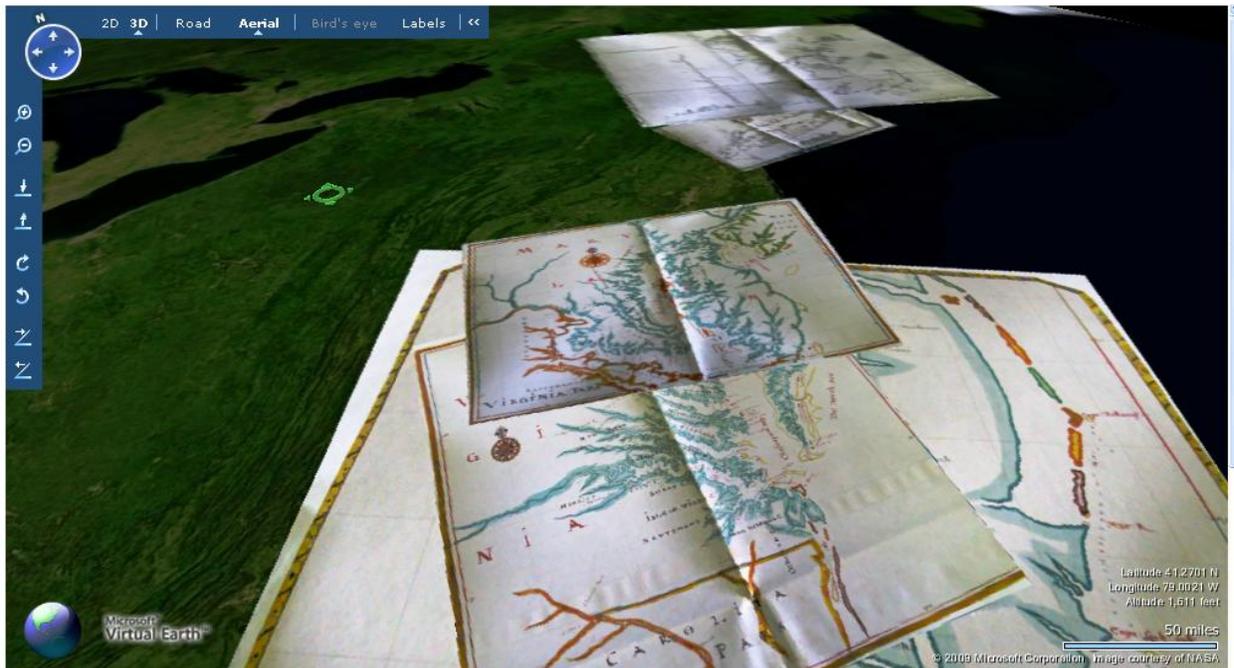
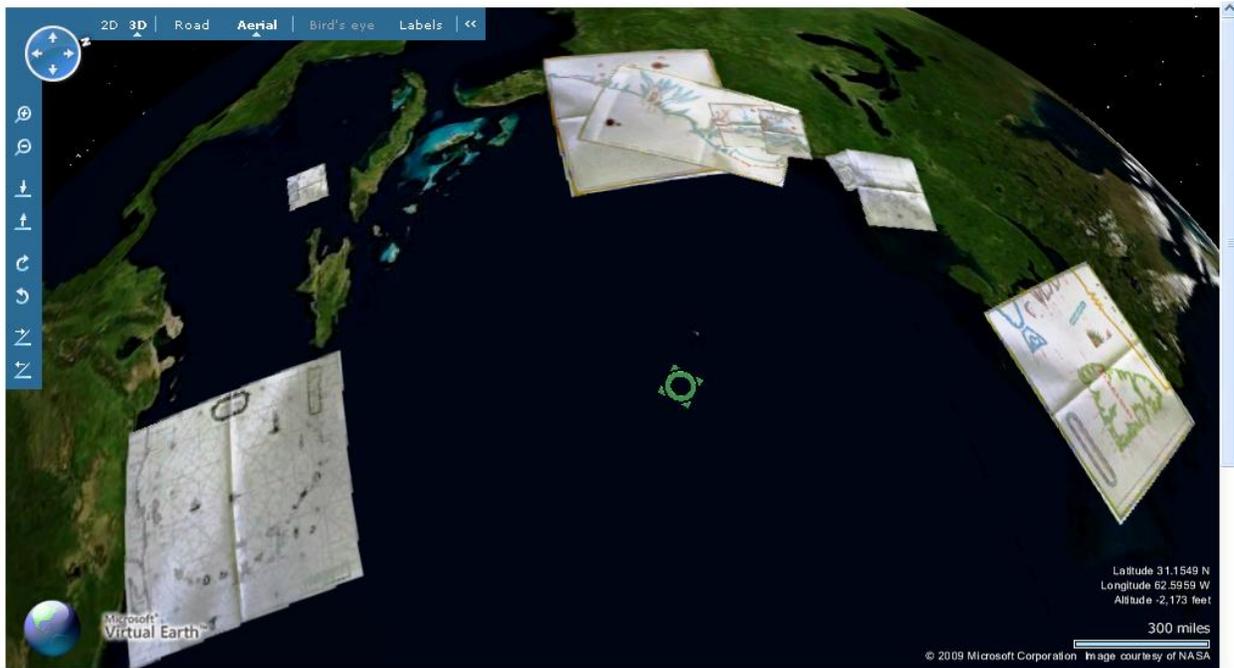
It is challenging for humanities scholars to get up to speed on the technical aspects of these projects and find the right solutions for their visions. At UIUC, I-CHASS helped Edelson find a group of willing collaborators. At UVa, this was true of the Scholars' Lab, SHANTI, and the Institute for Advanced Technology in the Humanities (IATH). These institutional homes for digital humanities projects are essential. In the case of this grant, the most useful and productive collaborations were with SHANTI and the Scholars' Lab. In each case, these organizations had institutional incentives to work closely with faculty to develop the projects. Given the comparatively small size of the financial support available under the Digital Humanities Start-up Grant program it is important that home institutions provide pre-existing incentives for program staff to assist humanities faculty with these projects. Once I had made contact with the right people who could direct this project toward the best possible solutions and were prepared to devote the time and energy to supporting it, we made great progress.

