RESEARCH ARTICLES

Frontier Settlement Development and "Initial Conditions": The Case of the North Carolina Piedmont and the Indian Trading Path

G. Rebecca Dobbs

That pre-existing conditions influence the later evolution of a cultural landscape is something of a truism in geography. Broadly speaking, we as geographers understand that, as Wood says, "[h]uman geographic patterns reflect cultural habits of interaction and organization. Such geographic patterns, however, tend to persist long after the cultural habits that produced them have faded away. Because they persist, geographical patterns condition subsequent human activity."[1] Where this understanding sometimes breaks down is at the interface of the indigenous and the settler in time and space. As Harris explains in the context of British Columbia, settlers assume they are coming into a "wilderness and that they are bearers of civilization. Living within this imaginative geography, they associate colonialism with other places and other lives…The equation is simple and powerful, but leaves out thousands of human years and lives."[2] In particular, if there is a "settlement discontinuity," the incoming settlers are likely to be unaware of the presence or significance of relict landscapes such as depopulated villages and subsistence structures.[3]

It is not merely the settlers on the ground who experience this disconnect, but often settler societies as a whole, and this taken-for-granted understanding then colors scholarly undertakings as well as everyday knowledge. Such has been the case in Anglophone geography until lately. In the last few decades there has been increasing scholarly recognition that the Americas before the arrival of Europeans did not comprise virgin or pristine landscapes. Mitchell, for instance, writes about Indians' alterations of the landscape, through fire and other means, in the Shenandoah Valley, while Cronon details Indian environmental effects in New England, pointing out that what the early settlers found was the result either of Indian activities or of the cessation of those activities following depopulation from

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early exposures to European diseases.[4] In 1992, as a response to the Columbian quincentennial, the *Annals of the Association of American Geographers* published several papers describing indigenous alterations of the landscape across the Americas, including not only settlements and routes, but also complex agricultural systems and resource management systems.[5] More recently, a growing body of work across several disciplines treats, or asks others to treat, indigenous peoples not as passive victims of European expansionism but as human groups with full agency, making decisions and adopting strategies to deal with the changes Europeans' presence brought.[6] In the last few years, geographers have begun calling upon the discipline to decolonize itself, to cease contributing to the ongoing colonization of indigenous peoples through the way they carry out their scholarly work.[7]

Little of this shift in disciplinary thinking can yet be seen in the historical geography of settlement development, although the idea that settlers in the eastern colonies of North America were aware of and made decisions based on such features as Indian fields or trails is not new. Lemon, for example, makes statements to this effect.[8] Little if any empirical analysis of the influence of such features has been done, however, and much historical geography of settlement development in North America (with some exceptions such as Harris' work in British Columbia) has proceeded as if European settlement were written onto a surface devoid of human landscape features. A "decolonization" of the historical geography of human settlement asks that we look beyond what settler cultures have inscribed on the land, to see what was already there, and how it "condition[ed] subsequent human activity."[9]

I argue in this paper that European settlement in colonized lands cannot be fully understood without taking "initial conditions" into account. I use this term to refer to conditions as the incoming settlers found them, even though these would hardly have been "initial" conditions for the indigenous inhabitants of the same time period. In the case of my research on the North Carolina backcountry of the 18th century, "initial conditions" include the physical geography of region and site, the configuration of regional access, and the presence of a pre-existing, Indian-origin road known as the Indian Trading Path. My research focuses on the influence of that road on both the emergence of the towns along it and the development of those towns into an integrated system, one which later evolved into a polycentric urban region dominating North Carolina's urban structure (Figure 1).

In the next section I discuss the North Carolina Piedmont and its indigenous and settler occupants in and prior to the 18th century. Following that, I examine key ideas about frontier settlement development, then show how these ideas can contribute to a new understanding of how colonial settlement in the North Carolina Piedmont developed. In support of this I propose a new model at two scales, based on "initial conditions" at both scales. I then present research results from Phase I of an ongoing project, addressing the applicability of this new model at the town scale.
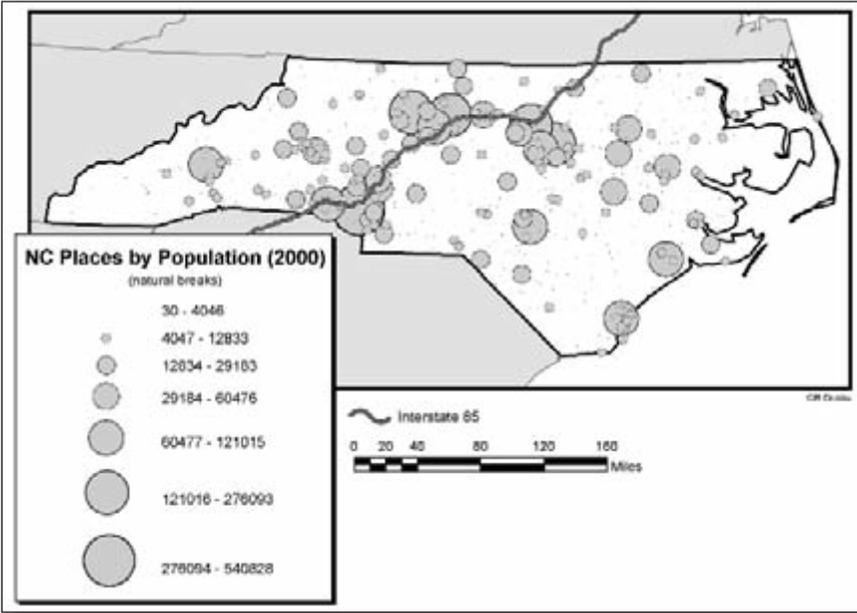
Figure 1. North Carolina's Piedmont Urban Crescent and Interstate 85. (Map by the author using data from the United States Census, 2000.)

The North Carolina Piedmont and the Indian Trading Path

The Piedmont of North Carolina is broadly characterized as an area of rolling hills. The region consists of a highly dissected plateau rising gradually in elevation from about 300 feet at its eastern edge, where it rises from the low, flat Coastal Plain, to some 1500 feet at the west where it gives way to the mountains.[10] Rivers tend to flow from northwest to southeast across this elevation gradient, affecting the ease and directionality of travel. These same rivers are generally navigable across the Coastal Plain but not into the Piedmont; falls typically occur at the change of elevation. Rivers and streams in the Piedmont tend to be difficult to cross, especially after one of the frequent rains, as they are fast-flowing and have numerous small falls and rapids. This exacerbates transportation constraints. Terrain in the Piedmont is far from uniform, and this likewise has affected transportation, particularly in the European wagon period.

