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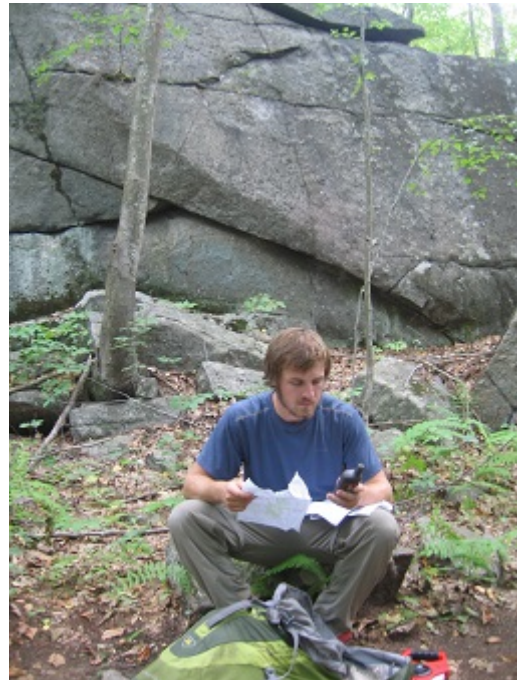
Research Article

Using Geographic Information Science to Map the Flight of the Regicides in Seventeenth-century New England

—[Steven Cowley](#) (Editor: [Jennifer Lee](#))

In May of 1660, the fledgling New England colonies welcomed two powerful and unexpected figures, Major Generals Edward Whalley and William Goffe. However, the presence of these heroes of the Puritan cause was tainted with the blood of the beheaded King Charles I. Whalley and Goffe were two of the judges who had found Charles I guilty of treason and ordered his execution in 1649, after his defeat in the English Civil Wars. Following the collapse of the Cromwellian Protectorate in 1660, the beheaded King's son had returned to power as Charles II, and sought revenge. As two of the most prominent judges, now regicides (Latin for "king killer"), Whalley and Goffe were wanted men despite their popularity among Puritans. As several other regicides were being tried and executed, Whalley and Goffe crossed the ocean and melted into the New England landscape. For two decades, the agents of King Charles II searched unsuccessfully throughout Massachusetts and Connecticut for the fugitives.

I first encountered these events in talking with Associate Professor Cynthia Van Zandt of the University of New Hampshire's (UNH) Department of History. Dr. Van Zandt has been studying the regicides in New England and the Puritan underground which helped them. We discussed the difficulties of researching the two men's travels, hideouts, and supporters. As Dr. Van Zandt's research assistant, I was determined to create a map which would include all this information. The two men did their best not to leave evidence of their presence, and what evidence exists is sporadic and often second hand. I soon discovered Geographic Information Science (GIS) and saw its potential. Funded by a Summer Undergraduate Research Fellowship (SURF), I spent ten weeks in the summer of 2014 in a GIS crash course while touring the woods of New England with GPS in hand, and scouring four centuries of maps and texts. For the following two and a half years, I have continued using GIS to map the regicides as they eluded their pursuers for twenty years.



The author at Hatchet Harbor orienting maps to GPS data.

Computer Mapping

GIS, a form of digital mapping technology, organizes information in a geographical format by adding spatial coordinates to existing data, in this case

historical information from both primary and secondary sources. Historians already use the capacity of GIS computer software to create, organize, and analyze often massive amounts of scattered information. History happens in places, and I realized that in addition to analyzing old maps, I could make a geodatabase by adding spatial coordinates to location spreadsheets (called “attribute tables” in GIS) that describe historical locations, persons, and events. I gave the people involved in these events attributes such as political affiliation, when and where they lived, and their occupation. I then built databases by making relationships among the spreadsheets so that the software could understand that people have these various attributes. The software recognizes these places and links them to a location on the face of the earth, creating a geodatabase, a single giant framework which includes all relevant information about people and places involved. The same software can then create a three dimensional model of the landscape using elevation data. This geographical representation of the spreadsheets is visible in GIS as a network of clickable dates and locations over the landscape, which can be navigated much as one navigates through files nested in folders on a computer. A recent addition to GIS is the ability to scroll through a fourth time dimension, now that the maps can read date entries in the geodatabase. This means that the maps can systematically represent changes of geography and the locations of individuals over time.

Early American Historians and the Regicides

My research to create the information databases included reading official documents of the Royalist pursuers, coded letters from the regicides to their families, letters and reports among New Englanders who came into contact with them, fragments of Goffe’s diary, and oral accounts collected by later historians. These primary sources gave a fragmented view of how the two men eluded capture.