Edelson has funding for 2010-2011 to develop the CACD as an ACLS Digital Innovation Fellow. This support will allow him to develop the New Map of Empire website as well as a prototype portal for the CACD project. After Edelson left UIUC, that institution did not pursue further collaborations with this project. At UVa, Edelson has collaborated with the Library's Scholars' Lab, SHANTI, and IATH to develop digital mapping sites.

The project did not result in lasting inter-institutional collaborations. The ongoing CACD project, funded by ACLS, may seek out institutional partnerships with OCLC Research in order to create the best possible interface with digital map data housed by OCLC. After integrating collections from the Library of Congress and the David Rumsey Historical Map Collection—two online repositories that offer comparatively rich metadata—we may develop a set of metadata standards for other institutions that will allow them to open their digital map collections for searching through the CACD portal.

The vision and accomplishments of the CACD project led to a successful grant application to ACLS. Edelson has made the use of digital maps a key aspect of his university teaching. The New Map of Empire project is currently in development.

MS Mapcruncher images, S. Max Edelson, Alan Craig and Robert McGrath, "How to Create a Universal Digital Cartobibliography: Crossing the Boundary From a Sea of Images to a Cartographic Record of American History," HASTAC (Humanities, Arts, Science, and Technology Advanced Collaborative) III, Traversing Digital Boundaries, Institute for Computing in the Humanities, Arts, and Social Science, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign, April 19-21, 2009





“New Map of Empire” website screenshots

VisualEyes - Windows Internet Explorer

http://www.viseyes.org/show?id=58231

VisualEyes

Southeast

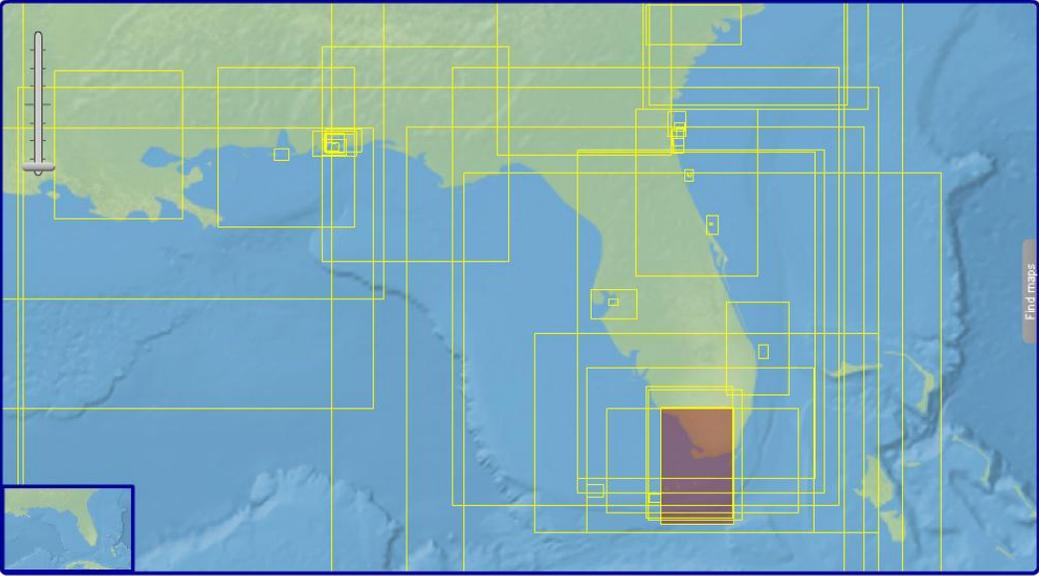
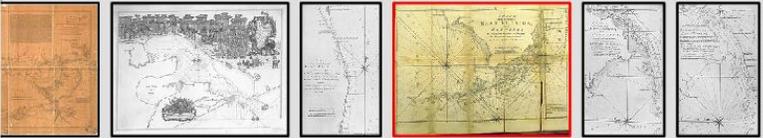


