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# The Face of the Game

## African Americans' Spatial Accessibility to Golf

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*This paper investigates the spatial accessibility of African Americans to golf as an example of continued social injustice. Because of its developmental diversity, demographic diversity, and rich golf history, North Carolina is chosen to examine the relationship between the spatial distributions of golf courses and African Americans. Most previous analyses of golf and ethnicity have focused on other dimensions of inaccessibility and have ignored the spatial dimension. Despite the impression that is left by Tiger Woods' success and notoriety, African Americans remain disproportionately inaccessible to golf. An index of net accessibility, controlling for market size, indicates that census tracts with high percentages of African-American population also are unexpectedly underserved with golf. The correlation between net access and percent black is  $-.56$ . Inaccessibility is illustrated in rural, metropolitan, elite golf resort, and coastal geographic settings. This case study illustrates the outcomes of profound power relations and tensions that are played out on carefully crafted islands of privilege that signify humanity's power over nature and its willingness to exclude portions of itself from the fruits of that power.*

**KEY WORDS:** accessibility, sports geography, golf, African American, North Carolina

This paper is not simply about a game. It is about something much larger. It is about a case of inequality that speaks in a revealing way about the larger issue of continued social injustice imbedded within America's landscapes of production and consumption. The African American's journey-to-golf has required the defeat of substantial social and geographic distance. Moreover, since much more has been written about the "social distance" involved in golf's inaccessibility to African Americans (e.g., McDaniel's [2000] *Uneven Lies*, Sinnette's [1998] *Forbidden Fairways*; and Kennedy's [2000] *A Course of Their Own*), it is instructive to consider the geographic dimension. Even with the possible relaxation of social and economic constraints, like discrimination and income inequities, the comparative spatial configuration of the landscapes of production and consumption could inhibit black participation in golf. Hence, the purpose of the research reported in this paper is to investigate the relative spatial accessibility of African Americans to golf. The case of golf is no less than a small scale and especially vivid metaphor for the larger imposition of power relations on space that results in islands of privilege.

## THE NEED FOR RESEARCH

Spatial accessibility has been one of the core concepts of spatial analysis in geographical modeling for several decades. Most simply put, spatial accessibility is the geographic definition of opportunity (Hanson 1995). Accessibility can be defined quantitatively in a variety of ways but intuitively is perhaps best understood as the number of activity sites within a certain distance or travel time. Any space-economy suffers from uneven development and inequalities. For instance, some residential areas are not very accessible to needed or desired activities like jobs or shopping. If American golf is located like most other opportunities, there is probably a spatial mismatch between the supply of golf and the distribution of African Americans. We certainly witness these types of spatial mismatches in supplying other aspects of life's opportunities, which have been documented elsewhere (Kain 1968; Wilson 1987; Kasarda 1989; Hodge 1996; Cooke 1996; Wyly 1996; McLafferty and Preston, 1996; Holloway 1996; Johnston-Anumonwo 1997; Gilbert 1998; Kwan 1999; Sultana 2000; Kaufmann 2002, etc.). This feature is probably true in golf, but it has remained unexamined.

Geographers like Bale (1982, 1988, 1994), Raitz (1995), Newsome and Comer (2000) and Alderman et al. (2003) have called for a more critical examination of the geography of sport. Sports geographers have largely ignored inequities in spatial access to American sport in general. In order to provide deeper explanations of the geography of sports, in terms of both sport production and sport consumption,

geographers are increasingly using a theoretically informed and cross-disciplinary approach (Bale 1988). It also is true that empirical studies of sports' spatial organization, in terms of spatial distributions and interactions, are more contextually and realistically interpreted as a result of broadening the categories of analysis and explanation, including the category of race. Alderman and his colleagues (2003) provide an excellent example of this critical approach to geographic analysis of sport, i.e., NASCAR. It comes as little surprise that their analysis quickly leads to incorporation of race as a key factor in their interpretation of NASCAR's ability and willingness to establish a national identity. In the case of golf, there exists an assortment of distributional studies (e.g., Adams and Rooney 1985; Adams and Rooney 1989; Rooney 1993; Rooney and Pillsbury 1992; Rooney and White 1994) and descriptive accounts of golf's evolving history and the types of landscapes that it produces (e.g., Adams 1995; Bale 1988; Adams and Rooney 1985; Rooney and Pillsbury 1992; Moss 2001). However, despite this substantial collective effort, which at least indirectly examines golf's accessibility, none of this past geographic research has focused attention upon the issue of golf's accessibility and race.

## GOLFING IN AMERICA

Golf has always been a largely exclusionary industry. Much of golf's exclusiveness has arisen from common constraints on most behaviors, like income and time (Petrick et al. 2001). Golf is very time-consuming, and it is expensive. However, it

should also be noted here that African Americans, women, children, people with disabilities, and Jews, among others, have suffered from disproportionate inaccessibility to the sport (Davidson 1982; Chambers 2000; Williams 2001; Sherborne 2000; Symonds 1990; Blank and McNatt 1998; Jeffreys 1999; Henry et al. 1991; Maas and Hasbrook 2001; Arndt 2002). In one of the few academic investigations of minority under-participation in golf, Gobster (1998) found that cost, time, and perceived discrimination were consistent factors. However, factors that also were frequently cited as deterrence involved physical barriers around the periphery of many, even public, courses that give the strong impression that most courses are intended to be private and exclusive. If the popular media are at least partially responsible for creating the image of exactly who the American golfer is, then golf continues to be largely elitist, racist, and sexist (Maas and Hasbrook 2001). The "paradigm citizen golfer," as dictated in media outlets such as *Sports Illustrated* and *Golf Digest*, suffers greatly from the hegemony of white masculinity. Despite numerous other changes in the golf industry (e.g., technological advances in clubs and balls, commercialization of apparel, merger and acquisition of courses, the development of golf management groups, growth in television revenues), the ethnicity of golf has remained rather homogeneous, with whites dominating participation rates in the United States. Whites comprise 90% of America's golfing population. Despite representing 13% of the U.S. population, blacks make up only 4% of the U.S. golf population (National Golf Foundation 2001).

#### AFRICAN-AMERICAN GOLF

At least a portion of the African-American community has actively encouraged and facilitated increased levels of golf participation in a number of organized ways. The United Golfers Association (UGA), which has operated under several names since 1925, was structured to represent the growing African-American golfing community. By 1939, there were 5,209 golf facilities in the United States and 20 of these were open to blacks (McDaniel 2000). At least on paper, access was gained through court cases such as *Holmes vs. Atlanta* (to gain access to Bobby Jones Golf Course, a public course, in 1955) or the Greensboro Six, arrested for trespassing on a "public" course in Greensboro, North Carolina in the late 1940s. Between 1945 and 1966, at least 33 court cases involved black golfers' access to supposedly public golf facilities (Sinnette 1998).

Mr. Bill Powell, an African American, opened Clearview Golf Course in Canton, Ohio in 1946. It is now on the Historic Register of Places, added to the list in February of 2001. Black ownership in the golf industry remains at a very low level. McDaniel (2000) reports African-American ownership of just four courses in the United States by the late 1990s. Charlie Sifford, born in North Carolina, was the first African American to become a PGA member in 1961 only after the "Caucasian only" clause was removed from the PGA Constitution. Sifford also was the first black to win a PGA event in 1967. Lee Elder was the first black to play in the Masters at Augusta National in 1975, although the first black member of that exclusive club would have

to wait to join until 1991. Elder also became the first black member of the U.S. Ryder Cup Team in 1979. Tiger Woods became the first African American Masters Champion in 1997.