In 1661 they made their way from Boston to the more secluded New Haven colony in Connecticut. Travelling by night, they took refuge in caves, hills, and Native American villages. Some of New England’s political and religious leaders were sympathetic to their cause, and sheltered them for a time in cellars or barns. Often they were only a few steps ahead of the Royalists charged with arresting them. They lived in hiding in New Haven until 1664, then moved to a hidden room in the home of the minister of Hadley, Massachusetts. Here, in 1676, Goffe became the “Angel of Hadley” when, according to legend, he suddenly appeared during King Philip’s War to save the town from a Native attack without revealing his identity (Hutchinson, 1760, p. 53, 54).

Although official reports to the King from the Royalist pursuers ceased after 1661, the regicides were always in danger of being apprehended, and so continued their underground life. Both men eventually died of natural causes: Whalley in 1675 or 1676, and Goffe between 1679 and 1683; exact dates are not known. Further investigations into and rumors about their whereabouts endured into the 1680s.

For the following hundred years the regicides were largely forgotten. In the late eighteenth century, two American historians attempted to piece together their story: the infamous Massachusetts Bay Colony governor, Thomas Hutchinson, and the theologian and president of Yale College, Ezra Stiles.

Hutchinson began to research his colony’s past just as colonists were beginning to ask questions about who they were and where they came from. His research included the story of the regicides. In 1765 a mob, angered by Hutchinson’s enforcement of the Stamp Act, gutted his house and stole or destroyed his library of rare documents. Among them was Goffe’s diary and papers, leaving the excerpts Hutchinson had just published in *The History of the Colony of Massachusetts Bay* as the

only remnants of this firsthand narrative of the regicides' travels and hiding places. Only eight pages of Hutchinson's history, however, are devoted to the story of the regicides.

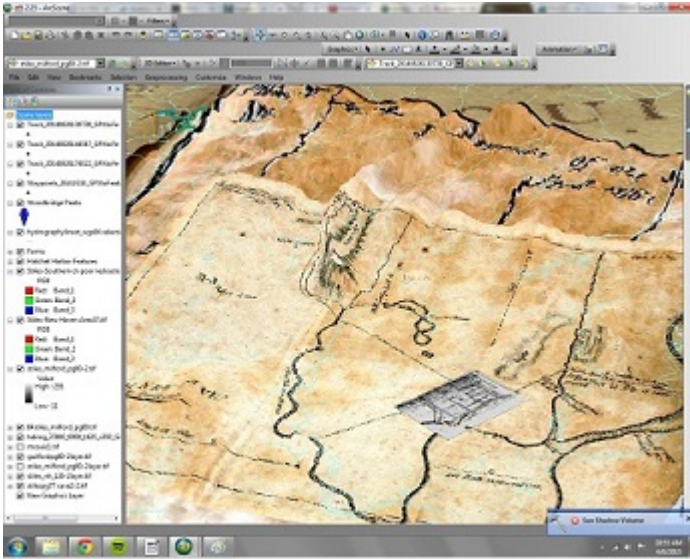
A young Ezra Stiles of New Haven had a chance to read Goffe's diary when he visited Hutchinson in 1763. Following Hutchinson's lead, Stiles researched extensively the evidence available of their movements. In his attempt to collect every scrap of information he could find, Stiles added oral histories from descendants of those who had encountered the fugitives or had lived through the turmoil of those times.

In 1793, during his long tenure as president of Yale, he published an almost four hundred page book devoted to the regicides and their New England travels, *A History of the Three Judges of Charles I.* (Stiles included in his research a far less important third regicide who also fled to Connecticut). His book presents a rather rambling, hypothetical narrative based on his research and interviews, which included about eight engraved plates of maps and illustrations he made. However, his use of second hand oral history as evidence has caused later historians to write off his work as speculation by an enthusiastic but overly credulous amateur historian (Welles, 1927). In recent years this view has come into question (Sargent, 1992).