Chart of the South End of East Florida and Martiers

John Gerar William De Brahm
1772

[View in Google Earth](#)



7/9/10

VisualEyes - Windows Internet Explorer
http://www.viseyes.org/show?id=58231

Southeast

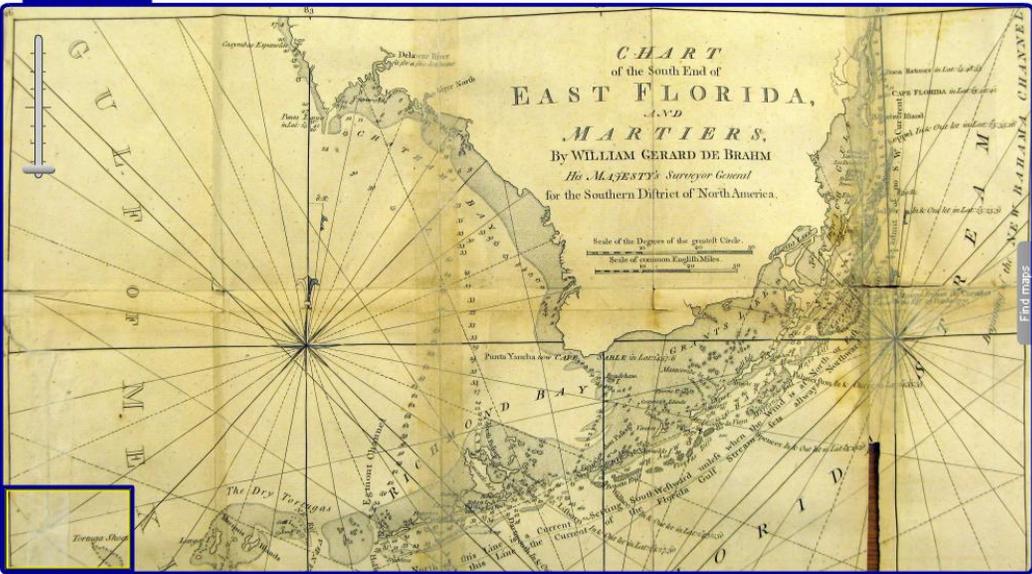
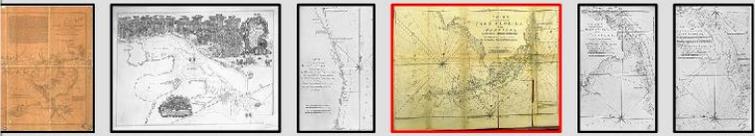


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7/9/10

Use the control and plus or minus keys to resize the screen

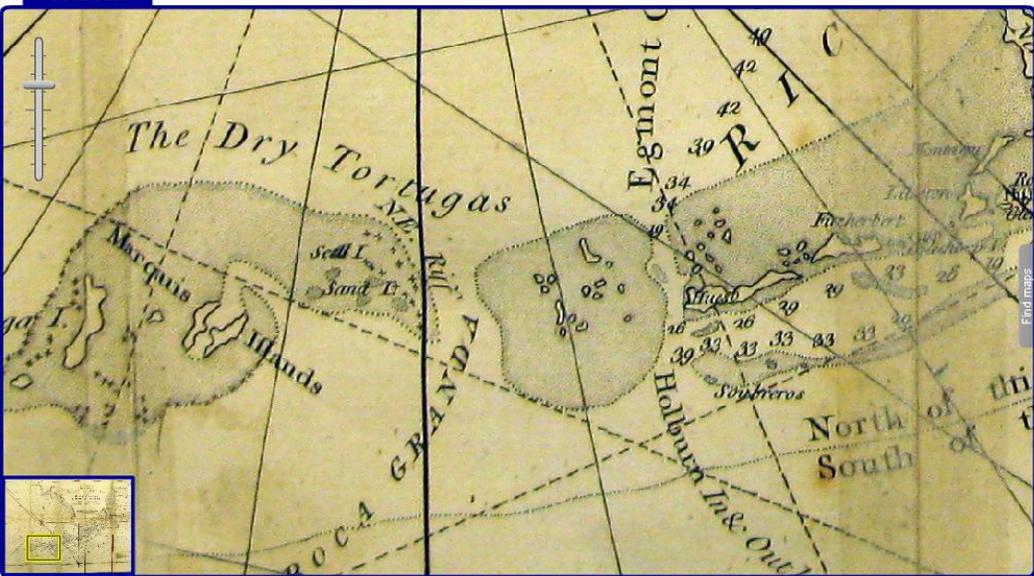
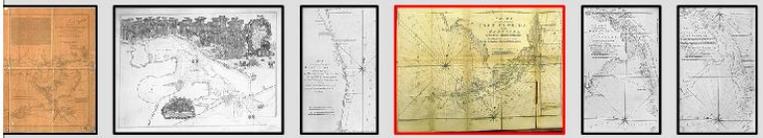