#### THE GOLF INDUSTRY

The lack of African-American professional and high-level amateur golfers, coupled with the small number of African Americans working in the golf industry, facility owners, and low player participation rates, have become major concerns for professional and amateur golf associations largely because money, a vast sum of money, is at stake. The private golf and country clubs have always been most symbolic of the inaccessibility of African Americans to golf in general. As late as 1990, most country clubs were highly exclusionary. The PGA Championship held at Shoal Creek in Birmingham AL, during the summer of 1990 changed some, not all, of that (Finch 1990). A leading African-American citizen was denied membership, and the club's founder publicly indicated that his club would not be pressured into accepting blacks. With the threat of embarrassing picket lines, tournament sponsors cancelled more than \$2 million in advertisements from covering television networks. Corporate America clearly feared a negative consumer reaction. Nine days prior to the tournament, the PGA, Shoal Creek, and the Southern Christian Leadership Conference signed an agreement to integrate the club (Chambers 2000). In that same year, i.e., 1990, at least 75% of the nation's 5,232 private golf courses and country clubs had no black members and 17 out of 39 PGA tour

events were held at private clubs with no black members (Henry et al. 1991).

Changes in the industrial structure of golf could lead to greater access for minority golfers. For instance, there is a strong trend toward merger and acquisition (Lee 2000; *Wall Street Journal* 2002; Rundle 2002). American Golf Corporation operates over 300 courses in 30 states. Dallas based ClubCorp, which has owned the Pinehurst development in North Carolina since 1984, owns nearly 200 private clubs and resorts valued at nearly \$2 billion. These types of large golf firms, which own or manage multiple courses, are pressuring subsidiaries to end discriminatory practices. However, these requests are not always met with compliance (Chambers 2000). The fact that much of golf's revenue growth is associated with television coverage also pressures the industry to diversify because of advertiser expectations (Sterba 2000). Expensive corporate agreements, such as that between The Golf Channel (almost 14 million subscribers) and Pepsi, help to assure an expansionist mentality for consumer participation (Stogel 1997). With a more objective approach to golf course location and rational growth targets mandated from above, movements into untapped markets are expected. This is especially important during the recent economic slowdown when a host of the larger corporations that own or manage golf properties are experiencing financial problems (*Wall Street Journal* 2002; Grow and Palmer 2001). Approximately 25% of PGA sponsors' gross revenues come from black patrons. There is also the feeling amongst a few that if this "white" game can be exported to the inner city, then black kids

can be “civilized” in a socially appropriate way (Stossel 1998). Thus, golf can be seen to represent a kind of cultural imperialism. This implicit avenue of cultural imperialism is not only targeted for America’s inner cities but also is directed at the less developed world (Cole 2002).

#### RECENT EVENTS IN THE DISTRIBUTION OF GOLF

There are a total of 16,743 golf courses in the United States today. Of these, 71% (11,983) are open to the public (National Golf Foundation 2001). The later 1990s witnessed an explosion of new golf course development within the United States with an average of about 450 new courses per year (Vogel 2000). It is suggested that 84% of these new courses are accessible to the general public. However, many of these new courses are intended for tourism development and are not intended for local patronage (Colvin 2001). Advertising, dress codes, pricing, and group rates help to ensure that the local economic multiplier is maximized with longer-distance patronage.

A relatively new form of landscape element, the American golf community, also has grown rapidly in number since the 1990s. This configuration of course and homes provides obvious golf accessibility for a very limited few, i.e., surrounding homeowners. An intriguing analysis of the web-based promotional discourse of these golf communities reveals an advanced articulation of natural, material, and social spaces (DeChaine 2001). DeChaine argues that these golf communities represent uniquely imagined spaces in which identity is rooted and power wielded. These new communities achieve broader themes

of formative American ideologies like nature, individualism, and class privilege but are also accompanied by significant tensions concerning purity, exclusivity, and control. Homebuilders in Sunbelt cities price homes located near or on the edge of golf courses at \$20,000 more than the norm, holding other housing attributes constant. Many of these developers are packing as many as one thousand units in and around courses and they easily cover the cost of golf course construction, which is normally 8 to 10 million dollars (Grow and Palmer 2001). In any case, this type of spatial configuration certainly decreases the relative accessibility to golf for any outsider, including African Americans.

A few notable projects suggest that the concern for improved minority access to golf is actually being acted upon (Hyman 2000). By November of 2000, First Tee, a nonprofit with backing from the PGA, the USGA, and a number of wealthy black businessmen, had opened nearly 40 courses within inner city and rural communities. The group had pledged to open a total of 130 such courses by the end of 2002 (Hyman 2000). Brentwood, a course on the near north side of Jacksonville, Florida is a good example. At one time, Brentwood was home to PGA tour events and was completely segregated, but it had not been in use for nearly 20 years after it had been engulfed by a lower income, culturally mixed, neighborhood (Thurrow 1998). Brentwood emerged as First Tee’s inaugural project and is now used to attract inner-city youth to the game of golf.

Another example is Franklin Park Golf Club, which is located in the middle of one of Boston’s most impoverished and crime-ridden communities. It is the second oldest public course in the country. After

years of under-use and decay, its use is growing and its patronage is now 60% black. This club is portrayed as a large oasis of peace and racial harmony within a generally hostile environment (Stossel 1998). Another interesting project in Atlanta is being championed by Thomas Cousins, the powerful agent of Atlanta real estate. He has orchestrated investments of \$125 million on a 400 acre development known as East Lake (Sellers 2001). Cousins started the project with acquisition of a dilapidated club where Bobby Jones learned to play in the highly segregated 1920s. The surrounding neighborhood, once known as Little Vietnam because it resembled a war zone, has been completely redone with 542 mixed income residences. This was completed as a joint public-private venture. At least half of the residents receive public housing subsidies.

As indicated earlier, little is known about African Americans' spatial accessibility to golf. There is certainly some anecdotal evidence in the record (Fig. 1). According to Kennedy (2000), Walter 'Clink' Stewart, a well-known African American golfer of the early 1900s, as a child had "walked seven miles to get to the course to caddy for 25 cents per side" (p.3). Entrance to the golf game as a caddy was a common path prior to the wide-spread use of motorized golf carts. Teddy Rhodes, another early black golf pioneer, spent much of his time after school and on weekends during the 1920s caddying and "traveling by streetcar from the near north-side of Nashville way out to Belle Meade Country Club" (p.45). Pete Brown, who would become one of the earliest black PGA members, faced a 3 hour drive down Highway 55 to New Orleans from his home in Jackson, Mississippi to find a golf course that

permitted blacks to play on Mondays and Fridays during the 1940s (Kennedy 2000, 146). James "Junior" Walker left his home in Rocky Mount, North Carolina in the 1950s because he "had to play golf" and "they had no public courses for me" (p. 163). Thus, the trip to the golf course has always been a long one for most black golfers. The intent of the following sections of this paper is to document the contemporary status of blacks' spatial accessibility to golf in a more systematic way.

#### THE ANALYTIC APPROACH

North Carolina is chosen as the study area to investigate differences in spatial accessibility to golf. North Carolina's population is diverse, with 22% of the state's approximately 8 million residents being African American. There is significant spatial variation in the distribution of ethnic composition. North Carolina is still a relatively rural state. Approximately one-third of North Carolina's residents live in non-metropolitan settings. However, North Carolina is urbanizing quite rapidly. Historically, North Carolina has been an important state in the history of minority access to golf. The "Greensboro Six" were African-American men arrested for trespassing on a public course in 1948. Charlie Sifford, born in North Carolina, became the first African-American to gain PGA membership in 1961. Since then, more black PGA members have come from North Carolina than any other state (6 out of 38). The National Black Golf Hall of Fame is located at Winston Lake Golf Course in Winston-Salem, North Carolina. North Carolina currently ranks ninth in the U.S. in the total number of golf courses with 581. The Sand Hills area, centered on



*Figure 1. African-American children access golf in two very different ways in North Carolina during the early 1900s. In the top photo, young girls have fashioned their own clubs and a ball and play in the rough fields near home (Source: Library of Congress, LC-D4-18479). In contrast, the African-American boys in the bottom photo are headed on the trolley to Pinehurst where they hope to caddy or shag golf balls (Source: The Tufts Archives, Pinehurst, NC). Photographs reprinted with permission.*



Moore County and home to Pinehurst, is regarded as one of America's finest (and most elite) golf destinations.

