resources may have been a result, a pattern that is also suggested at Irene at this time.

Conclusions: Organizational Cycling and the Abandonment of the Centers and Regions

The lessons about the causes of political change learned in the Savannah River basin should have applicability elsewhere in the Southeast, where similar events are observed during the Mississippian era. Climate, resource structure, and regional political geography all appear to have been important in shaping the history of the Savannah River chiefdoms. Although both environment and politics were important, neither environmental determinism nor historical forces alone is sufficient to fully explain, and help us understand, what happened locally. Monocausal explanations of complex culture change, in this view, although satisfying in their simplicity, are incomplete and hence suspect for the same reason.

So why was much of the Savannah River basin depopulated after ca. A.D. 1450? This abandonment, I argue, was caused by combination of factors, of which the size, location, and nature of the resources in the Savannah River basin compared to nearby drainages, as well as changes in the regional political landscape and variation in growing season rainfall, were among the most important. The rise of powerful Mississippian societies in the Oconee and Santee-Wateree drainages to the west and east of the Savannah, respectively, may have been the single most critical factor. During the period of initial Spanish contact in the mid-sixteenth century, the provinces of Ocute and Cofitachequi were present in these areas, and it is suggested that their strong rivalry and bitter enmity had an effect on the polities along the Savannah River, who were literally caught between them. Fortifications and other evidence for warfare appear at several sites along the Savannah in the century preceding the depopulation of the central and lower basin, suggesting political relationships between the region's polities may not have been the best.

At the same time that the political landscape was becoming increasingly hostile, food reserves throughout the region may have been severely stressed. These developments could well have been related and unquestionably would have put considerable pressure

on the agriculturally based chiefdoms in the Savannah River basin and beyond. Although Mississippian populations could have compensated for localized crop shortfalls by using wild plant and animal resources, increased use of the buffer zones during an era of conflict and competition would have likely been progressively more dangerous. Given an inferred lower overall population base (that is, when the size and resource structure of the Savannah is compared with that of nearby major drainages) and a position between major polities, over time the numerous small skirmishes resulting from use of the buffers would have been a war of attrition the Savannah chiefdoms could not hope to win. By the middle of the fifteenth century the situation was such that large areas within the basin were abandoned and remained unoccupied for almost two centuries. That populations did not return to the lower basin once rainfall conditions improved, something that happened at the end of the fifteenth century, highlights the importance of historical and political forces in shaping and then in maintaining this abandonment. Neither favorable climate nor vacant prime agricultural land could induce populations to return when the political landscape was such as to make this action untenable.

Acknowledgments

I wish to thank John Scarry for inviting me to participate in this volume, and for his patience in waiting for the final version of this chapter. Many of the arguments presented here are discussed in greatly expanded form in *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast*, a revised version of my doctoral dissertation that was published by the University of Alabama Press in 1994. To my dissertation committee I owe a great debt of thanks for their extensive advice and assistance (Richard I. Ford, chair; Henry T. Wright; John D. Speth; and William Farrand). Also important were the many friends and colleagues in the southeastern archaeological community, and far beyond, who helped shape the observations about the analysis of chiefdoms presented here and in chapter 10. To all of you, my thanks.

EIGHT

Chiefly Cycling and Large-Scale Abandonments as Viewed from the Savannah River Basin

David G. Anderson

The Mississippian societies of the Savannah River basin of Georgia and South Carolina provide a dramatic record of chiefly cycling—the emergence, expansion, and fragmentation of complex chiefdoms amid a regional landscape of simple chiefdoms—that can be explored in detail using the extensive and well-documented archaeological record available from this locality. The Savannah River basin was occupied almost continuously throughout prehistory, from the Paleoindian era through the Mississippian period. At the very end of this span, from ca. A.D. 1100, when the first chiefdoms appeared in the basin, to sometime after ca. A.D. 1600, when the last chiefdoms in the headwaters region collapsed under the repeated trauma of European contact, a number of simple and complex chiefdoms emerged and declined in this area. These events were duplicated in many other southeastern river valleys during the Mississippian era and, although typical of cycling behavior, by themselves would not stand as a particularly remarkable illustration of the process (see chapter 10 in this volume). Sometime around A.D. 1450, however, much of the central and lower part of the Savannah River basin, including almost 300 km of the main river channel and all of its major tributaries, was abruptly abandoned and remained depopulated

for almost two centuries. Although by no means a unique event—something very similar seems to have occurred slightly earlier in the Central Mississippi Valley and about this same time in the Middle Tennessee River Valley (Anderson 1991; Welch 1991; S. Williams 1990)—how and why such large-scale abandonments could have taken place warrants explanation, and ties in to the question of how chiefdoms in general emerge and decline.

The Mississippian Chiefdoms of the Savannah River Basin

More than 100 major archaeological survey and excavation projects had been conducted in the Savannah River basin in the past century, offering a database useful for the study of chiefdom organizational changes that is rivaled in only a few other parts of the world. Almost 4,000 prehistoric sites have been recorded in the basin, and Mississippian components are known from more than 500 of them. Extensive excavation-based data exists for all but two of the fourteen known Mississippian mound centers, as well as for a number of village, hamlet, and special activity sites (table 8.1; fig. 8.1); archaeological investigations at each of these sites have been summarized at length elsewhere (Anderson 1990a, 250–464; 1994b, 157–234). Given the lengthy focus of southeastern archaeology toward the location and excavation of mounds, it is probable that most if not all of the major centers present in the basin have been found.