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Use the control and plus or minus keys to resize the screen

VisualEyes - Windows Internet Explorer

http://www.viseyes.org/show?id=58231

Go back

Tampa Florida Sanibel Island Miami Virginia Key Plantation Key Upper Matecumbe Key Lower Matecumbe Key Vaca Key Bahia Honda Key Cudjoe Key Big Pine Key Sugarloaf Key Dredgers Key Key West Dry Tortugas North Bimini South Bimini Freeport Elbow Cay

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Back to start point Layer opacity - ★★★★★

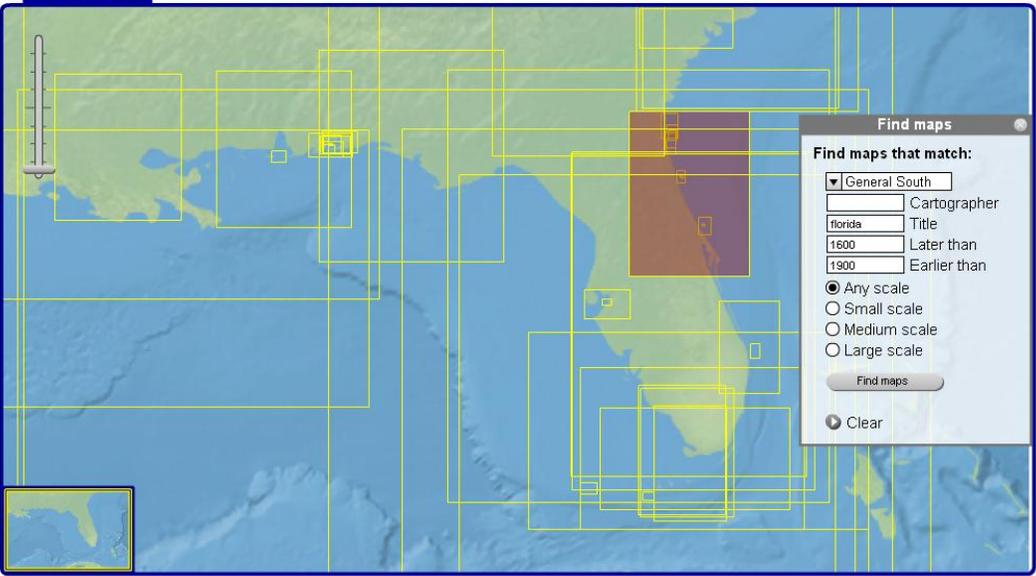
Use the control and plus or minus keys to resize the screen

VisualEyes - Windows Internet Explorer

http://www.viseyes.org/show/?id=58231

VisualEyes

Southeast



Find maps

Find maps that match:

General South

Cartographer

florida Title

1600 Later than

1900 Earlier than

Any scale

Small scale

Medium scale

Large scale

Find maps

Clear

Map of the General Surveys of East Florida

John Gerar William De Brahm
1770

[View in Google Earth](#)



7/9/10

Use the control and plus or minus keys to resize the screen

VisualEyes - Windows Internet Explorer
http://www.viseyes.org/show/?id=58231

Southeast



Find maps

Find maps that match:

Any Survey
Cartographer
pensacola Title
1600 Later than
1900 Earlier than

Any scale
 Small scale
 Medium scale
 Large scale

Find maps

Clear

A Plan of the Harbour of Pensacola in West-Florida
George Gauld
1764
[View in Google Earth](#)



7/8/10

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VisualEyes - Windows Internet Explorer
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Southeast



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