Two spatial distributions are of immediate importance to the analysis of accessibility, the distribution of people and the distribution of golf. Each of these distributions is revealed quantitatively through the use of maps, histograms, statistical measures of spatial concentration, and tables. Then, these two distributions will be statistically compared through a rigorous quantitative assessment. This will greatly assist in determining the existence and the extent of the expected spatial mismatch. The methodological flow includes: (1) primary data acquisition from the U.S. Bureau of the Census (demographics) and the National Golf Foundation (location of individual golf courses); (2) quantitative assessment of the spatial distributions of people; disaggregated by race, and golf courses (holes); (3) measurement of accessibility of small residential areas (1555 census tracts) to golf courses by way of accessibility index construction; (4) identification of relatively underserved (inaccessible) areas; and (5) direct comparison of accessibility to golf and the ethnic composition of residential tracts. Census tracts are adopted as the basic unit of observation for the cartographic and statistical analyses that are performed and reported later. The edge effect was removed by including selected courses in contiguous counties of surrounding states. This analysis represents a significant refinement in scale over all previous analyses of golf's spatial distribution, which has never been analyzed in the academic literature below the county level of data aggregation. This permits greater precision in the detection of differences in access to golf.

#### A GOLF ACCESSIBILITY INDEX

The accessibility of each North Carolina census tract to golf opportunities (within North Carolina and contiguous counties) is measured within a GIS environment. Levels of tract accessibility to golf are measured using the following accessibility index.

$$GA_i = \sum_j (H_j / T_{ij}^b) \quad (1)$$

where  $GA_i$  is the gross accessibility of the  $i^{\text{th}}$  census tract to NC golf,  $H_j$  is the number of golf holes located at golf destination  $j$ ,  $\sum_j$  is the summation of individual accessibility terms,  $T_{ij}$  is the separation between census tract  $i$  and golf destination  $j$ , and  $b$  is the "distance exponent."

Please note that GA refers to "gross accessibility" and an index value will be calculated for each census tract, ( $i$ ). Like any spatial index, these values can be mapped and statistically analyzed in a variety of ways. Given the algebra of this index, larger numeric values of GA indicate census tracts' greater accessibility to golf. Note that only golf destinations,  $j$ , that are assumed to be contained within the choice sets (Hanson 1995; Kwan 1999) of census tract ( $i$ ) residents, are included for use in Equation 1. The level of separation between a census tract origin ( $i$ ) and golfing destination ( $j$ ) is measured as an estimate of the travel time needed to drive from the center of ( $i$ ) to destination ( $j$ ). The current research effort does not directly address the important differences in accessibility that are attributable to being auto-less. Since blacks are disproportionately auto-less, any result achieved in the current study will necessarily understate

African Americans' relative inaccessibility to golf.

Travel times (T) are estimated based on travel over two types of network links, those within urban and rural settings. Average velocities on links contained within an urban setting, i.e., urban census tracts, are equated to 35 miles per hour. Average velocities on links contained within a rural setting, i.e., rural census tracts, are equated to 55 miles per hour. The approach adopted here is not capable of distinguishing between significant travel time differences that can occur between peak (capacitated) and non-peak periods. It is assumed that most golfers avoid trip making during peak periods. The path taken between any origin tract (i) and any destination (j) is assumed to be the shortest time path between the two. Shortest time paths are determined within the GIS environment. The "distance exponent" (b) measures the importance of separation, i.e., the size of the negative effect that increasing separation has upon access to golfing opportunity. In the current research this measure of the "friction of distance" is standardized with a value of 2.0, which is common in these types of applications involving the creation of a relative accessibility index (Haynes and Fotheringham 1984).

The golf destinations contained within the probable choice set of residents of any census tract (i) must be determined before Equation 1 can be executed. This is accomplished as the aggregation of courses (and the respective number of holes) within a specified buffer around the centroid of each residential census tract. A variety of buffer radii were analyzed, extending from 5 to 30 miles and incremented in 5 mile

units. This permitted sensitivity analysis of candidate choice set formations for urban and rural census tracts. A buffer of 15 miles (lower velocity travel) is established for urban tracts and a buffer of 30 miles (higher velocity travel) is adopted for the rural tracts (see Fig. 2 for an example of index calculation). The buffer is extended within rural areas simply because average velocity is higher there.

#### DETERMINATION OF EXPECTED GOLF SERVICE LEVELS

All else being equal, we would expect a spatial development of golf that objectively and rationally responds to the size of markets. Good markets should be well served with the opportunity to golf. Thus, there should be a strong relationship between any reasonable measure of the locale's market size and the locale's market accessibility to golf. Any outcome other than this would serve to suggest that some areas are relatively under-served while others are over-served. Such a noncompliance with the market force could suggest irrationality or some form of discrimination. Ordinary least squares linear regression is used to create an expected measure of golf accessibility based on a tract's market potential. The following equation is estimated

$$GA_i = a + b (MP_i) + e_i \quad (2)$$

where  $GA_i$  is the gross accessibility of tract (i) to golf (see Equation 1),  $MP_i$  is the market potential of tract (i) (aggregate household income),  $e_i$  is the residual associated with tract (i), and  $a, b$  are estimated parameters.