During the period preceding European settlement of the area, the North Carolina Piedmont was occupied by a number of groups of Eastern Siouan Indians (Figure 2). During the Late Woodland period (800-1600 CE) Indians in North Carolina generally were becoming more agriculturally oriented, though hunting and gathering also remained important. Populations became larger and villages larger and more complex, and more likely to locate in broad fertile bottoms suited to agriculture.[11] Most of the Siouan groups in the northern Piedmont were "aligned with the Trading Path (either directly on the path or close to it)."[12]

Extensive social and economic interaction, and associated mobility, among Indian peoples before the disruption of societies and networks has been documented at different scales and from different perspectives. Merrell points out, for instance, that when European traders engaged Piedmont Indians in trade, they were stepping into a "deeply rooted system of aboriginal commerce."[13] Rountree reports that the people of the Eastern Woodlands, when first observed by Europeans, had an established tradition of long-distance travel, journeying sometimes hundreds of miles, for purposes of diplomacy, trade, and warfare.[14] Along similar lines, Cobb and Nassaney document from archaeological evidence a high level of interaction in the Late Woodland period Southeast along "established routes, suggesting some form of bidirectional and regularly maintained exchange networks."[15] Within North Carolina, the relocation of groups with some frequency, as well as seasonal movement to and among hunting camps, is known through both archaeological and ethnohistorical evidence.[16] Furthermore, the cultural tradition of hospitality to visitors encountered by peaceful travelers in the Piedmont argues for a long-standing system of interaction between groups.[17] Such local interaction, for social events such as ball games and festivals as well as for trade and political meetings, supported the "vitality of Indian community life" across the Southeast.[18] All this movement would have required a network of transportation routes, "well established and probably ancient."[19] Then, as now, there would have been major thoroughfares that connected far places, and smaller trails for travel between local places.[20]

Where early maps of the Southeast and of North Carolina by European cartographers show trails, they are trails that extend long distances, which can be read as major, enduring routes. The Indian Trading Path was one of these, appearing on the Ogilby map of c. 1672 and the Moseley map of 1733, among others. The journals of several European travelers also give

Figure 2. Selected Indian groups in North Carolina during the contact era. (Map by the author, after William S. Powell, *North Carolina through Four Centuries* [Chapel Hill: University of North Carolina Press, 1989].)
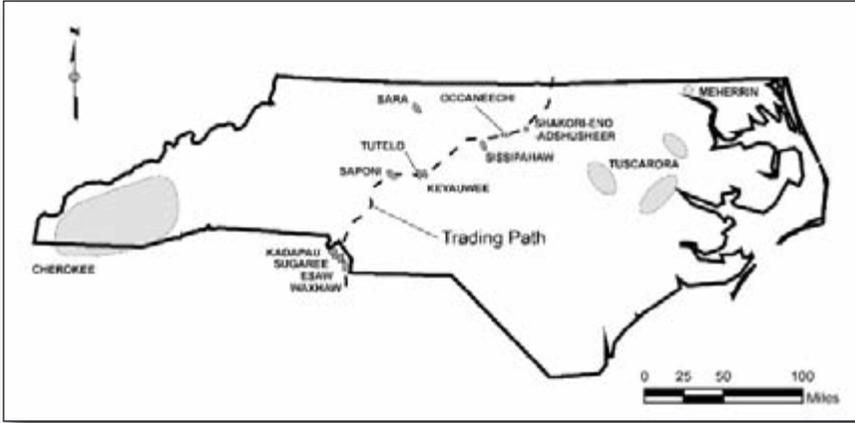
Figure 3. North Carolina Indian groups in 1700. (Map by the author, after R.P. Stephen Davis, Jr., "The cultural landscape of the North Carolina Piedmont at contact," in *The transformation of the Southeastern Indians 1540-1760*, Robbie Ethridge and Charles Hudson, eds. [Jackson: University Press of Mississippi, 2002], 135-154.)

evidence of the prominence of the Indian Trading Path, including John Lederer in 1670, James Needham and Gabriel Arthur in 1673, and John Lawson in 1701.[21] Traders, both Indian and European, used the Path regularly (hence its name), though they generally did not write diaries about it; instead, others wrote of their encounters with traders on the Path or from other knowledge.[22] Numerous scholarly works describe the importance of the Indian trade carried out by both Virginians and South Carolinians, in which the Trading Path played a major role.[23]

     As changes unfolded in the contact-era Southeast, both European traders and Indians used the Path more intensively. By 1650, around the time English traders began to use the Path, Piedmont Indian groups had diverged into recognizable subgroups which were located where the Trading Path crossed the Piedmont's rivers, taking advantage of both the fertile bottoms and the region's major transportation route. By 1700 these groups had consolidated to smaller locations where river and Path crossed[24] (Figure 3). Pressures on Indian groups in both the North and the South caused increased Indian use of the path for raiding, trading, and refuge.

     Within North Carolina, depopulation from European diseases affected the northern and southern Piedmont at different times in a pattern that appears related to the depth of trade engagement with the English, along the Indian Trading Path. Both areas appear to have avoided depopulation from the incursions of Hernando de Soto and Juan Pardo in the 16th century. In the northern Piedmont, two stages of depopulation are apparent, the first occurring in the last years of the 17th century through what has been named the Great Southeastern Smallpox Epidemic of 1696-1700, and the second following soon after, but possibly attributable more to migration than to disease.[25] The result was that the upper Piedmont was virtually uninhabited when the great waves of European settlers arrived from the north. In the southern Piedmont, John Lawson's observations in 1701

indicate that the populations had not yet been affected by epidemic disease when he passed through, but the smallpox was apparently diffusing down the Trading Path as Lawson was traveling up it, so the effects would have been felt in the southern area shortly after his passage. By 1720 the Catawba Nation (an amalgam of the surviving Catawbas and the remnants of several other groups), in the southern Piedmont, was the only remaining Indian group along the Path.[26]

Use of the Path for trading and for other Indian activities necessarily declined once depopulation (and competition from South Carolina traders) had made the Virginia trade unprofitable and the upper Piedmont almost empty. As use of the Path declined, there was less reason for Indian groups to be located there, stimulating a gradual relocation of the surviving Indians toward existing European settlements in Virginia and South Carolina. The Path's peak period before it began channeling European settlers into the Piedmont, then, was probably the last quarter of the 17th century.[27]