Dating of these assemblages is fairly precise, furthermore, with temporal resolution on the order of plus or minus fifty to seventy-five years possible, thanks to the existence of a number of highly sensitive ceramic temporal markers, including complicated stamped and incised design motifs and a range of rim and lip treatments. As a result, fine-grained Mississippian cultural sequences have been developed in three parts of the Savannah River basin, with absolute chronological controls provided by a large number of local radiocarbon determinations as well as through cross-dating with assemblages from elsewhere in the South Appalachian area (Anderson 1990a, 433–64; Anderson 1994b, 362–77; Hally 1986, 1990; Hally and Rudolph 1986, 21–26) (fig. 8.2).

This is not to say the Mississippian period archaeological record from the Savannah River basin is ideal or complete—far from it.

Table 8.1. Major Mississippian excavation assemblages from the Savannah River Basin (modified from Anderson 1994a, table 4)

Site	Excavation Date	Site Type	Phases of Primary Occupation	Reference
Mason's Plantation		Platform Mounds (n = 6)	Savannah III Hollywood?	C. Jones 1873, 148–57; C. Moore 1898, 167–68
Tate 9Eb86		Platform Mound (n = 1)	Beaverdam?	Hutto 1970, 23–25
Rembert 9Eb1	1883 1948	Platform Mounds (n = 5)	Beaverdam Rembert	C. Thomas 1894, 315–17; Caldwell 1953; Rudolph and Hally 1985, 453–59; Anderson, Amer, and Elliott 1994
Hollywood 9Ri1	1891 1965	Platform Mound (n = 2)	Hollywood	C. Thomas 1894, 317–26; DeBaillou 1965
Haven Home 9Ch15	1897–98	Burial Mound (n = 1)	Savannah I/II	Waring 1968b
Hudson's Ferry 9Sn3	1897–98	Burial Mound (n = 1)	Lawton Hollywood	C. Moore 1898, 169–71
Lawton 38Al11	1897–98	Platform Mound (n = 1)	Lawton	C. Moore 1898, 171–72; Anderson 1990a, 662–68
Irene 9Ch1	1939–41	Platform and Burial Mounds (n = 2)	Savannah I/II Savannah III Irene I	C. Moore 1989, 168; Caldwell and McCann 1941

Table 8.1. *Continued*

Tugalo 9St1	1956–57	Platform Mound (n = 1)	Jarrett Rembert Tugalo	C. Thomas 1894, 314–15; Caldwell 1956
Chauga 38Oc47	1958	Platform Mound (n = 1)	Jarret Tugalo Estatoe	Kelly and Neitzel 1959; Kelly and Neitzel 1961
Estatoe 9St3	1959–60	Platform Mound (n = 1)	Tugalo Estatoe	Kelly and DeBaillou 1960
I.C. Few 38Pn2	1967	Burial Mound? (n = 1)	Beaverdam Rembert Estatoe	Grange 1972
Beaverdam Site Group 9Eb92	1980	Hamlet?	Beaverdam Rembert	Campbell and Weed 1984
Beaverdam Site Group 9Eb207	1980	Hamlet?	Beaverdam	Campbell and Weed 1984
Beaverdam Site Group 9Eb208	1980	Hamlet?	Beaverdam	Campbell and Weed 1984
Beaverdam Site Group 9Eb219	1980	Hamlet?	Jarrett Beaverdam	Campbell and Weed 1984
Big Generostee Creek 38An126	1980	Hamlet?	Rembert	Wood et al. 1986

Continued

Table 8.1. *Continued*

Site	Excavation Date	Site Type	Phases of Primary Occupation	Reference
Van Creek 9Eb382	1980	Hunting Camp?	Rembert	Wood et al. 1986
Clyde Gully 9Eb357	1980–81	Village	Jarrett	Tippitt and Marquardt 1984
Simpson's Field 38An8	1980–81	Hamlet?	Beaverdam Rembert	Wood et al. 1986
Rufus Bullard 9Eb76	1980–81	Village?	Beaverdam Rembert	Anderson and Schulden-rein 1985
Beaverdam Creek 9Eb85	1980–81	Platform Mound (n = 1)	Beaverdam	Rudolph and Hally 1985
Rucker's Bottom 9Eb91	1980–82	Village	Beaverdam Rembert	Anderson and Schulden-rein 1985
Tomassee 38Oc186	1986	Village	Estatoe	Smith et al. 1988
Red Lake 9Sn4	1988	Platform Mound (n = 1)	Lawton	Mark Williams, pers. comm.
Chattooga 38Oc18	1989–93	Village	Estatoe	Schroedl and Riggs 1989