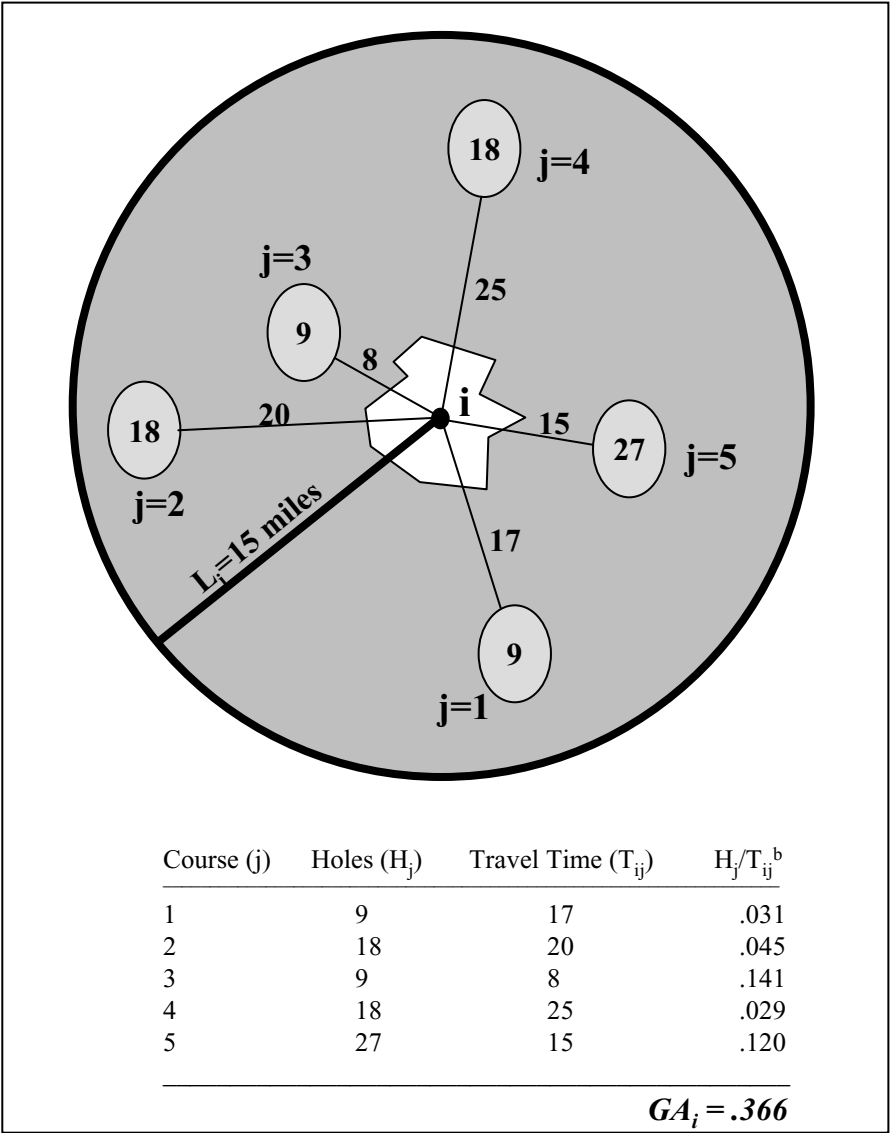


Figure 2. Hypothetical example implementing Equation 1, the measure of a census tract's (i) gross accessibility to golf courses (j = 1,2,3,4,5).

It is the residual term in Equation 2, ( $e_i$ ) that signals the degree to which census tracts are under-served or over-served. A positive residual indicates greater accessibility than would be expected given the tract's market potential, while a negative residual indicates that the tract is relatively inaccessible given its market potential. Given the theme of this investigation, relatively underserved tracts are expected to be disproportionately African-American in ethnic composition.

#### THE RELATIONSHIP BETWEEN ACCESSIBILITY AND RACE

Once the residuals from Equation 2 are calculated, examination of accessibility takes on two directions. First is the measure from Equation 1,  $GA_i$ . This measure is interpreted as a tract's *gross accessibility* to golf. The second measure comes from the residuals of Equation 2,  $e_i$ . Please recall that these residuals measure the expected level of accessibility after controlling for the size of the tract's market, i.e., aggregate income. For purposes of enhanced interpretability, this measure can be labeled as a tract's *net accessibility* to golf. These residuals are labeled as  $NA_i$  for the remainder of this paper.

Gross accessibility to golf (GA) and net accessibility to golf (NA) are mapped and described with graphical and tabular products. Once this descriptive task is accomplished, the accessibility measures are then related to ethnic composition at the tract level of census geography. Correlation analysis permits investigation of the relationship between the two types of tract characteristics, i.e., net golf accessibility on the one hand and ethnicity on the other. A few interesting cases of inaccessi-

bility, in both urban and rural settings, are scrutinized as case studies.

#### THE DISTRIBUTION OF AFRICAN- AMERICAN POPULATION

African Americans accounted for nearly 22% (1,737,545 of 8,049,313) of North Carolina's total population in 2000. Figure 3 illustrates the relatively clustered distribution of North Carolina's black population. The white population is much more uniformly distributed than North Carolina's black population. Blacks account for the majority of the population in just 14% of all tracts. The frequency distribution of the percentage of African Americans is highly positively skewed across the 1555 tracts while a much more normally distributed situation for whites is evidenced. The implication of these comparative distributions is that the African-American population is much more highly concentrated in space. The Index of Concentration, which ranges from a minimum value of 0 (uniformly distributed) to a maximum value of 100 (perfectly concentrated), is 45.8 for the spatial distribution of whites and is 63.6 for the spatial distribution of African Americans. Thus, African Americans are indeed more spatially concentrated than is the white population.

The spatial distribution of people also varies for ethnic groups among North Carolina's four physiographic regions, i.e., Mountain, Piedmont, Coastal Plain, and Tidewater (see Table 1 and Fig. 3). The Mountain region has the smallest share of black population of any of North Carolina's regions and those African Americans who live in the Mountain region are relatively urbanized. Within the Piedmont region, African-American residents account for

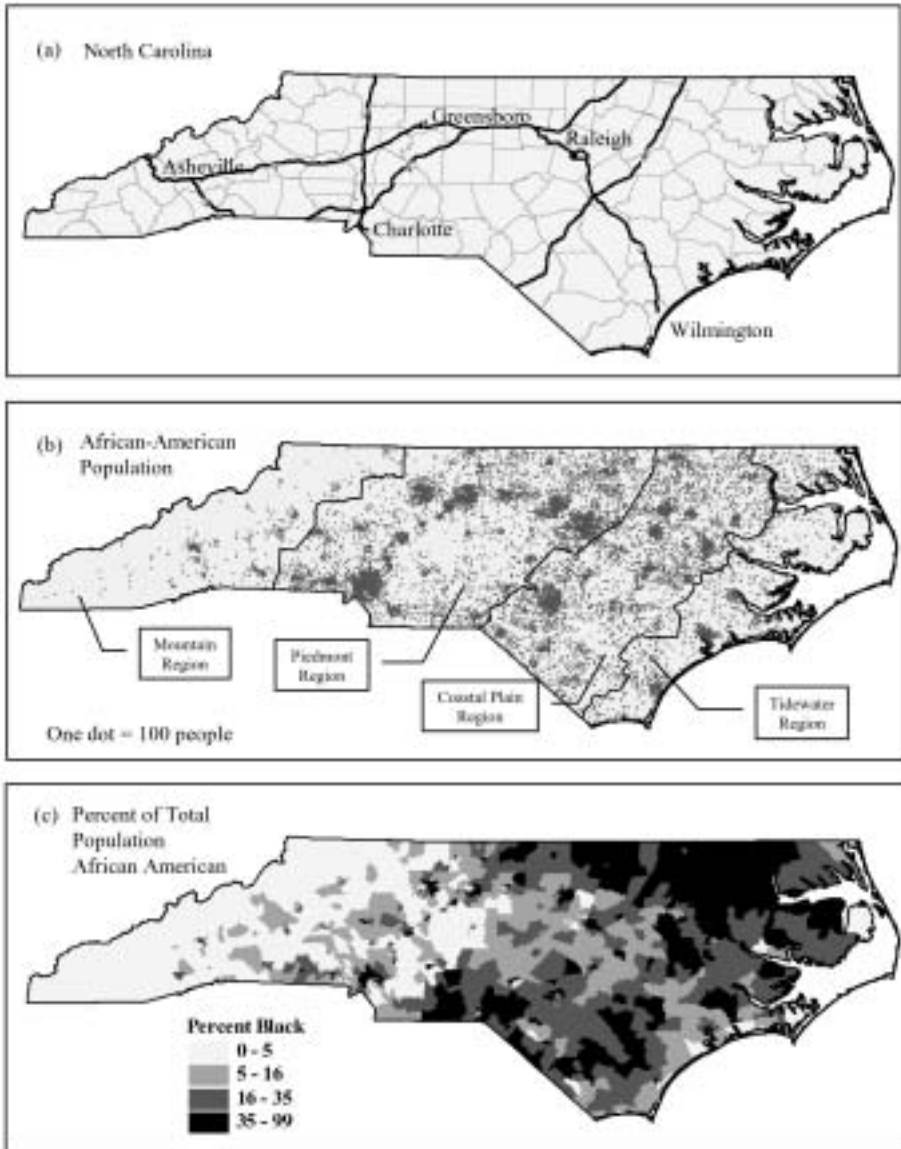


Figure 3. (a) Base map of North Carolina showing major highways and selected cities, (b) Dot density map of African-American population within North Carolina illustrated at census tract level by major regions, (c) Percentage of total population that is African-American mapped at the census tract level.