Applying GIS to Stiles' Hypothesis

GIS has provided me the tools to examine Stiles' work in a new way and to suggest that his book should be taken more seriously. In my study of the regicides, the concept of "empirical falsification" has been useful. The concept means that, while a hypothesis or theory may never be absolutely proven, it can be falsified, that is, shown to be false through experiments (Popper, 1959, p. 19). The more experiments it survives without being shown to be false, the more credible the theory becomes. Theories about historical events are difficult, in that history is not reproducible: without a time machine, no one can observe a past event as it actually happened. However, while history is unreproducible, the geography that determined much of it, especially in the regicides case, can now, through GIS, be revisited and compared to the current landscape. In addition to the makeup of the landscape, the two men's choices about where and when to travel and hide were determined by their knowledge of terrain, learned as skilled generals. I can use GIS to see if Stiles' hypothesis, or narrative, can be falsified by creating a model of the hideouts he describes, comparing this model to today's geography of the region, and taking into consideration the fugitives' needs for secret hideouts and travel.

In order to test the ability of GIS to test the accuracy of Stiles' narrative, I focused on a short period of time in the spring and summer of 1661 and particular hideouts he describes near New Haven. According to Stiles, at that time the regicides were furiously shifting among cellars, woods, and the now so named "Judges' Cave" on West Rock near New Haven. This imposing 700-foot ridgeline provided a commanding view of the town and harbor, from which the regicides could watch ships arriving, and monitor the approaches to their hideout, a cave formed by a pile of massive boulders. However, this location was too conspicuous for a long term hideout, so the regicides moved deeper into the labyrinth of wooded hills and valleys to the northwest to a new hideout. Goffe, in letters and his diary, refers to this hideout as "Hatchet Harbor," a name found nowhere else. Although both hideouts are on a hand-drawn map in Stiles' book, the map is not to scale, nor are any nearby features shown. Even with this information organized into my geodatabase, it was not sufficient to locate Hatchet Harbor specifically in the hills beyond West Rock. Other sources describing this area were not helpful as they were generally vague, or used different, local names. A screenshot of the GIS program showing layered maps made by Stiles of the New Haven area.



A screenshot of the GIS program showing layered maps made by Stiles of the New Haven area.

After building the database, I used GIS to compare a variety of centuries-old maps and geographical descriptions with modern geographic data, as other historians have done using GIS. After layering the simple woodcut maps that Stiles published with more detailed local and regional historical and modern maps, I was able to make them all geographically accurate. The largest maps cover all of New England, while some maps were floor plans of houses, but they can all be simultaneously draped over the real geography in order to compare them. By cross referencing these maps with spreadsheets of information from other sources, I realized that many references were to the same locations using different names. This allowed me to consolidate the names given by the different sources so that the database linked references to “The

Lodge,” Hatchet Harbor,” and “The “Third Residence” all to the same location table entry.

Eventually I was able to reconstruct much of the landscape of New Haven colony in a three dimensional model. Separate layers were made for natural and manmade features, such as streets, buildings, and streams that no longer exist, each linked to the database that contained categorized attributes for each feature. GIS maps of modern cities are constructed in this way. By navigating on the map to Hatchet Harbor, and then clicking on the displayed date range during which the regicides camped at this location, this “event” and all of the associated information is opened in a spreadsheet.

Thus historical maps, geographical features past and present, and the locations of the regicides along with many other relevant people are simultaneously fitted on a single giant framework. GIS is standardized, so any sort of aerial photography, land use data, geological maps, street maps, etc., can be integrated with my data. One can navigate through layered, different interpretations of the dense cluster of events near New Haven and then zoom to markers showing the regicides' arrival in Boston, all on a single map.

View Steven's video on YouTube, [Mapping the Regicides in New England with GIS](https://www.youtube.com/watch?v=FA5kI2XWiuk)
>> <https://www.youtube.com/watch?v=FA5kI2XWiuk>

Retracing Stiles' Steps

Still, my work had done little but consolidate and compare the work of Stiles and others in a new format. The two men's stay at Hatchet Harbor remained a months-long gap in the narrative that I could not place on the map. I knew that verifying Stiles' description of Hatchet Harbor could not be done from a computer. I would have to find it in person.

According to a story collected by Stiles, the regicides had named their hideout Hatchet Harbor because they had found a hatchet there that they used to build a shelter. Historians, not knowing this,

looked for an actual coastal harbor. Stiles was the only one with the patience to put together local legends with landmarks mentioned in the excerpts from Goffe's diary published by Hutchinson in order to locate Hatchet Harbor. He then explored the wilderness around New Haven for these landmarks: the Race (a stream), Hatchet Valley, and a hilltop called Home's Fort. After comparing Stiles' description of the hills, streams, and valleys surrounding Hatchet Harbor to the modern day landscape, and looking at the names of old farms and roads he referenced, I became confident enough to go to the field in the final week of my research in August of 2014.