Though no large influx of Europeans into the North Carolina Piedmont occurred before the 1740s, there were certainly Europeans—along with some Africans and small numbers of remaining Indians—living in the region before that time. The total population of the Piedmont in the early 1740s was an estimated "few hundred." Some of these would have been people who preferred a backwoods environment; many of that group would have moved on as large-scale in-migration began and encroached on their backwoods territory.[28]

Beginning in the 1740s, streams of Europeans traveling south from Virginia and points north migrated into the North Carolina Piedmont. A variety of both push and pull factors stimulated this phenomenon.[29] The migrants traveled overland with wagons, using two main routes: the Great Wagon Road, an old Indian road through the Shenandoah Valley; and the Indian Trading Path. The transformation of the backcountry was dramatic. The population rose to some 39,000 Europeans and 3,000 Africans in 1767.[30] These new occupants inscribed the physical and social infrastructure of a European society, albeit a modified one, onto the landscape during these two or three decades. Travelers during the early 1750s described businesses dedicated to servicing travelers, juridical structure, road-building, and other urban functions.[31] As part of this process, towns were formally established in addition to informal clusters of such urban functions arising on the landscape. Of the four main settlements that arose in the 1750s (Hillsborough, Salisbury, Charlotte, and the cluster of settlements that became Winston-Salem), the Winston-Salem towns were on the Great Wagon Road; the other three were on the Indian Trading Path.

Key ideas about frontier settlement development

Certain key ideas regarding the development of settlements and settlement systems in non-coastal colonial frontier situations are relevant to this research. These ideas, drawn from earlier works of historical geog-

raphy in North American settings, form the building blocks of a new way of understanding 18th century settlement development in the North Carolina Piedmont, discussed in the next section. Note that the term "settlement development" encompasses processes occurring at two different scales: one set of processes contributing to the formation of individual towns, and another set, with some overlap, contributing to the development of integrated systems of towns. At the scale of individual towns, the key ideas are urban functions and the traits of clustering, centrality, and urbanism. At the scale of the system, the regional entrepôt is a key idea, along with the related concepts of linearity and connectivity.

The colonial South has long been thought of as lacking in urbanization, yet it did not lack urban functions, which, in the absence of towns, were sometimes carried out in very small places. Ernst and Merrens suggest that any settlement carrying out urban functions, and, through these functions, integrated with a hinterland, should be considered an urban place even if it did not meet European conceptions about urban form and population size.[32] Though the North Carolina Piedmont, in concert with other Southern backcountry regions such as the Shenandoah Valley, underwent an "urban experience of considerable magnitude" during the 18th century,[33] it is useful to think of the early foci of this explosive growth in terms of urban functions, while their physical forms were yet small and embryonic.

The ideas of clustering, centrality, and urbanism derive from Mitchell's discussion of town formation in the Chesapeake colonies.[34] In those circumstances where a town did form or might have formed, these are the factors he considers essential to its creation and sustenance. Clustering refers to the emergence of an area of higher population density within the rural settlement fabric, and is considered a necessary precursor to the development of a town. A commitment to urbanism is as important as density, however. There must be a critical mass of people who are willing to live an urban life, to buy town lots and build on them and actually live in the town. Without such a mass, the town will fail.

The third critical factor in Mitchell's town formation sequences is centrality, a concept which "capture[s] the magnetism of location and the focal character of human activities." Centrality is defined as "the surplus of importance of a place, or the ability of a place to provide goods and services in excess of the needs of its own residents."[35] Mitchell and Hofstra stress the concept of town and country as parts of one integrated whole; from this perspective, such an excess of goods and services is a requirement to sustain not only the town but the whole system. Thus rural density supports the centrality of the town, and the centrality of the town supports the rural density as well as its own.[36]

This conceptualization of centrality is essentially aspatial, focused on a reciprocal economic relationship. In contrast, most geographers conceive of central place theory at least partially in spatial terms, because of the theory's implications for spatial distribution of higher and lower order central places. Central place theory, having originated in a European setting,

is not always satisfactory for explaining the development of settlement systems in North America; Whebell suggests that linearity may be more critical than centrality in some cases. The key to the linear form of some systems, for example in Southern Ontario, lies in transportation routes. Settlements established early and connected by the most efficient routes along a linear corridor become the senior towns and maintain their dominance in the system over time because they lie on the main path of diffusion as well as commerce.[37]

While central place theory predicts that the highest-order place will lie at the center of the system, in North America it is much more common for the largest city in a system to begin as a regional entrepôt lying at the edge of the system.[38] The regional entrepôt is the node that connects an interior frontier settlement system with the older, more established region beyond, the point through which goods, people, and ideas pass in both directions. As modeled by Muller, there is a single regional entrepôt in the frontier settlement system, and this town is where the greatest growth will occur.[39] In the Shenandoah Valley, commonly portrayed as analogous to the North Carolina Piedmont, Winchester fills this role.

Muller also stresses the connectivity between places as fundamental to the formation of settlement systems,[40] yet connectivity is not a straightforward concept in the case of the North Carolina Piedmont. While the Shenandoah Valley settlement system also lies along an important (Indian origin) long-distance route connecting several states, the system developed more as if it were on a cul-de-sac, with Winchester connecting the system to Philadelphia and the Atlantic world. The North Carolina Piedmont is markedly different. It is, paradoxically, both better and worse connected to the wider world than is the Shenandoah Valley. The particular qualities of its connectivity, external and internal, are key elements for any attempt to understand the development of its settlement system and also its individual towns. In the next section I discuss the peculiarities of the North Carolina Piedmont in terms of connectivity, and then lay out a model for understanding the region's 18th century settlement development.

A new model of settlement development in the North Carolina Piedmont

In comparison to the Shenandoah Valley, the North Carolina Piedmont had no easy connection to the Atlantic world; North Carolina had no port city in Philadelphia's class, and even if it had, the backcountry had no direct connectivity to the colony's eastern reaches. For North Carolina Piedmont farmers to export their agricultural or artisanal produce, there were four choices, none particularly good: travel overland to Cross Creek (Fayetteville), North Carolina's only fall line town; travel up the Indian Trading Path to a Virginia port; travel down the Indian Trading Path and connect with another route going to the port of Charleston; or travel up the Great Wagon Road to Winchester and then Philadelphia. Piedmont

farmers did all of these things, if not easily. It is this extra layer of difficulty that made the North Carolina Piedmont worse connected than the Shenandoah Valley.