(Source: Drawn by authors from Census 2000 data.)

approximately 56% of the total African-American population of North Carolina and 22% of the Piedmont's total population. The African-American population in the Piedmont region is highly urbanized. This is, by far, the most pronounced level of urbanization for blacks in any of the regions. The Coastal Plain region is the second largest in African-American population with 549,451. The African-American population is far less urbanized in this region than is the case in the Piedmont. The most generally uninhabited region, the Tidewater, contains about 10% of the entire African-American population. The African-American population located here is largely rural. African Americans are in the minority in each of the four physiographic regions. High densities appear around metropolitan areas in all cases (Fig. 3). Even in more rural parts of the state, African Americans tend to be located increasingly within towns and cities (Gade 2002).

#### THE SPATIAL DEVELOPMENT OF GOLF IN NORTH CAROLINA

The oldest golf course in North Carolina is the Grove Park Inn and Country Club, located west of Asheville, North Carolina. This course opened in 1894, and remains in operation. Development of the Pinehurst Resort followed soon after. James Tufts, a very rich Bostonian, purchased 5,000 acres in the sand hills of Moore County in 1895. Golf was quickly added to the original resort function by 1898. A summary of golf course production by decade is presented in Figure 4. Since 1900, the growth of golf has been marked by two decades of very rapid development. The first boom occurred dur-

ing the highly segregated 1920s. By 1930, nearly 80% of all golf facilities within North Carolina were private—open to members only and very exclusive and expensive. These early developments suggest the location of essentially “country clubs” in rural areas as a spatial strategy to exclude the urban minority, and blue-collar populations while reducing land costs.

The second boom in golf course construction corresponds to 1960s television coverage which permitted Hogan, Snead, Nicklaus, Player, and Palmer to become household names. Middle-class interest in golf was greatly stimulated by increased affluence and leisure time, and by television's introduction of the game to a broader untapped market. In turn, the industry began to develop many more public courses to meet the growing demand for golf. As a result of this “massification,” golf courses were developed increasingly in urban and suburban areas. These new courses served major population centers such as Raleigh, Winston-Salem, Greensboro, Charlotte, Asheville, Fayetteville, and Wilmington. The 1980s and 1990s marked a major paradigm shift for golf. Since 1980, approximately 70% of all courses developed have been public courses. In contrast, golf course communities also have become a new locational market segment for avid golfers and homebuyers. These developments are concentrated in the areas surrounding such places as Pinehurst, Charlotte, Wilmington, Greenville, Raleigh, and Cary. Since 1990, over 125 courses, accounting for almost 2200 holes, have been built in North Carolina. If the 1990s are any indication of future golf course development in North Carolina, it would seem, all things being equal, that accessibility would increase

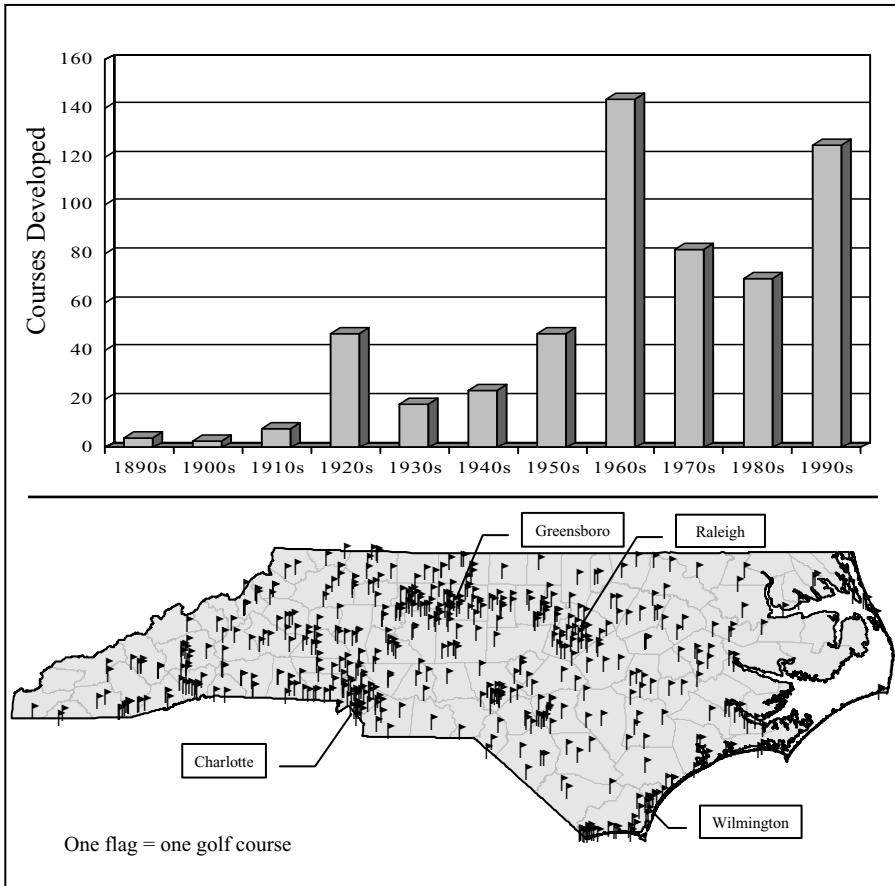


Figure 4. Spatial and temporal distributions of golf course development in North Carolina. (Source: Drawn by authors from National Golf Foundation data.)

in general terms. This is especially true if more public courses are developed. However, almost 45% of all golf course construction in North Carolina since 1993 has been related to real estate development (National Golf Foundation 2001).

The 581 golf courses in North Carolina contain 9810 holes (Fig. 4). North Carolina's census tracts vary widely in the number of golf opportunities, i.e., courses and holes available. For example, only 415 of

the 1555 residential census tracts contain at least one golf course and most of these (343) contain exactly one course. Of the tracts with at least one golf course, the number of holes varies from a minimum of 9 to a maximum of 333. In contrast, there are 1140 tracts that contain no courses, and hence, no holes. The golf industry is quite spatially concentrated.

The distribution of golf course locations varies within each of the four physio-

*Table 1. Basic Demographic and Golf Descriptors of Physiographic Regions*  
(Source: calculated by authors from 2000 Census and National Golf Foundation data).

Region	Total Population (% of state)	Black Population (% of area)	Black Metro Population (% of blacks)	Golf Courses (% state)	Metro Golf Courses (% courses)
North Carolina	8,049,313	1,737,545	1,140,606	581	330
		(21.6)	(65.6)		(56.8)
Mountain	1,070,643	49,342	25,794	117	22
	(13.3)	(4.6)	(52.3)	(20.1)	(19.1)
Piedmont	4,589,455	976,058	779,110	293	208
	(57.0)	(21.3)	(79.8)	(50.4)	(71.0)
Coastal Plain	1,595,199	549,451	268,875	91	44
	(19.8)	(34.4)	(48.9)	(15.7)	(48.4)
Tidewater	794,026	162,694	66,827	80	50
	(9.9)	(20.5)	(41.1)	(13.8)	(62.7)

graphic regions (see Tables 1 and 2). Within the Piedmont, approximately 65% of North Carolina's courses are found in metropolitan tracts. In contrast, the Mountain region contains the state's largest concentration of holes in non-metropolitan tracts, containing about 80% of the region's total. The Coastal Plain and Mountain regions both contain more non-metropolitan golf holes than metropolitan golf holes. In contrast, the heavily rural Tidewater region contains more holes in metropolitan tracts than non-metropolitan tracts. Within the Tidewater, the Wilmington MSA has approximately 828 holes alone. The Index of Concentration, which ranges from 0 (perfectly dispersed) to 100 (perfectly concentrated), is calculated to be 76.2 for the spatial distribution of golf holes in North Carolina. Please recall that the Index of Concentration was calculated to be only 46.8 for the distribution of white people and 63.6 for the distribution of African Americans. Thus, of the three spatial distributions,

golf is the most spatially concentrated followed by African Americans. The potential for a spatial mismatch is enhanced.