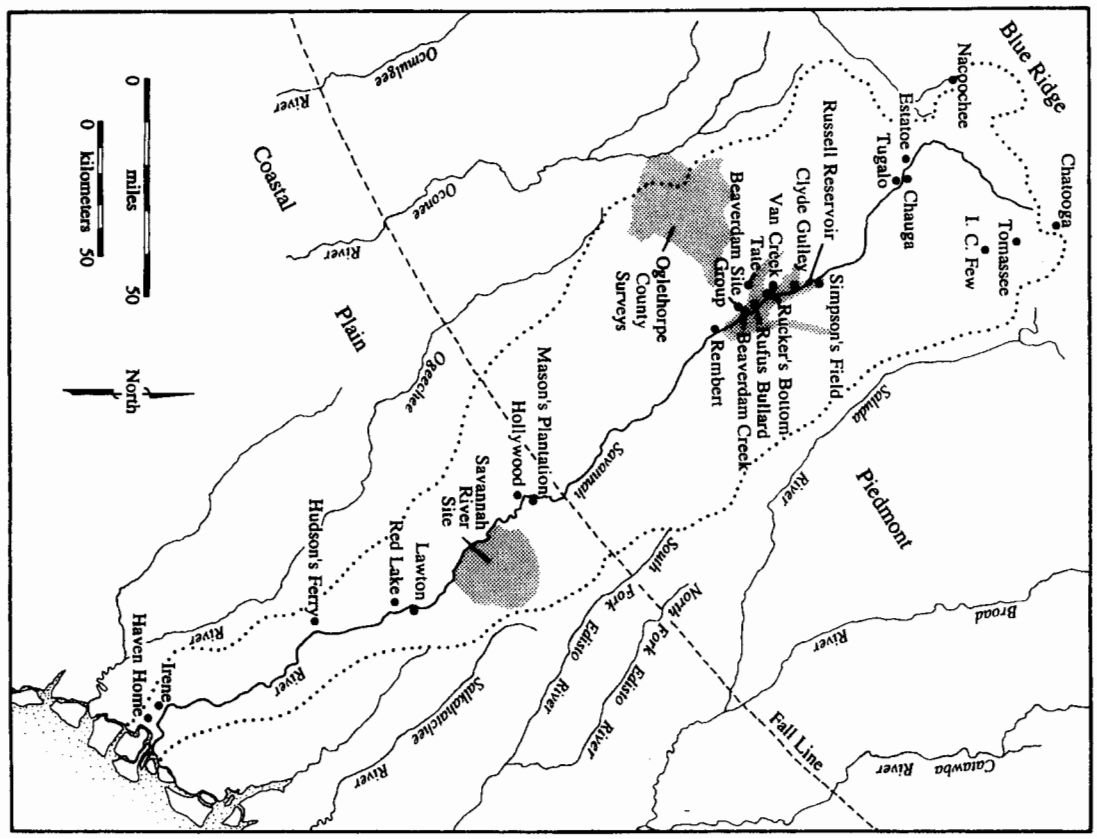

Figure 8.1. Major Mississippian sites and survey areas in the Savannah River Basin