Yet the North Carolina Piedmont was also better connected than the Shenandoah Valley, in two ways. First, the long-distance route through North Carolina was perhaps a more useful one, in the changing circumstances of colonial America, than the Great Wagon Road. It provided a flexible link across the Piedmont's difficult physical geography which allowed people to travel in many directions and to many destinations, in contrast to the Great Wagon Road. This linking role (a role currently played by Interstate 85) meant the Indian Trading Path was traveled for a great many reasons beyond migration. Second, because of the lack of a single dominant, well-connected node similar to Winchester, the region developed not one but three, arguably four, regional entrepôts serving the North Carolina Piedmont as an integrated system. The three clear entrepôts, sentinels at the points where the system connected to the outside world, were Hillsborough, Charlotte, and the Moravian settlements which later became Winston-Salem. The fourth, Salisbury, can be viewed as an entrepôt because of its direct connection to Cross Creek (connected in turn to the port at Wilmington), although it can also profitably be viewed as an internal node of the system, situated as it was at the junction of the two main routes and near the most important ford of the Yadkin River. Whether Salisbury is considered a node or an entrepôt, the North Carolina Piedmont differed from Muller's interior frontier model with its one regional entrepôt.

Internal connectivity is also important in the development of the North Carolina Piedmont settlement system. The difficulty inherent in getting either produce to or goods from the outside world encouraged a high degree of internal regional self-sufficiency and interdependence. This was evidenced by the number and sophistication of artisans present in the North Carolina backcountry, and by the activities of traders in the form of merchants and tavern-keepers.[41] As would be expected from Muller's model and the Shenandoah Valley example, as well as Lemon's descriptions of southeastern Pennsylvania,[42] a dual economy existed, with one branch connected to the Atlantic world and the other local and internal. Kars paints a picture of a society teeming with activity across the Piedmont backcountry, people interacting for social, religious, and political purposes well beyond their local neighborhoods. While one's local church or meetinghouse might have been the focus of many such activities, there were numerous broader events and longer-range contacts occurring.[43] This picture is supported by the number of connecting roads appearing on the 1770 Collet map of North Carolina,[44] which argues for a high level of contact among the towns and neighborhoods of the region. Most of these roads are not thoroughfares, but smaller roads constituting part of an internal network—the backbone of which was the Indian Trading Path.

Conceptually, the connectivity characteristics of this region set it apart from previous models that attempt to explain either town formation or settlement system development in the backcountry. Below I describe a

provisional model for town and system development in the backcountry of North Carolina, specifically, that incorporates this connectivity and requires attention to "initial conditions" both locally and regionally. Dependent on geographical specificity at both the regional scale and the local scale, it is not intended to be a general model. I do expect, however, that the concepts incorporated in this model might profitably be applied to other initial conditions in other historical and geographic contexts, and thus form the basis of a new generation of locally specific models to offset the "blank slate" geographies of the past.

The physical geography of the Piedmont, to the extent that it constrains transportation, constitutes one part of the initial conditions of settlement, one that operates at the regional scale. To the extent that physical geography helps form desirable sites for settlements, it also operates at the local scale. The other key aspect of initial conditions, operating at both local and regional scales, is the presence of landscape features of indigenous origin. I see the Indian Trading Path as the essential such landscape feature in the model, but the Great Wagon Road of course also played a part in the development of both towns and the overall system, and fields cleared by Indians also affected desirability of sites.

At the town scale (Figure 4), ideas about urban functions and about clustering, urbanism, and centrality, are important, as described below.
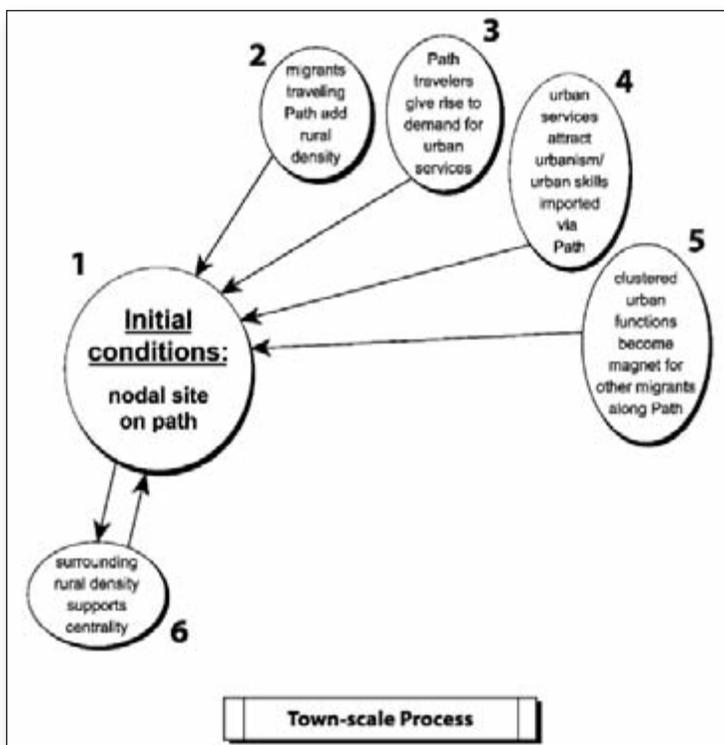

Figure 4. The town-scale model with initial conditions

At the beginning of significant European settlement (Stage 1), "initial conditions" exist, in the form of a site a) on the Indian Trading Path (or other important indigenous route) and b) possessing nodality. While nodality strictly speaking refers to the presence of intersecting routes, I apply it here to the intersection of the main route with a river or major creek, even though these are not navigable. Whebell suggests that where the "desire line," or the direction people want to go, "lies athwart" rivers or valleys, "transport alignments then aim at desirable 'least effort' crossing points, which may thus become the sites of significant towns."[45] Any place where the Trading Path crosses a river or large stream is assumed to be such a "least effort" location, based on field evidence regarding known crossing sites, and therefore likely to attract local paths to cross there along with the thoroughfare.

During Stage 2 the presence of the Path as a migration route introduces early land claimants to the area, and a higher density of such claims arises near the path than farther away from it. These early claims are likely to be rural/agricultural in nature, though some of the claimants may possess urban skills. A rural, open-country neighborhood emerges near or straddling the Path.

In Stage 3, the continued use of the Path for migration gives rise to demand for travelers' services, and urban functions develop at the site to meet this demand. Stage 4 sees the presence of these urban functions attracting new migrants with urban skills and a "commitment to urbanism." This escalation helps create centrality in the settlement.

As the number of urban-oriented inhabitants and urban services and institutions increases, the site becomes a growth magnet for new migrants traveling the Path (Stage 5), and may function as an intervening opportunity that attracts migrants whose original intention was to travel farther away. Some migrants will be attracted to the urbanizing area but prefer to farm rather than live in the emerging town, and so the rural density in the area surrounding the site will increase. This provides the needed density to support centrality in the settlement (Stage 6).

