Red River, Black River, the Susquehanna River, too: Student-Faculty Collaborations in the Spatial Humanities at Bucknell

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Problems with Historical GIS

• To capture the historical past and create a truthful representation of history in a GIS can require enormous investments of time and resources!
  – Most GIS data is based on contemporary boundaries and features (look at how the Chesapeake Bay has changed)
    • Making changes to existing data or creating new outlines still takes much time
    • One must also access this data and have the right to use it
    • One must trust the statistics one is using
• Fear of the dominance of ‘ground truth’ and return to a quantitative history
• Steps for my own work beyond the idea:
  – finding data
  – getting permission to use maps
  – having them digitized ($)
  – having them matched to current GIS data ($)
  – learning the ArcGIS software
  – having appropriate equipment
  – finding the time to implement, etc.
• But the rewards are rich and it has become much easier than in the past!
Teaching new courses: learning new skills

- Importance of a LONG TERM mentor/mentee relationship—e.g. Presidential Fellow, Steffany Meredyk
- Allows for collaborative learning of new skills
- Allows for complementary learning and application of skills
- Student skills transferable between GIS, History, Humanities, English, Environmental Studies courses
- New Introductory H-GIS course may help and will complement existing GIS courses
• Multiyear, multi-institutional collaborative student/faculty project

• Goals:
  – produce traditional print medium book series that highlights the narratives of place in the Susquehanna
  – Produce multimedia, interactive sites that complement the print series and also act as stand-alone resources for K-12 and college curricula

Stories of the Susquehanna
Katherine Faull and Alf Siewers
Financial support for summer internships

Learning to integrate GIS into historical interpretive projects takes time

Summers have proven to be optimal for training, research, and implementation of GIS into different projects

• Jon Ben Snow Trust
  – Summer Writers Institute (2009, 2013)
• Chesapeake Conservancy
  – John Smith Trail Connector Trail (2009-12)
• Digital storytelling
  – Stories from Marcellus Shale (2010)
• Mellon foundation grant (2012)
  – GIS mapping of Susquehanna River main stem
• Interdisciplinary course (IP) 2011, 2012
  – Creation of a pool of interested and qualified students to continue the work on the SoS project
• Conservation Fund/Chesapeake Conservancy (2012-14)
  – Undergraduate summer interns creating a cultural and historical inventory to map the whole length of the Susquehanna
Examples of interpretive mapping I
View #1 of John Smith’s 1612 map

Students georectified John Smith’s 1612 map of the Susquehanna Valley according to different scholarly interpretations and reached two very different conclusions, with important contemporary consequences

Emily Bitely, ’11
Examples of interpretive mapping I
View #2 of John Smith’s 1612 Map

Taking the “Northern view” of Smith’s map produces a geographical error of up to 30 miles.
Examples of interpretive mapping II:
Locating Sites of Settlement on the Susquehanna

Lower Susquehanna River
(Havre de Grace – Harrisburg)

Main Branch (Harrisburg-Sunbury)

West Branch (Sunbury-Lock Haven)

North Branch (Sunbury-Cooperstown)
Examples of interpretive mapping II: Locating Sites of Settlement on the Susquehanna, Washington Borough Sites

Emily Bitely ’11 ArcMap and GIS
Examples of interpretive mapping III
Incorporating Modern GIS Data

Layers:

- American Indian sites, Wallace’s Indian Paths, and streams
- Georeferenced German North Branch map
- Oil and Gas Wells (DEP GIS dataset, 2006) categorized by site status—Active, Inactive, Abandoned, Proposed but Never Materialized

Emily Bitely, ’11
Examples of interpretive mapping III: Map of Susan Fenimore Cooper’s world

Sam Lauer, ‘13. ArcGIS research work with Prof. Alf Siewers, summer 2012
Examples of Student Mapping Projects:
Steffany Meredyk ’13. Arc GIS project for Prof. Duane Griffin, spring 2012.
Examples of Student Mapping Projects:
Bethany Dunn ‘14, Google Earth mapping of Colonel Clapham’s march up the Susquehanna River, 1756
The Nghe-Tinh Soviets (1930-1931)
Historical GIS

David Del Testa, Ph.D.
Associate Professor of History
Bucknell University
Nghe-Tinh
Soviets History
Data and Layer Sources

• Layers include:
  – Rice harvests for Nghe An and Ha Tinh
  – Non-rice cultivars for Nghe An and Ha Tinh
  – Handicraft and industry for Nghe An and Ha Tinh
  – Religiosity for Nghe An and Ha Tinh
  – Location of important protests and the sites of Soviets
  – Households susceptible to taxation for 1924, 1930, 1931, and 1932

• Data for layers of points and polygons:
  – For contemporary administrative district boundaries from National Geospatial Intelligence Agency for province, district, and commune
  – For economic and land use data, Cartes économique de l’Annam (in 1926) from LOC (only other copy at BN) of Ha Tinh, Nghe An, and Quang Ngai and the Bulletin économique de l’Indochine, Annuaire économique de l’Indochine (especially a 1930 special issue on Nghe An agriculture), etc.
  – Bucknell University Information Services provided support for student Max Stiss and others to ‘rubbersheet’ these maps to contemporary data
  – For religiosity, “Carte du vicarat apostolique du Vinh” (1880) and reports of the MEP (1920s)
  – For politics, Tran Huy Lieu’s The Soviets du Nghe-Tinh (1961), Rapport mensuel de l’Ensemble de l’Annam, and other French and Vietnamese sources

• Data/Layer problems:
  – Real need to get down to village level
  – Lack of unicode entries to display diacritics
  – As Gilles De Gantès and Magali Barbieri have described, French-origin data sometimes suspect
Nghe-Tinh Showing Georectified Colonial-era Maps
Observations from Nghe-Tinh Soviets
H-GIS

Ngohen is exception for a multicropped rice area falling into protest

Ngohen is exception for a handicrafts-producing area falling into protest
Conclusions

• What are we learning/teaching?
  – New ways of thinking about representation
  – New ways of studying and experiencing landscape as symbolic narrative
  – New ways of thinking about cause/effect relationships
  – A spatial analysis to challenge traditional interpretations
  – New ways of thinking about dominant/subaltern power relationships and their representations
  – Valuable transferable skills
THANK YOU!