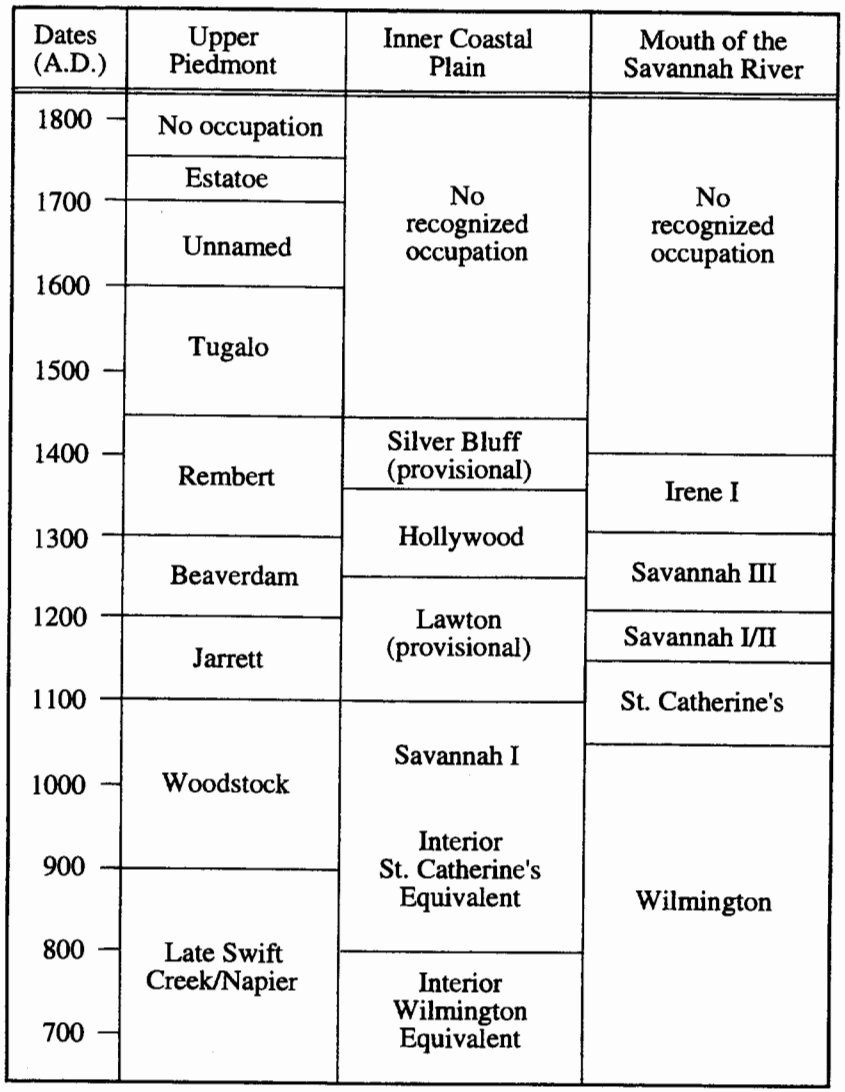

Figure 8.2. Late Prehistoric cultural sequence in the Savannah River Valley (modified from Anderson et al. 1986; Anderson 1994a, 159)

Due to the small size and inconspicuous nature of typical early Mississippian burial mounds, which are little more than gentle rises of earth less than a meter in height, for example, some of these site types unquestionably remain undetected. Likewise survey coverage, though extensive and providing a large sample of sites, still encompasses less than 10 percent of the total area of the basin. Thus, although at the present it is safe to say that a fairly detailed and quite possibly representative sample of Mississippian settlement data has been collected from the Savannah River basin, many surprises likely remain, whose details will be filled in over the years to come.

Evidence for Political Change from the Major Centers

A good overview of the political changes that occurred in the Savannah River basin during the Mississippian era emerges from an examination of the occupational histories of the major mound centers. No ceremonial centers are known to have been present in the basin at the end of the Late Woodland period, from ca. A.D. 900 to 1100. Although the use of low sand burial mounds in egalitarian mortuary behavior is inferred, this type of collective ceremonial behavior has been documented in contemporary sites from adjoining coastal areas (Brooks et al. 1982; Caldwell 1952; Thomas and Larsen 1979), no sites like this are currently known at this time level from the Savannah River basin. The presence of initial Mississippian Woodstock ceramics at Chauga and Rembert suggests the occupation of these centers may have begun at this time, although only at Chauga are these ceramics actually found associated with initial mound construction activity (Anderson, Amer, and Elliott 1994; Caldwell 1953; Kelly and Neitzel 1961, 37).

Well-documented Mississippian occupation in the basin, going well beyond the infrequent presence of Woodstock or early Etowah sherds, dates to after A.D. 1100. Between ca. A.D. 1100 and 1150 four mound centers emerged, two each in the mountainous headwaters and in the Sea Island area near the river mouth (fig. 8.3). These were single-mound sites, thought to represent the political centers of simple chiefdoms. The first true platform mounds appeared at Tugalo and Chauga amid assemblages dominated by Etowah ceramic motifs, although at the latter site the presence of Woodstock ceram-

ics, as noted, indicates occupation and possibly mound construction may have begun somewhat earlier. Mound construction may have also begun at Rembert at this time, although unfortunately our knowledge of this now-submerged center comes from limited terrestrial and underwater testing. Whether the centers in the northern part of the basin were founded by populations from northwestern Georgia, as the ceramic evidence suggests, or reflect less direct interaction by indigenous populations adopting Etowah ceramic technology along with chiefly organizational structures is currently unknown. Two low burial mounds were also constructed at this time at Haven Home and Irene, sites in the southern part of the basin near the river mouth. These mounds were used during the St. Catherine's and Savannah I/II phases, at the transition from Late Woodland to Early Mississippian in the area. Although a continuation of coastal Woodland mortuary practices is indicated, some evidence for the beginnings of social ranking is suggested by the differential presence of grave goods and a change from collective to individual interments. There is no evidence that Mississippian populations were present in the central part of the basin at this time.

Between. A.D. 1150 and 1200 Mississippian centers were established throughout the basin, and by or soon after A.D. 1200 as many as nine mound centers were occupied, in a series of distinct clusters located from 50 to 100 km apart in the Lower Piedmont, Inner Coastal Plain, Lower Coastal Plain, and in the Sea Island area (fig. 8.3). These centers were characterized by one or two mounds, with platform mounds present at all but the Hudson's Ferry site in the Lower Coastal Plain, which had two low burial mounds. Four groups of simple chiefdoms are inferred at this time, with the presence of several double mound centers suggesting that more complex chiefdoms may have been forming. Whether all the mounds in a local cluster were occupied simultaneously or, as Williams and Shapiro (1990a) have suggested, sequentially to overcome localized resource depletion remains unknown. Sometime around A.D. 1200, however, the two single-mound centers in the headwaters, at Chauga and Tugalo, were abandoned, something that may reflect a movement of people downstream. The reasons for this abandonment are unknown, although it might have been because the lower reaches of the Savannah River basin were viewed as more attractive for intensive agricul-