At the system scale (Figure 5), I draw on the regional entrepôt concept, but adapt it for the condition of more than one entrepôt. The idea of linearity associated with transportation is also important at this scale, as is connectivity.

First, again, "initial conditions" exist, at this scale in the form of two prior thoroughfares through the region (the Indian Trading Path and the Great Wagon Road) and connecting it to significant locations outside the region. In the second stage, the town formation process creates settlements at significant nodal locations on these thoroughfares. Open-country neighborhoods and small settlements develop in other locations as well.

Where these towns at significant nodal sites are positioned on the edge of the region and on one of the thoroughfares, they develop as regional entrepôts linking the region to the Atlantic world (Stage 3). Because of the nature of the choices available and the lack of an easy option, residents of the entire region may have interaction with the world beyond
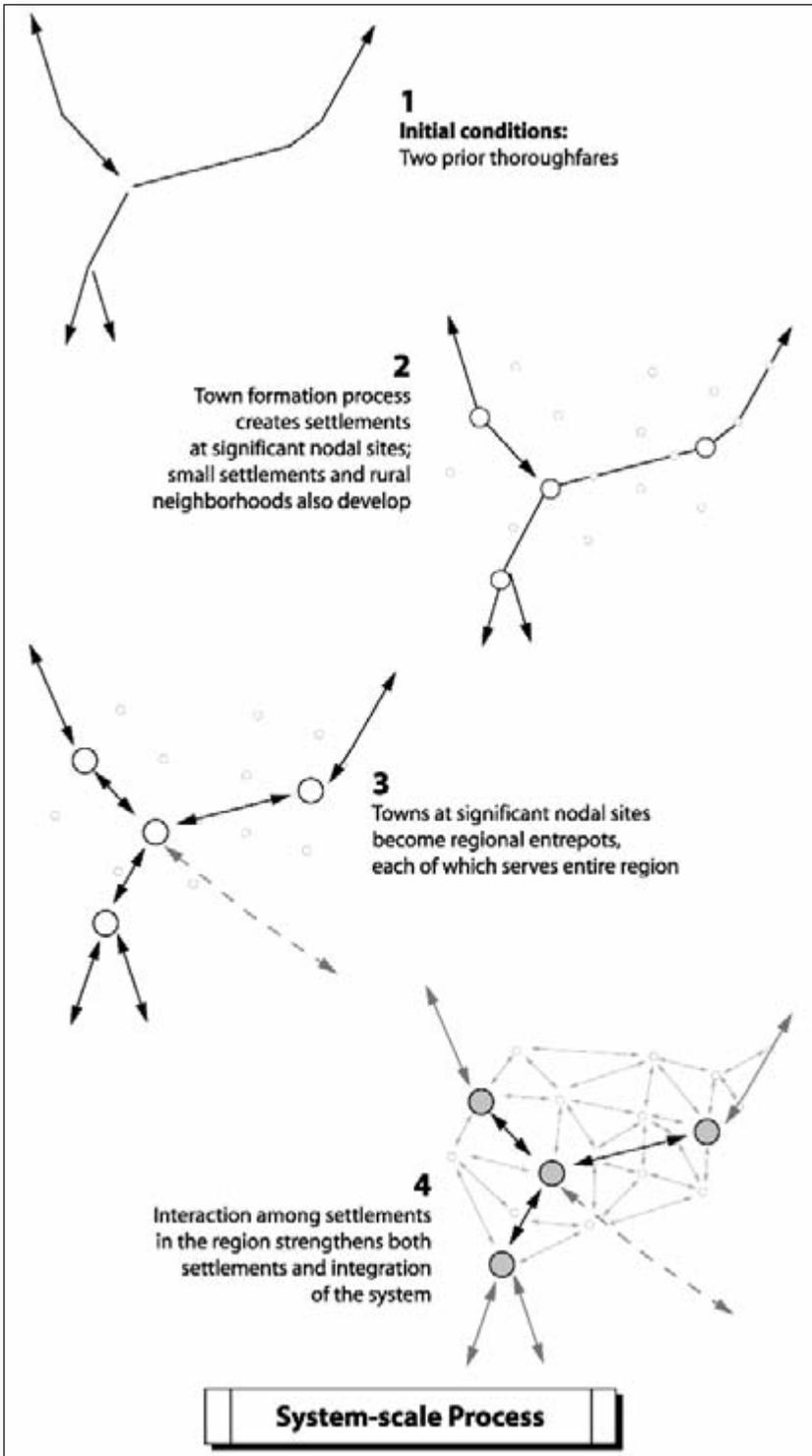
1

Initial conditions:
Two prior thoroughfares

2

Town formation process
creates settlements
at significant nodal sites;
small settlements and rural
neighborhoods also develop

3

Towns at significant nodal sites
become regional entrepots,
each of which serves entire region

4

Interaction among settlements
in the region strengthens both
settlements and integration
of the system

System-scale Process

Figure 5. The system-scale model with initial conditions

through any of the entrepôts, helping to form the regional settlement fabric into an interdependent system as people crisscross the region to reach one or another entrepôt.

Interaction, in Stage 4, among settlements within the region, for economic, social, religious, and political reasons, strengthens both individual settlements and the integration of the whole. Though individual towns develop centrality, the system does not develop into a classic central place system, because no one of the regional entrepôts gains enough dominance to become the highest order place in the system.

This two-scale model, incorporating both "initial conditions" and geographic specificity and drawing on key ideas from frontier settlement geography, demonstrates how an indigenous landscape feature such as the Indian Trading Path might have influenced European settlement development under the frontier conditions of the eighteenth-century North Carolina Piedmont. I turn now to my Phase I research results to test the town-scale model at the town of Hillsborough.

Initial research results in the North Carolina Piedmont

The research project described in this article involves the transformation of several thousand landgrant records from 1748 to 1763, from archival data to geographic information, and thence to understanding. Once the data were transformed into geographic information, GIS was used to help discern spatial and temporal patterns in the distribution of grants, and these patterns were interpreted in light of the town-scale model described above.