THE MISMATCH BETWEEN GOLF  
AND AFRICAN AMERICANS

The highly urbanized Piedmont contains about half (51.6%) of all golf holes found in North Carolina. Approximately 56% of the state's entire black population resides in the census tracts of the Piedmont. Common sense would suggest, all things being equal, that the African-American population residing in the metropolitan region of the Piedmont would be reasonably accessible to golf. In contrast, there is a notable regional mismatch when the Mountain region is compared to the Coastal Plain. The Mountain region is home to just 3% of North Carolina's blacks but is home to almost 22% of its golf courses and holes. In contrast, the Coastal Plain is home to almost 32% of the state's African-American population but only



*Table 2. Golf Accessibility Indices for Census Tracts of North Carolina*  
 (Source: calculated by authors from 2000 Census and National Golf Foundation data).

Area (n = 1555)	Number of Holes:			Gross Accessibility:			Net Accessibility:		
	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev
North Carolina	6.30	0.00	15.98	49.39	41.14	38.88	0.00	-7.91	38.83
Mountain	8.89	0.00	15.81	62.23	52.29	42.17	12.20	5.48	42.21
Piedmont	5.63	0.00	13.88	48.52	39.53	35.78	-1.91	-9.56	37.69
Coastal Plain	4.95	0.00	9.81	41.98	36.80	28.71	-5.71	-11.51	33.55
Tidewater	10.06	0.00	36.88	54.64	43.40	47.23	2.80	-5.91	38.83

13% of its supply of golf. Even at this basic level of regional analysis, a negative correlation is suggested (see Table 2). Gross accessibility (GA) values range greatly from a low of 0.0 to a maximum of 434.3 with a mean of just less than 50 (see Table 2). Mean gross accessibility values (from Equation 1) are highest for tracts in the Mountain region and lowest for tracts in the Coastal Plain. The variability in gross accessibility to golf is greatest in the Tidewater. Here, great differences in access to golf between the immediate coastal zone and inland areas are evident (Fig. 5a and Table 2).

Comparison of the location of North Carolina's golf industry to relative ethnic composition (percent black) illustrates a fairly strong mismatch. For instance, tracts in the highest quartile of percent black (above 35% of total population) have on average only 2.98 golf holes per tract while tracts in the lowest quartile of percent black (below 5% of total population) have on average 8.81 holes, nearly three times as many. Of the 778 tracts with  $GA_i$  levels equal to or greater than the median, only 14% (107 of 778) contain a majority African-American population compared to 81% (631 of 778) with a majority white

population. In the simplest of terms, and regardless of market size, gross accessibility to golf,  $GA_i$ , consistently decreases as percent black increases (Table 3). This inverse relationship indicates that as the spatial concentration of African-Americans in a given tract becomes larger, golf access decreases.

Focus is now placed on estimates of net golf accessibility ( $NA_i$ ) levels as defined earlier in the paper, i.e., Equation 2. Here, market size is controlled for in order to determine the nature of tracts that are disproportionately under-served or over-served (see Figure 5b and Table 3). Because this measure of net accessibility is derived as a set of least squares regression residuals, the mean is zero. Positive values imply tracts that are over-served and negative values indicate tracts that are under-served. Examination of Figure 5 suggests a much less organized spatial distribution of net accessibility when compared to gross accessibility. In the later case, the urban pull on golf course location, often suburban in nature, is clearly evidenced along with the coastal development mentioned earlier. The spatial nature of net accessibility is far less evident.

Examination of Tables 2 and 3 do indi-

Table 3. *Golf Accessibility by Ethnic Composition of Census Tracts in North Carolina*  
(Source: calculated by authors from 2000 census and National Golf Foundation data).

Percent African American	Mean Net Accessibility to Golf:				
	North Carolina	Mountain	Piedmont	Coastal Plain	Tidewater
First Quartile (0–5%)	2.61	5.39	1.95	3.12	11.51
Second Quartile (6–16%)	1.21	9.82	1.09	0.95	4.34
Third Quartile (17–35%)	–0.91	26.71	–1.33	–4.89	–0.15
Fourth Quartile (36–99%)	–2.91	–0.6	–2.68	–7.79	–2.11

cate that average net accessibility is highest (over-served tracts) in the Mountain and Tidewater regions. Net accessibility is least (underserved tracts) in the Coastal Plain region. However, there is significant variation of net accessibility within each of these regions. The distribution of net accessibility values is very highly positively skewed suggesting that a few places do enjoy extremely high levels of accessibility, given their market potential. The vast majority of tracts have much poorer access than one should expect given their market potential, i.e., there are many more negative residuals than there are positive residuals. When the net access values are organized by ethnic composition, a substantial correlation is revealed (Table 3). The mean net accessibility to golf is least for the highest black quartile (above 35% of population) while it is greatest for the first black quartile (under 5%). The correlation between net accessibility and percent black generally also holds true within each region, although the correlation is apparently strongest within the Coastal Plain and weakest in the Mountain region.

This inverse relationship indicates that as the spatial concentration of African-Americans in a given tract becomes larger, then net access to golf decreases. In fact, both  $GA_i$  and  $NA_i$  levels decrease as the relative density of black population increases. The simple correlation between percent black and gross accessibility is  $-.36$  while the correlation between percent black and net accessibility is  $-.56$  (both correlations are significant at the .01 level of significance). Regardless of regional location within North Carolina, comparison of gross and net golf accessibility with ethnicity illustrates a substantial spatial mismatch between golf and African-Americans.

Thus far, the analysis undertaken in this paper has identified a direct relationship between decreasing levels of accessibility to golf (both gross and net access) and increasing concentrations of black populations. Figure 6 indicates the locations of areas with black populations that make up at least a third (33%) of their tracts' total populations and have a net access level that is less than negative 25.0.

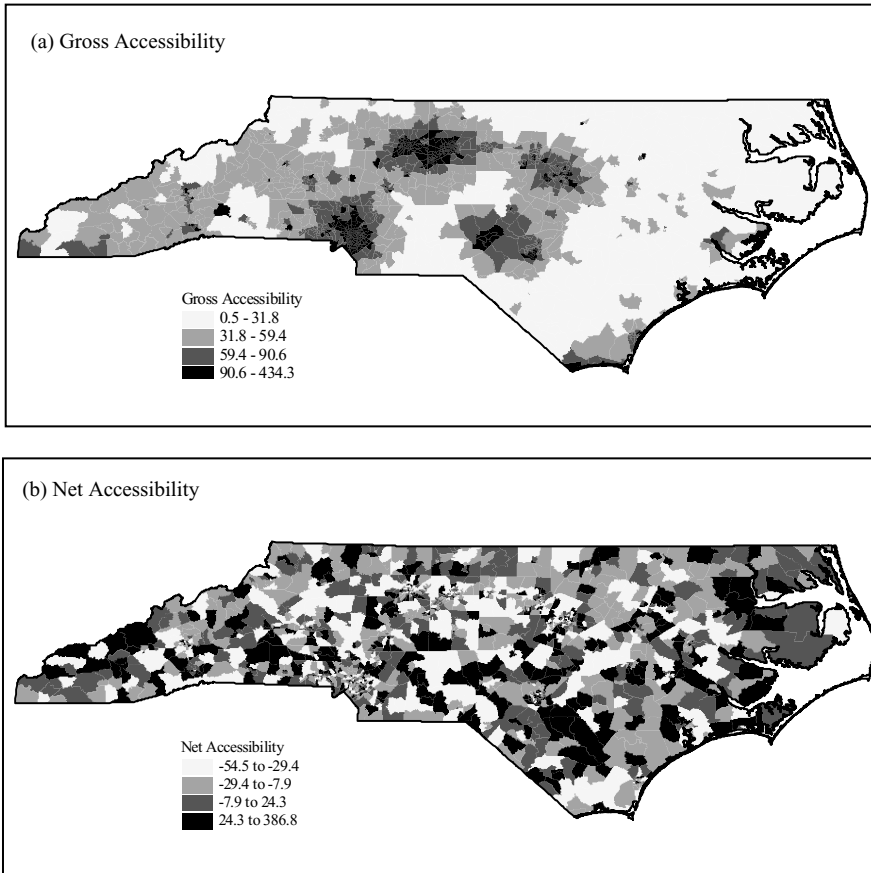


Figure 5. Spatial distributions of census tracts' accessibility to golf in North Carolina. Map (a) portrays gross accessibility to golf as measured by Equation 1. Map (b) portrays net accessibility to golf after controlling for the size of the local market (aggregate income) as measured by Equation 2. Lighter shaded tracts are poorly served with opportunities to golf. (Source: Drawn by authors from Census 2000 and National Golf Foundation data.)