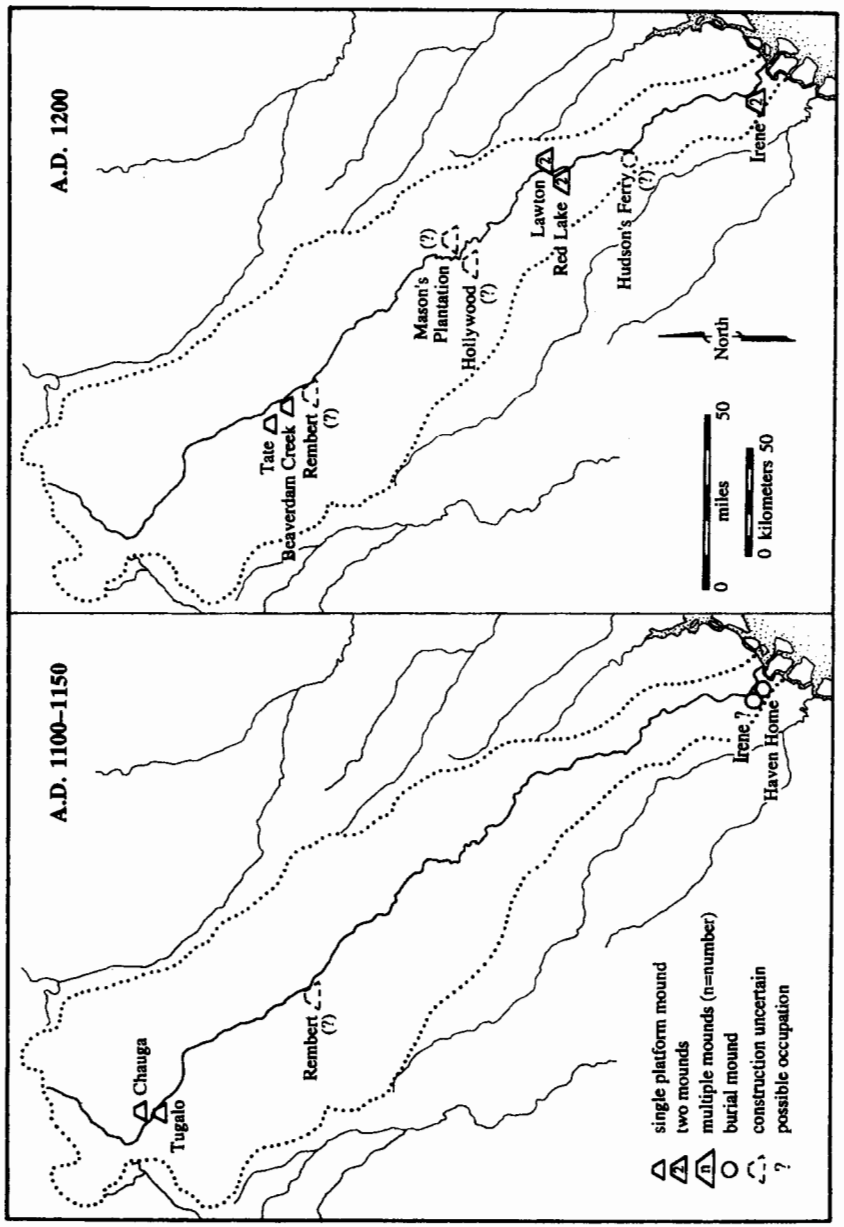

Figure 8.3. Mississippian centers in the Savannah River Valley at ca. A.D. 1100–1150 and 1200

tural food production or because these groups sought to move farther away from potential political rivals in nearby drainages like the Upper Chattahoochee, where the Nachoochee center was occupied at this time (Hally 1993).

The four clusters of small mound centers, presumed groups of closely interacting simple chiefdoms, continued to be occupied for the next half century, although by ca. A.D. 1250 complex chiefdoms characterized by multiple mounds at the dominant center may have begun to emerge, at Rembert in the central Piedmont and at Mason's Plantation in the Inner Coastal Plain (fig. 8.4). Across the river from Mason's Plantation a series of burials with elaborate prestige goods—some engraved and negative painted vessels coming from perhaps as far away as the central Mississippi Valley—were placed in one of the two mounds at the Hollywood site. The elites at this site appear to represent the dominant lineage(s) in this part of the valley at this time, although if power had already passed to Mason's Plantation, the site may have been used as an ancestral mortuary complex. Elaborate prestige goods and iconography characteristic of the Southeastern Ceremonial Complex were also found at the Irene site at the mouth of the river, and this double mound center appears to have been the focus of a presumably simple chiefdom dominating populations in the lower basin and the immediately surrounding Sea Island area.