Landgrant records were chosen as the best existing dataset representing the inscription of European land ownership and use onto the Pied-
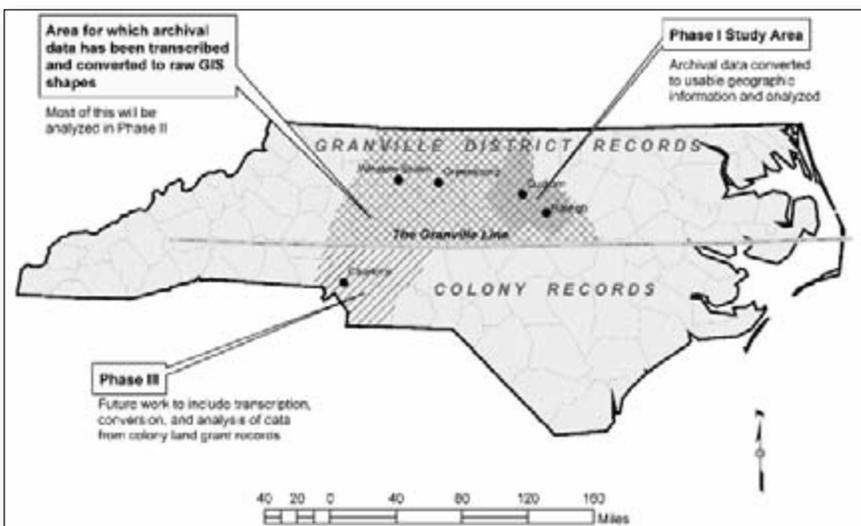

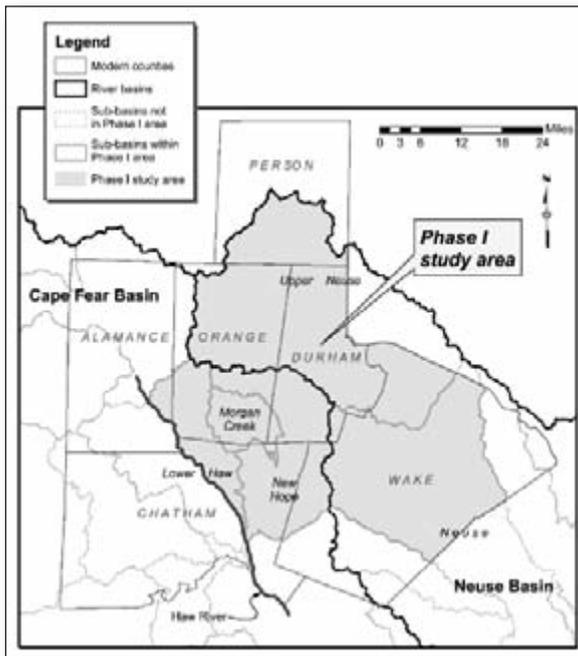Figure 6. Study areas and phases for the overall project

Figure 7. The Phase I study area

mont landscape, despite distortions of pattern introduced by large grants to the Moravians and to certain speculators. In theory, four distinct records were created for each grant of land.[46] First, a settler would enter a claim with the land agent, forming an *entry*, which typically described the tract and its location in broad terms. Second, the land agent would issue a *warrant* to a surveyor, authorizing him to proceed with a survey. The surveyor then created the third record, the *survey*, consisting of a plat drawing and a narrative description of the survey, and often containing information about neighbors and geographic features. Lastly, the grantee ended up with a *deed*, after appearing in court to "prove" the grant. Many researchers have focused on deeds, but given the inconsistent preservation of the records, the additional kinds of information present in the different record types, the copying errors common as each new record was produced, and the sometimes many years that elapsed between entry and deed, the decision to work with all extant records yields a more accurate picture of the settlement process. One should bear in mind that the objects mapped are tracts of land, not population, and that in fact each tract may have housed a considerable number of people, including extended family, tenants, squatters, and in some cases enslaved persons. In many of the records there is evidence of a previous generation of Europeans on the land, those ones who liked the backwoods life and did not form towns, nor leave any official documents because they never acquired formal ownership of the land.

The overall study area consists of most of the North Carolina Piedmont, focused on the present-day Piedmont Urban Crescent and its hinterlands (Figure 6). During the study period, the land granting process in
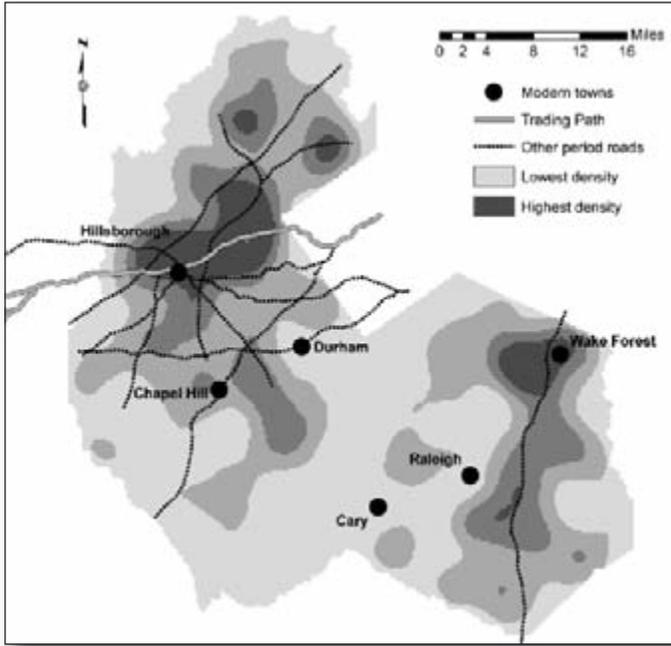
Figure 8. Reclassified kernel density of Phase I tracts, with period roads and modern towns

North Carolina was administratively divided into the Granville District, where land was granted by Lord Granville's agents, and the remainder of the colony, where land was granted directly by the Crown's representatives. Currently, the archival data from all of the relevant Granville District records has been transcribed into a purpose-built database,[47] and the entire process of data transformation has been completed for an area encompassing all or part of Durham, Wake, Orange, Person, Chatham, and Alamance counties (Figure 7). This Phase I area contains several present-day towns and cities, including Raleigh, the state capital, but of these only Hillsborough is located on the Trading Path and only Hillsborough emerged as a settlement during the study period. Though it became something of a backwater after terrain considerations caused it to be bypassed by the North Carolina Railroad in the 1850s, for a century Hillsborough was a town of great importance in the Piedmont. Indeed, the town played important roles in the history of the state and the young United States as well, and a consciousness of these historic roles influences local identity to this day.[48] In the remainder of this section, I discuss the results of the Phase I area landgrant mapping and analysis over time and space in relation to the emergence of Hillsborough and my town-scale model.

Once the archival landgrant records had been transcribed into the database, the tracts they represented were given the spatial attributes of shape (based on survey measurements) and location (based on clues in the form of feature descriptions and neighbors) in a GIS. Although there is uncertainty inherent in the documents and introduced at each stage of the

process as well, the pattern of grants at the scale of the Phase I area is likely to be substantially correct; it is this pattern that is the object of analysis, not the placement of individual grants.