I downloaded the theoretical coordinates of Hatchet Harbor onto my handheld GPS and printed out maps of what is now called Peck's Hill in the Elderslie Nature Preserve of Woodbridge, Connecticut, about a mile northwest of West Rock. It turned out that the reputation of this area as a possible location of Hatchet Harbor was already known to the park, but the hideout could be anywhere within a couple square miles of woods.

Throughout the morning, I methodically crisscrossed the hills in search of what Stiles described as Hatchet Harbor, a twenty foot high rock face that once had logs piled against it to form a lean to. By noon I had found only a variety of pitiful "cliffs." While looping back over a ridge, I finally saw the ninety foot long, vertical rock face that appeared just as Stiles described it. For anyone approaching from New Haven as I had, the regicides' abode would have been invisible until they were right on top of it. After taking coordinates, tape measurements, and pictures, I looked for the other features that Stiles described. A few hundred yards to the east lay a valley and stream matching Stiles' description of Hatchet Valley and the Race. On the other side of the Valley stood the "Lookout," where the regicides could have stood, surveying New Haven and watching for approaching ships.

While it might seem that the regicides could choose any hill to build their hideout on, GIS revealed that the hill they chose is in fact the ideal location for someone on the run. They were hidden on a reverse slope with easy access to a commanding view and near a farm from which supplies provided by secret sympathizers reached them. Most importantly, if there was trouble, they could disappear into the wilderness beyond; there were no English settlements between them and the Pacific Ocean. Thus I was able to test the reliability and attempt to falsify Stiles' account by seeing if he was referring to a real location and whether that location was consistent with what the regicides would be looking for in a hiding spot.

My project attempted to construct the regicides' entire twenty years in New England in this much detail, and searching for Hatchet Harbor is one small piece of it. I think this example demonstrates the power of GIS for historical reconstruction of changes in the geographic distribution of people and resources. As I continue to build my digital model of seventeenth-century New England, I am confident that GIS's utility for historians will continue to evolve.

Go to Steven's website at <http://mappingtheregicides.omeka.net/>

My work on this project and success at UNH would be impossible without the help and support of many people. First of all, I deeply appreciate my faculty mentor, Dr. Cynthia Van Zandt, for having the confidence in me to learn an entirely new set of skills in GIS, and for sharing her vast expertise in the seventeenth century Atlantic world. Through her help in this project, I have met many wonderful people in the history department, including Professor Jan Golinski, with whom I am completing my Honors thesis in history of science. I want to thank Shane Bradt at UNH Cooperative Extension, who taught me to use GIS, gave me access to the software, and answered all my questions. Thanks go to the donors who made my Summer Undergraduate Research Fellowship (SURF) possible: the Rogers

Family Undergraduate Research Fund and the Donald J. Wilcox Endowed Fellowship Fund. Dr. Jessica Lepler of the history department and the staff of the Hamel Center for Undergraduate Research also made my SURF experience possible. Finally, thanks to Inquiry journal for publishing my article.

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Author and Mentor Bios

A position as a research assistant led history major **Steven Cowley** to the seventeenth century and into learning complex mapmaking skills through Geographic Information Science. About the past, he learned that "it's easy to dismiss the value and complexity of the past if we assume that our technological achievements today mean that we have it figured out." About research, he came to realize that, "I will never know how much I don't know, and consequently what might seem a simple task may in fact be far more complicated than anticipated." Steven comes from Southamton, Massachusetts, is a member of the University Honors in Major program and will graduate in May 2016 with a bachelor of arts in history from the University of New Hampshire. He is currently finishing his Honors Thesis on the history of the nineteenth-century geologist and theologian, Edward Hitchcock. Steven feels, "digital mapmaking will be a part of whatever path I take."

When Steven heard about Dr. **Cynthia Van Zandt's** research, he was immediately interested. Dr. Van Zandt is an associate professor in the Department of History at the University of New Hampshire, where she has been since 1998. Her specialty is the seventeenth-century Atlantic world, and her current research focuses on the radical puritan underground of the 1660s in England and North America. She agreed to be Steven's mentor for a Summer Undergraduate Research Fellowship (SURF) and for his *Inquiry* article—both first-time experiences. His technical skills, she admitted, were outside hers, and she admired how he learned more for this project. "It was wonderful to work with him," she said, "at the intersection of technical GIS mapping with more traditional textual research and historical analysis. I think we both had a lot of fun." Dr. Van Zandt believes that "it's always useful for historians to learn how to communicate effectively for the broadest possible audience. *Inquiry* offers a terrific way for student writers to do that."