Sometime between ca. A.D. 1250 and 1350 complex chiefdoms emerged in the Savannah River basin, a process that resulted in a sweeping reorganization of the political landscape and in the distribution and size of the valley's mound centers. By the end of this interval, almost all of the small mound centers that had dotted the landscape during the preceding two centuries were gone, and political power was now centered in two major multimound complexes at Rembert and Mason's Plantation (fig. 8.4). The emergence of the these two presumed complex chiefdoms clearly appears to have been at the expense of the smaller centers, suggesting that a consolidation of power occurred. Although at the beginning of the period there were four groups of simple chiefdoms in the basin, at the end of it, two major, and presumably discrete, political entities occupied the central portion of the basin, with centers roughly 100 km apart on opposite sides of the fall line. The populations in the upper and

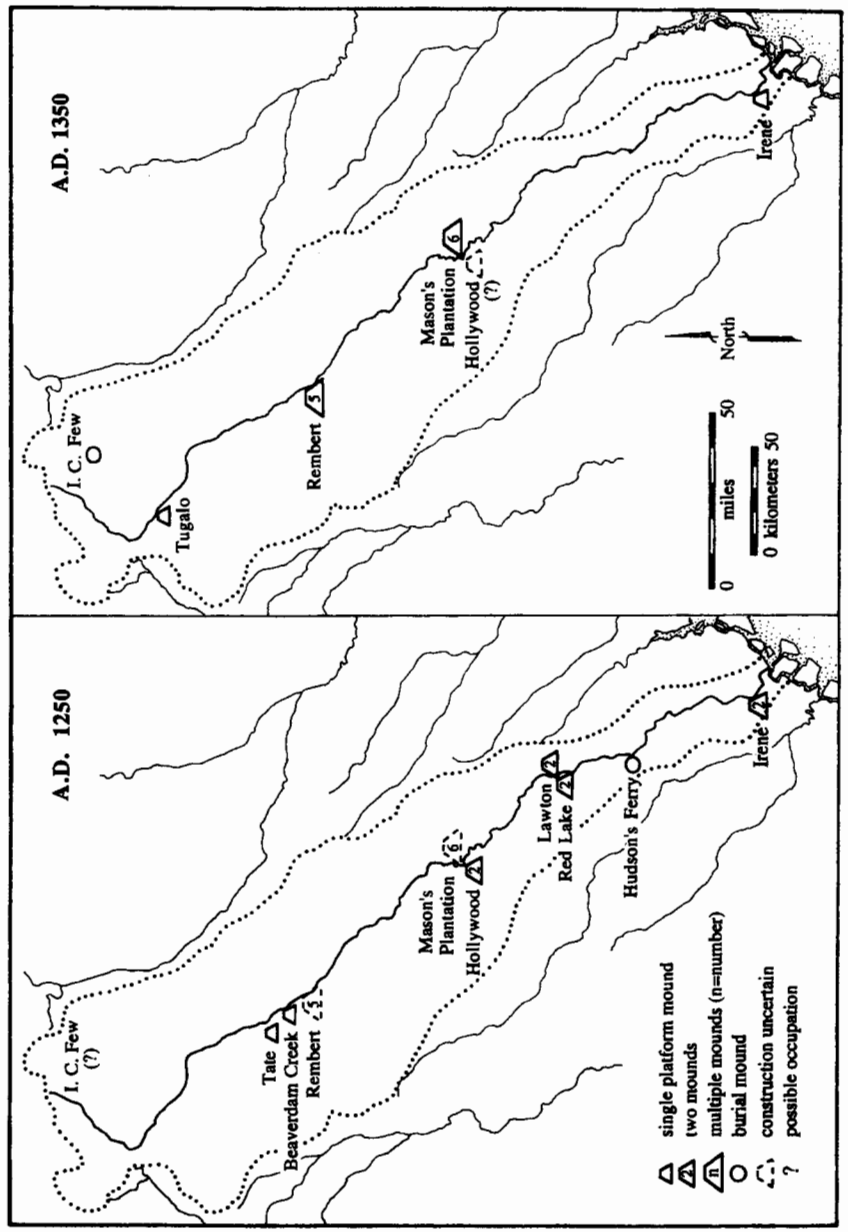

Figure 8.4. Mississippian centers in the Savannah River Valley at ca. A.D. 1250 and 1350

lower parts of the basin reacted or were effected differently by these events. The platform mound at Irene was abandoned, suggesting chiefdom organization collapsed in this part of the basin, whereas in the headwaters a new, presumably simple chiefdom appears to have emerged, centered on the single-mound Tugalo site. The I. C. Few burial mound in the extreme upper reaches of the basin also appears to have been in use at this time. It is possible that rivalry between the two complex chiefdoms in the central part of the basin may have permitted a chiefly society in the headwaters, lying on the periphery, to have some degree of autonomy.

The presence of two complex chiefdoms in relatively close proximity appears to have been an unstable situation, because by ca. A.D. 1400 or shortly thereafter only one multimound center remained occupied, at Rembert (fig. 8.5). The elites at this center likely exerted at least some influence on populations throughout the basin during the comparatively brief period of their ascendancy, although there is little evidence for the direct control of peoples at much distance from the site. Exactly when the abandonment of their possible rival's center at Mason's Plantation occurred is unknown, although post–Hollywood phase components are rare in this part of the drainage, suggesting this site was well into decline by or shortly after A.D. 1350. Intrusive Irene urn burials were placed in the upper part of the Hollywood mounds, although the site appears to have been otherwise unoccupied. Use of the Tugalo and I. C. Few mounds continued in the upper part of the drainage, however, suggesting that the emergence of the Rembert site as the dominant political power in the drainage did not appreciably reduce the autonomy of more distant populations. That Rembert apparently failed to dominate centers elsewhere in the basin when it should have been at the height of its power may have been due, in part, to the competition it was likely facing from chiefdoms located outside the Savannah River basin.