Spatial pattern was investigated by converting the tracts as they existed in 1763 to points (centroids) for density analysis. Kernel density, which fits a smooth surface to the points,[49] was found to be more useful than simple density, and a reclassification of the kernel density results designed to accentuate the highest density areas is shown in Figure 8. In this figure it is clear that the largest area of high density in 1763 is focused on Hillsborough and is associated with not only the Trading Path but good crossing sites on the Eno River and the convergence of a number of additional routes. Other documentary evidence indicates the presence of old-fields as well, and it is known through both documents and archaeology that Hillsborough area was the site of numerous Indian villages in earlier times.[50] In short, this was one of the prime nodal sites of the Piedmont, and it had been since before the arrival of Europeans. In contrast, the other area of very high density shown was the result of several competing claims at the main falls on the Neuse River, and not the emergence of an actual settlement; the nearby town of Wake Forest did not emerge until several decades later.[51] The future sites of Durham, Cary, and Raleigh were all areas of low density in 1763. The only incipient settlement that appears, Chapel Hill, had a fairly dense rural neighborhood at that time but no actual settlement until after the 1792 decision to locate the university there.[52]

In the high-density areas north and south of Hillsborough, some interesting patterns regarding rural and urban settlement emerge. South of the town, the main area of higher density is along the rich New Hope bottoms in the Durham-Wadesboro Triassic basin. It is probable that in this instance the rich bottomland, not the road that likely continued through the valley, was what attracted settlers. North of the town and in some other areas immediately adjacent to it, we see high-density areas near but not straddling roads. This suggests a different emphasis in these rural areas from that at Hillsborough proper. For settlers performing urban functions, land on the road is vital; for those engaged in rural functions, land might be better located near, but not on, the road.[53] Thus we may be seeing an already-visible distinction between urban and rural functions. Another pattern of interest is the lack of tracts on the ridge between New Hope Creek and the western tributaries of the Neuse River. Since ridges are usually good locations for both roads and settlements, I speculate that this particular ridge might instead indicate a boundary between two different migration streams, with settlers from the eastern part of the colony settling along the lower Neuse while those following the Trading Path south settled in the upper Neuse and Cape Fear basins.

Temporal pattern is as important as spatial pattern in understanding how the settlement at Hillsborough developed. Here GIS is best used as a means of visualization. Examining the accumulation of tracts for each year in the study period, rather than just at the end of the study period, helps us view the emergence of Hillsborough as a process, one that is

complex and lumpy, in which human choices are made and spatial patterns established in response to conditions on the ground. It is through this visualized temporal sequence that the town's emergence can be tied to the stages of the town-scale model proposed above.

Figures 9a through 9e show the tracts as they existed during selected years in the process, according to evidence type.[54] In 1748, when the Granville land office opened, some key tracts had already been granted by the Crown to highly-placed individuals from the eastern settlements or from Britain. This represents Stage 1 of the model. Over the next two years, tracts were granted in seemingly random pattern throughout the study area. By 1751, however, there was a marked increase in tracts on and near the path in the Hillsborough area, associated with increased migration from the northern colonies. This represents Stage 2 of the model, the emergence of a rural open-country neighborhood straddling the Path. In 1753, more tracts appear right on the Path as well as in the surrounding rural area, representing Stage 3, the development of more urban functions to service travelers on the Path; the presence of such functions is known from the writings of some of these travelers. In 1754 the commitment to urbanism and the development of centrality, Stage 4, is evident not only in the in-
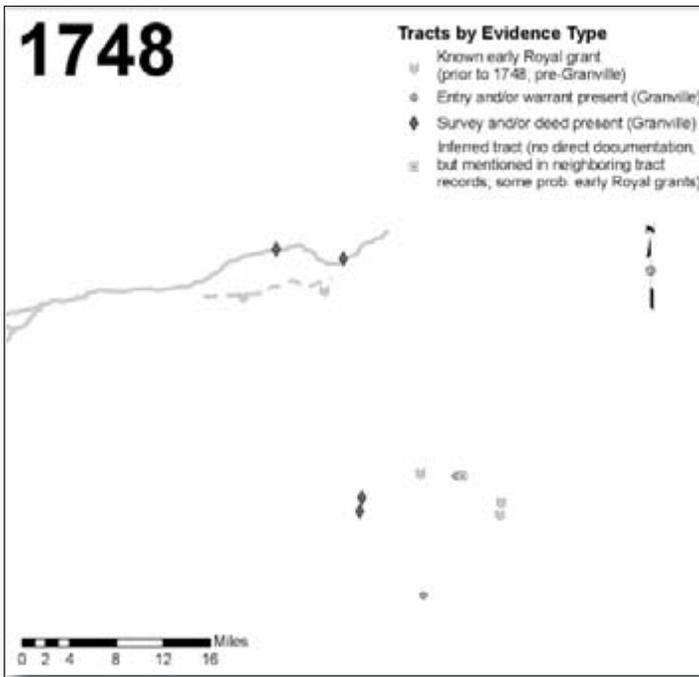

Figure 9a. Time series for Phase I tracts, by evidence type: 1748. In Figures 9a through 9e, the solid gray line represents the Indian Trading Path, including the "new" segment in use from the 1740s on; the dashed gray line represents the Old Trading Path or Catawba Path, in documented use in the 1730s, and probably into the 1740s.

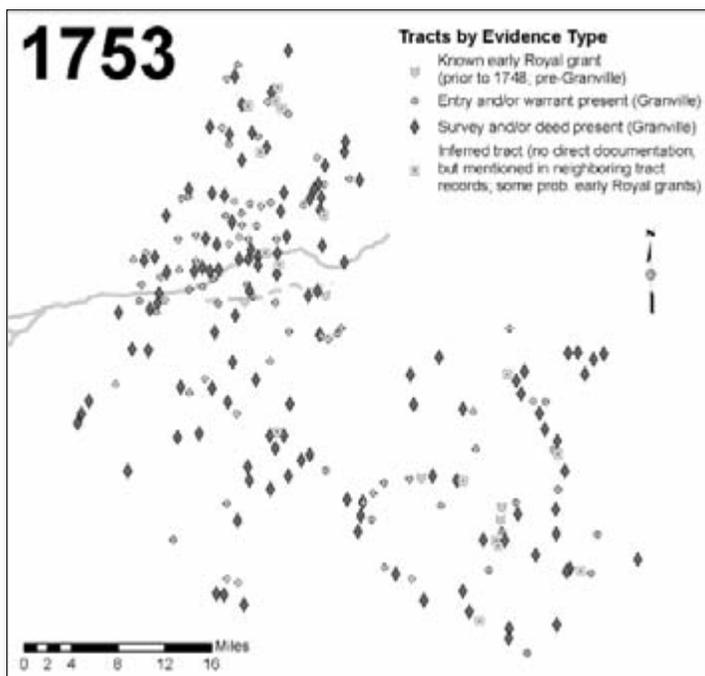Figure 9b. Time series for Phase I tracts, by evidence type: 1751.