Hence, these are tracts which are highly black and highly under-served (even after controlling for market size). There are 139 tracts that comprise this category of ethnicity and inaccessibility. Note that this spatial distribution of ethnic inaccessibility to golf is concentrated within the Coastal Plain and Piedmont regions. It should also be noted that within the Pied-

mont region, ethnic inaccessibility to golf is more frequently found within the central city tracts of Charlotte, Greensboro, Raleigh, and Winston-Salem. A much different situation characterizes the Coastal Plain. Here, residents of highly black and rural tracts find golf to be a distant urban activity, well outside the scope of daily life. In the final portion of this empirical re-

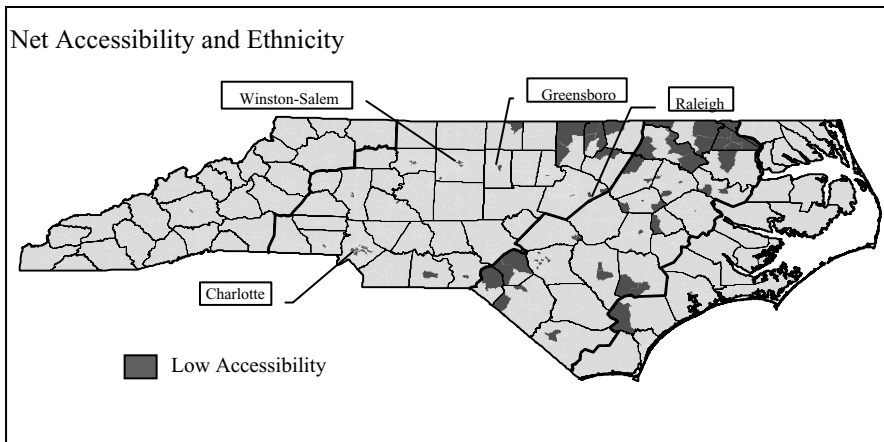


Figure 6. Locations of census tracts ( $n=139$ ) which have a high percentage of African-American population ( $>33$  percent) and a very low level of net accessibility ( $<-25.0$ ) to golf. (Source: Drawn by authors from Census 2000 and National Golf Foundation data.)

port, a closer examination of a few geographic settings which have provided extreme or distinctive outcomes is provided.

#### COMPARATIVE GOLF DEVELOPMENT

A brief examination of several North Carolina areas will serve the purpose of illuminating a variety of spatial settings that have resulted in inaccessibility of African Americans to golf (see Fig. 7 and Table 4). Selected areas in North Carolina include: (1) a rapidly growing metropolitan setting (Mecklenburg County–Charlotte); (2) a traditional and historically exclusive golf resort setting (Moore County–Pinehurst); (3) a rapidly developing coastal zone setting (Brunswick County—an extension of Myrtle Beach); and (4) a declining rural setting (Bertie County—in the northern Coastal Plain). Figure 7 illustrates the distributions of African Americans and golf courses within these se-

lected areas. Table 4 contains essential demographic information about these four counties, which sheds further light on the nature of golf's continued spatial exclusiveness.

In each case, note the lack of correspondence between the location of golf courses and the spatial distribution of African Americans. As witnessed in the previous section, this mismatch does not occur simply because the avoided areas possess a poor market. Even after controlling for market size, there is a relatively strong and negative correlation between percent black and accessibility to golf. The sand hills of Moore County (Fig. 7a), the Pinehurst area, have been largely developed for an external market. The relative share of African Americans within the area is substantially below North Carolina's 22%. The Pinehurst area also is home to an older population with a disproportionate share of retirees who reside year-around. In contrast, the areas surrounding Pine-

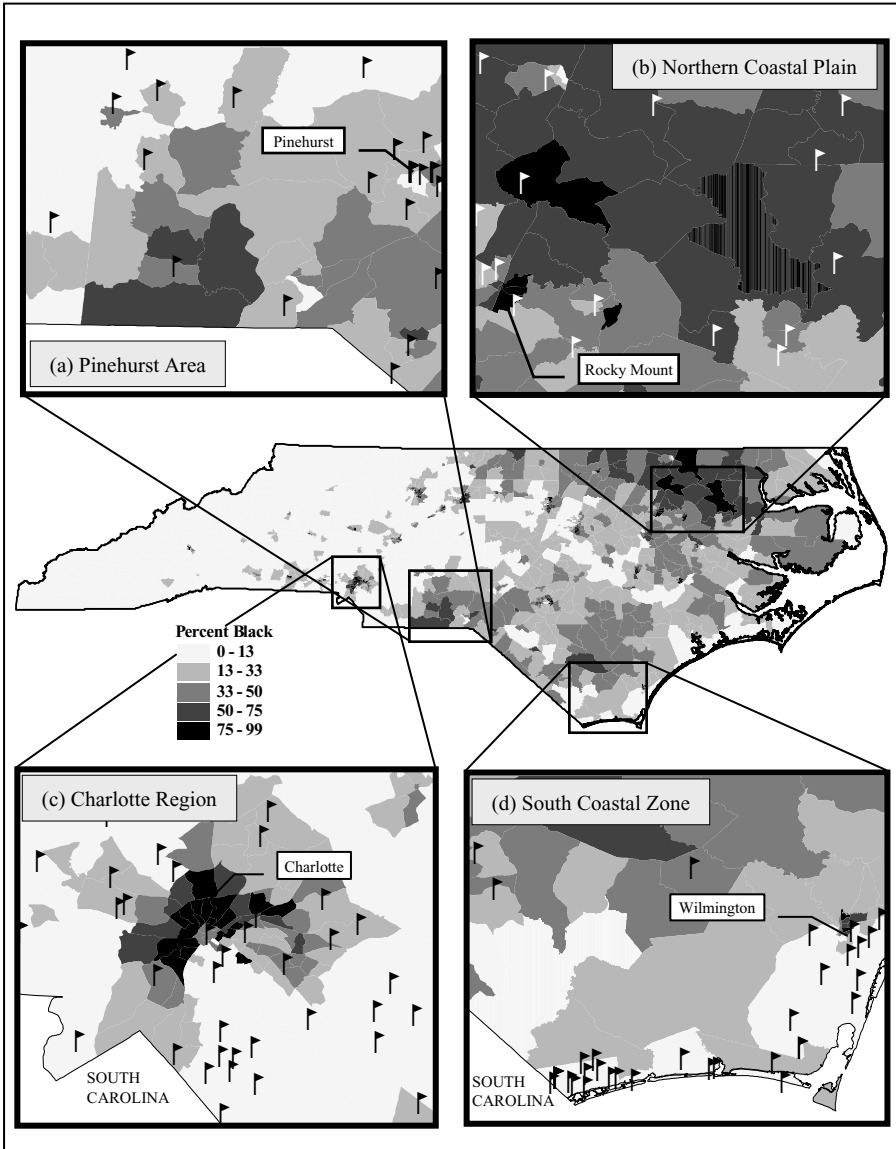


Figure 7. A variety of development types in which high concentrations of African-Americans have disproportionately little access to golf: (a) rural golf resort, (b) agricultural rural, (c) metropolitan, and (d) coastal enclave. (Source: Drawn by authors from Census 2000 and National Golf Foundation data.)