That the extent of Rembert's direct control in the basin was limited is also indicated by events occurring at the mouth of the drainage. Sometime between ca. A.D. 1350 and 1400 the Irene site reappeared as a political center, something that may also be linked to the apparent collapse of Mason's Plantation about this same time. The former platform mound was covered over and its function changed to a

burial mound, and a council house, mortuary, and a series of stockade lines or screening walls were built and then apparently enlarged one or more times. The replacement of a platform-mound complex by a council house suggests a more egalitarian form of political organization had appeared, perhaps in reaction to the collapse of local chiefly political authority that had occurred previously, as well as the greater autonomy the area may have enjoyed following the abandonment of Mason's Plantation. Around A.D. 1400, then, three locuses of political power remained in the basin, at Irene, Rembert, and Tugalo, of which the centers in the upper part of the basin, at Rembert and Tugalo, likely retained a traditional hierarchical chiefdom organization, whereas at Irene a more loosely organized and egalitarian form of organization appears to have developed. The nature of relationships between these centers is unknown, although there is some evidence for increased warfare at this time, notably in the expansion of fortifications at Irene, their appearance and subsequent expansion at Rucker's Bottom, a small village in the central Piedmont, and the occurrence of occasional multiple burials, or burials with weapons trauma, at Irene and other sites.

Around A.D. 1450 or shortly thereafter, the most dramatic development in the Mississippian political history of the basin occurred, the depopulation of an almost 300-km stretch of the valley, from the Upper Piedmont to the river mouth. The Rembert and Irene centers were abandoned, and the lower basin apparently remained unoccupied and only minimally visited for almost two centuries, until a number of historic Indian groups moved or were relocated into the area in the late seventeenth century, when the basin served as a western buffer for the English colony centered at Charlestown Landing (fig. 8.5). Occupation continued in the mountainous headwaters area, however, and population appears to have increased appreciably, perhaps reflecting a relocation of peoples from the central and lower portions of the basin. The Tugalo center continued to be occupied, Chauga was reoccupied for the first time in two centuries, and a new center emerged at Estatoe. Although mound construction appears to have stopped sometime around A.D. 1600, all three sites were occupied into the eighteenth century, when they were prominent Lower Cherokee towns.

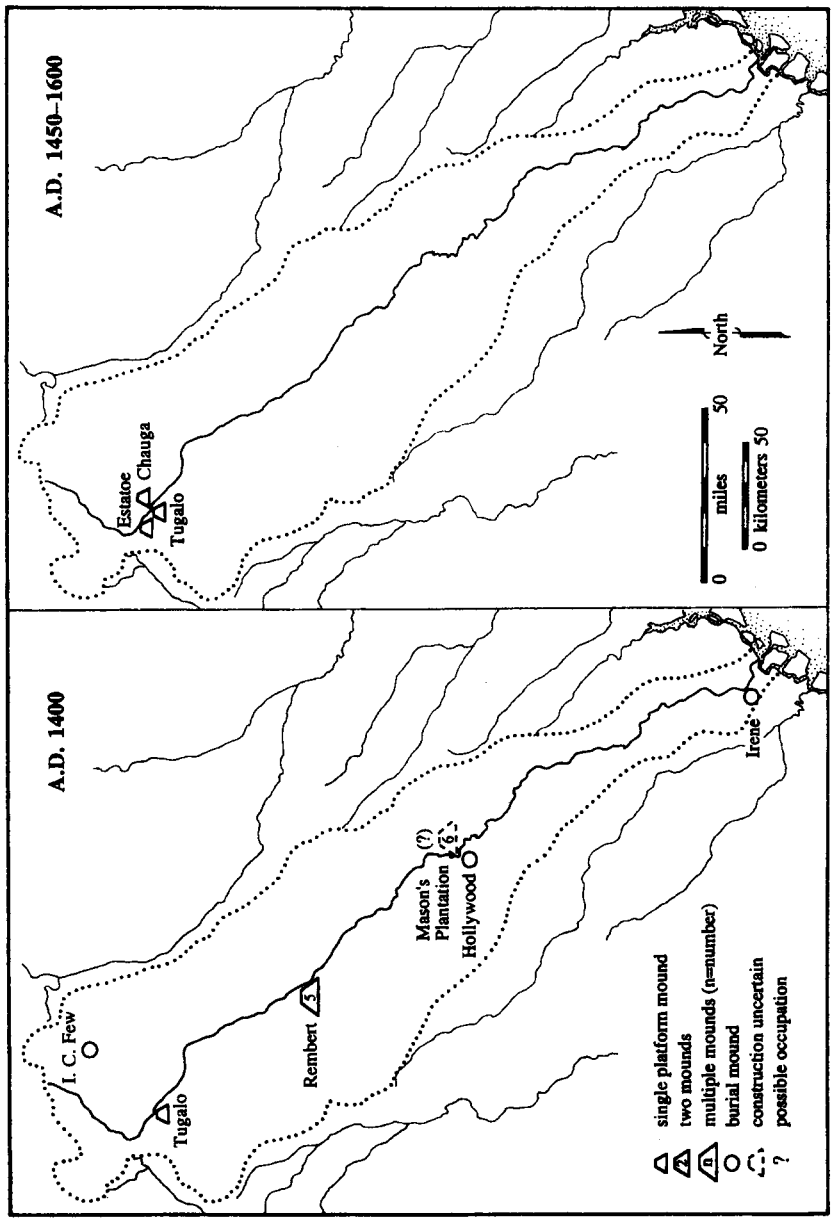

Figure 8.5. Mississippian centers in the Savannah River Valley at ca. A.D. 1400 and 1450–1600