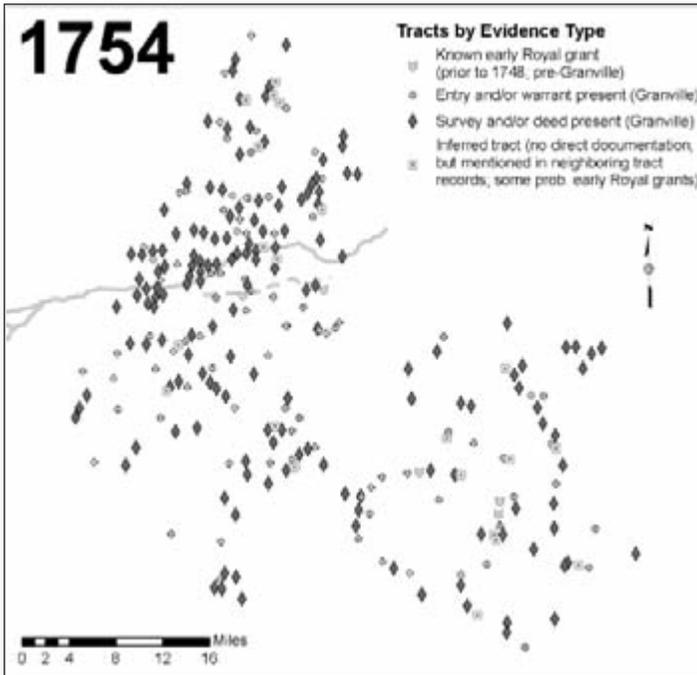Figure 9c. Time series for Phase I tracts, by evidence type: 1753.

Figure 9d. Time series for Phase I tracts, by evidence type: 1754.
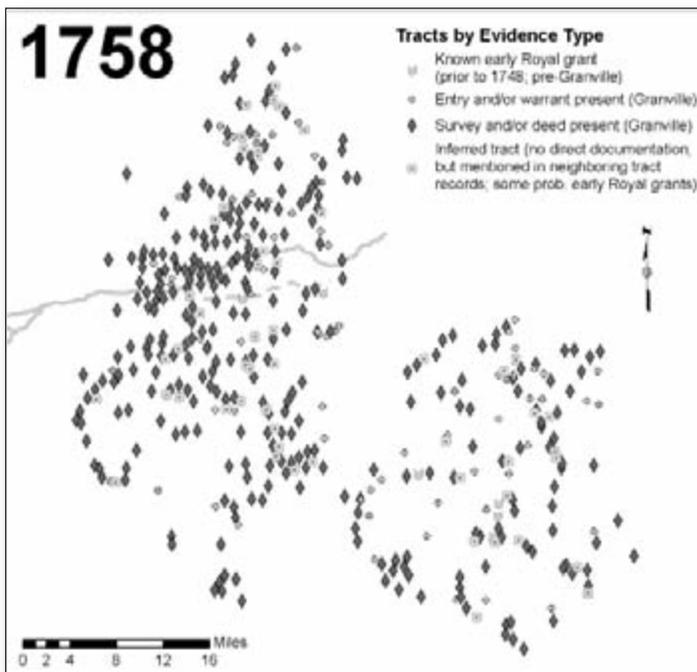

Figure 9e. Time series for Phase I tracts, by evidence type: 1758.

creased tract density almost exclusively along the Path at Hillsborough, but in the formal surveying of a town tract in that year and its subsequent subdivision into residential lots, even though the town was not officially incorporated until 1759.[55] From 1755 onward, increased tract density develops both at the town's general location and in its hinterlands, representing Stages 5 and 6, the settlement's ability to attract new migrants and the continuing growth of rural density to support the town's centrality. The area to the southeast of Hillsborough, near present-day Raleigh, does not gain significant density until fairly late in this sequence, around 1758 or 1759, and even so it remains more dispersed than clustered at the end of the sequence.

Conclusion

By utilizing the combination of spatial and temporal patterns derived from the 1748-1763 landgrant data, it is possible to construct an understanding of how the town of Hillsborough came to be, when and where it did. Although Hillsborough's emergence should be examined from the perspective of additional kinds of evidence to support that of the landgrant records, and although clearly the landgrant analysis needs to be completed over a wider area which includes more early town sites, the evidence of the Phase I analysis lends preliminary support to the thesis of an important role for the Indian Trading Path in the development of European settlements in the backcountry frontier of 18th century North Carolina.

The town-scale model tying specific aspects of town formation to the Path, tentatively supported by the landgrant research at Hillsborough, suggests a new way of thinking about how settlements develop in the context of colonized spaces, a way that requires attention to specific conditions that existed prior to the beginning of such colonial settlement. At both the town scale and the system scale, my model is dependent on earlier ideas regarding the development of towns in settler frontier contexts, but recombined and integrated with the specific characteristics of the 18th century North Carolina Piedmont (including but not limited to the major indigenous-origin roads). Modeling settlement development in this way helps to answer some of the most fundamental questions about the emergence of frontier settlements, such as "why here" and "how," that cannot be adequately answered if the landscape is conceived as a featureless plain and pre-existing conditions are not taken into consideration. This basic approach can be adapted by other researchers to help elucidate emergent settlements in other contexts, using the specific "initial conditions" found in those places.

In the broader sense, this research outcome serves to strengthen the growing knowledge that Europeans were, in fact, inscribing their settlement landscapes onto an existing human cultural landscape, as opposed to the "blank slate" most often claimed in the settler narrative. In the case of the North Carolina Piedmont, the key existing landscape feature, the In-

dian Trading Path, has persisted for two and a half centuries since its makers lost their dominance, despite changes in transportation technology and the vastly different settlement fabric of the new occupants. Yet features created by indigenous occupants need not have dominated their respective landscapes in such a way, to have influenced the locations and attributes of later settler landscapes. In this broader sense, the research presented above challenges historical geographers to look for influences that in a previous era of scholarly work were ignored by convention, and introduces an effective methodology for teasing out such influences in the establishment of settler landscapes.

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