Table 4. Demographic Characteristics of Selected Areas (Source: Census 2000 data).

Characteristic	Counties:				
	North Carolina	Brunswick	Moore	Mecklenburg	Bertie
Population	8,049,313	73,143	74,769	695,454	19,773
Percent female	51.0	50.8	51.8	50.9	53.3
Median age	35.3	42.2	41.8	33.1	38.6
Percent black	21.6	14.4	15.5	27.9	62.3
Income and Poverty					
Median HH income	39,184	35,888	41,240	50,579	25,177
Percent of income from retirement	16.4	27.4	26.6	11.0	18.7
Percent of individuals below poverty	12.3	12.6	11.4	9.2	23.5
Employment					
Percent in labor force	65.7	57.7	57.5	72.4	53.4
Percent Unemployed	3.4	2.6	3.1	3.7	3.8
Mean travel time to work	24.0	23.6	21.8	26.0	29.5
Percent HH no car	7.5	5.7	5.5	6.9	14.6
Housing					
Percent owner occupied	69.4	83.2	78.7	62.3	74.9
Percent mobile homes	16.4	35.9	18.0	2.1	31.7
Percent units built since 1980	46.7	68.2	50.9	53.2	34.0
Percent seasonal	3.8	30.2	3.6	0.5	3.9

hurst possess more blacks and less golf. The northern Coastal Plain (Fig. 7b), focused on Bertie County, has one of the highest densities of African Americans within North Carolina. About 2 out of 3 residents are black. Amidst the great wealth of the local elite there is mixed a considerable degree of poverty and related issues. In addition to the area's unexpectedly severe avoidance by the golf industry, other opportunities also are missing. For example, the average commute (to work) is nearly 30 minutes, roughly 20% higher than the North Carolina norm. This is certainly one of the reasons why the participation rate in the labor force is so low for the area. Moreover,

this area and its residents are disproportionately inaccessible, after controlling for market size, to golf. The conditions of inaccessibility in this area are only exacerbated by a very high level of auto-less households.

In contrast to the rural situation just described, the Charlotte metropolitan region (Fig. 7c) is a much more typical scene for golf's selective accessibility in contemporary metropolitan America. It mirrors the spatial mismatch in employment that plagues most American cities. Here, the central portion of the region is disproportionately black while the lion's share of golf course development, including public courses, is suburban in location. The dif-

ficulty of navigating the metropolitan setting is also illustrated by a commute time of 26 minutes and a disproportionate share of auto-less households within the central metropolitan area. With a relatively small share of less expensive manufactured housing present within the metropolitan setting (usually zoned out of urban and suburban settings), the opportunity to establish low income housing in suburban, opportunity-rich areas is limited at best. The final case of inaccessibility is located within North Carolina's coastal zone (Fig. 7d), where a dramatic transformation has taken place, especially within the last 20 years. Vacation homes, tourism development, and golf courses dominate these landscapes. Brunswick County, just southeast of Wilmington, on the border with South Carolina and just northeast of Myrtle Beach, is a good example. The social mix is extraordinary. This is the oldest (age of residents) of the areas under examination, with the highest concentration of retirees living frequently in seasonal housing often of a manufactured variety. The county is disproportionately white and that percentage increases toward the coast. The coastal tract that includes Sunset Beach and Ocean Isle contains 333 golf holes, the equivalent of 18.5 18-hole courses. More courses are under construction. As of 2003, Brunswick County is home to 27 courses with 504 golf holes. The majority of these are now associated with residential golf communities like Magnolia Greens Golf Plantation or Sea Trail Plantation. The plantation imagery is at least ironic if not insensitive. Houses in this coastal zone area are typically new and exclusively expensive, ranging above \$400,000. Labor, much of it African-American, flows from the inland

area to serve these coastal resident golfers and tourists. The typical laborer certainly cannot afford to live there. As witnessed from consideration of these very different geographic settings, African Americans' inaccessibility to golf arises in nearly any conceivable scenario and must be regarded as quite common across the landscape.

#### SUMMARY AND CONCLUSIONS

Despite the quite mythical image that is painted by Tiger Woods' success in golf and his frequency in golf sponsors' advertising, the mass of African Americans remains relatively inaccessible to the game of golf. Although most of the intentional and formal social constraints on membership and participation have been removed, informal constraints and relative cost still inhibit blacks' participation. The important point associated with the empirical work reported here is documentation that spatial inaccessibility remains and will continue even if social constraints and relative costs are removed or reduced. In sum, there exists a substantial spatial mismatch between the supply of golf and the African-American population, at least in North Carolina. There is no compelling reason to suggest that this feature of inequality is absent in any other part of the South and most assuredly exists, in its metropolitan format, in other parts of the country. It echoes the spatial mismatch between African Americans and job opportunities that has been illustrated elsewhere.

The golf industry, like most contemporary American industries, is highly organized, with firms that have grown through time as national chains, which own multi-

ple units (upwards of 200 to 300 courses), and that approach the location of a new franchise in a very formal way, like most chains would (see Buckner 1998; Salvaneschi 1996). In their golf course location analyses, expected costs of construction, operating costs, and revenues all play a roll in determining a good location. One of the empirical outcomes illustrated in this research points to a possible discriminatory practice in the historical location of golf courses. Assuming no systematic spatial variation in operating costs and controlling for the effect of expected revenue generation (by subtracting out the effect of aggregate income, a surrogate for market size), a significant correlation between the provision of golf, i.e., the location of golf courses, and the percent of resident population that is African-American has been isolated.

Any solution to this problem of inequality, like those other examples studied by geographers, would be achieved only with great difficulty. If, in fact, the golf industry is interested in extending its market into under-served market segments, like the African-American segment (National Golf Foundation 1999), then it probably will not suffice to elevate Tiger Woods' image so that the identity of the typical American golfer is not simply white and male. In fact, it will take a concerted effort of locational reform at the industry level. This will involve the targeting of previously under-served areas, areas that are expected to meet revenue requirements but have been slighted in the past because of existing or forecasted ethnic composition. In other cases, the industry might find it more efficient to assist with the mobility of auto-less African American residents. Indi-

vidual courses interested in extending to this market should consider the high incidence of auto-less households and could consider provision of van-pools to achieve better access, perhaps associated with off-peak lower pricing for greens fees. Mixed income housing developments, either in golf communities or in suburban settings, provide a politically sensitive longer-term approach that only has been attempted in a few pilot projects. Finally, the black golfing community must consider its own role in extending opportunity to this under-served segment. Of the roughly 16,000 golf courses located in the United States in 1999, only 4 were owned by African Americans (McDaniel 2000).

The historic elitism that has been associated with the game of golf has had great difficulty eroding. The golf course can be a wonderful landscape of intense social and environmental interaction. These courses have been largely preserved as spectacular islands of privilege. They were private country clubs, public playgrounds that were far from public, and now they often are the central park of gated communities. There has been a slow transition at work here. The desire on the part of the golf industry to 'massify' the sport on public courses has forced an elevation of the price of entering the latest genre of very private spaces, i.e., the price of a 3000 square foot home on a lot next to a course along with annual fees. The example of African Americans in golf illuminates the disaggregation of socio-spatial processes in a revealing way. The tensions become quite vivid in the case of golf. Massification, elitism, individualism, privileged class, racism, gender, profit, environmentalism, and social injustice all play out in a



carefully crafted garden that signifies humanity's power over nature and its ability and willingness to exclude parts of itself from the fruits of that power.

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