Evidence for Political Change from Site Distributional Data

The broad political trends indicated by an examination of occupational histories at the major centers is supported by general survey data. More than 100 survey projects have been conducted to date in the basin; approximately 2.6 percent of the approximately 27,450-km^2 area has been intensively surveyed, and another 5 percent has seen less intensive coverage. A total of 551 sites with Mississippian components have been recorded (table 8.2); primary data about the areas examined and intensity of survey coverage, physiographic province within the drainage, total number of sites found and the number of Mississippian components on these sites by subperiod or phase, and collection locations and bibliographic references have been detailed elsewhere (Anderson 1990a; 1994b, 165–70). In all, 304 Early, Middle, and Late Mississippian components have been identified on these sites using temporally sensitive ceramic sorting criteria; another 323 Mississippian components could not be placed within a specific subperiod due to small sherd sample sizes, or else where only nondiagnostic Mississippian artifacts, such as small triangular points, were present.

A total of 125 Early Mississippian components, which date from roughly A.D. 1000 to 1250, have been identified within the basin. These components belong to the Savannah I/II, Savannah I, Woodstock, Jarrett, and Beaverdam phases, proceeding from the mouth to the headwaters, respectively (compare fig. 8.2, table 8.2; subperiod rather than phase assignments are used to facilitate the comparison of components in different parts of the drainage). Initial Mississippian Woodstock complicated stamped ceramics are extremely rare, occurring on fewer than a dozen sites, and only at Chauga have more than a few sherds been found. The first Mississippian ceramics observed in appreciable numbers are characterized by Etowah one- and two-bar nested diamond motifs, indicating some kind of interaction with groups in northwestern Georgia. The largest numbers of identified Early Mississippian components come from the central part of the basin, in the Inner Coastal Plain/fall line and Lower Piedmont subareas, and date to the Jarrett and Beaverdam phases. The existence of hamlets, small villages, and single-mound centers has been documented at this time level in the Lower Piedmont

(Campbell and Weed 1984; Rudolph and Hally 1985; Tippitt and Marquardt 1984). Interestingly, although the first platform-mound centers were apparently occupied in the upper part of the drainage, at Chauga and Tugalo (although Rembert may have been occupied quite early as well), only three Early Mississippian components were identified in the survey collections from the upper reaches of the basin, in the Upper Piedmont/Blue Ridge area. The first Mississippian settlements in this part of the basin, assuming sampling bias is not operating, may have been largely restricted to primary centers.

A total of 121 Middle Mississippian components, which date from ca. A.D. 1250 to 1450, have been identified in the basin, encompassing the Irene I, Hollywood, Silver Bluff, and Rembert phases. Although occurring with greatest incidence (N = 51) in the Lower Piedmont in the vicinity of the Rembert site, which is inferred to have been the center of a complex chiefdom during this period, Middle Mississippian components were common everywhere in the basin with the exception of the headwaters area. The low incidence of components in the headwaters area is not altogether unexpected, as only one center, Tugalo, was occupied at this time in this part of the basin. At least some of the sites in the Lower Piedmont in the general vicinity of Rembert have been extensively excavated and shown to be small villages or hamlets (Anderson and Schuldenrein 1985; Campbell and Weed 1984). In the Inner or Lower Coastal Plain a pronounced drop in the number of identified components occurred from the Early to the Middle Mississippian subperiods, suggesting local population levels were declining or else settlement was becoming more nucleated; unfortunately, no nonmound sites from this time level have been excavated to help resolve this question. As a result, very little is known about the nature of Middle Mississippian settlement around Mason's Plantation, the other multimound center occupied in the basin at this time level. The abandonment of the Lawton and Red Lake centers also occurred at this time and is unquestionably part of a process that culminated in the abandonment of the lower part of the drainage. Only at the river mouth did an increase in the number of Middle Mississippian components occur, although during this period the Irene center was revitalized following a period of abandonment.

The distribution of Late Mississippian components (N = 58), dating

Table 8.2. Mississippian components in the Savannah River Valley by period and major physiographic zone (modified from Anderson 1994a:Table 5)

Locality from South to North	Area examined (ha)	No. of prehistoric sites	Total no. of sites	Total no. of Mississippian sites	Mississippian components			
					Unknown	Early	Middle	Late
Mouth of the	1,419.4	219	313	29	2	14	17	0
Drainage	0.69%	5.59%	6.10%	5.26%	0.62%	11.20%	14.05%	0.00%
Lower Coastal	12,876.3	412	462	79	37	33	14	4
Plain	6.26%	10.52%	9.01%	14.34%	11.46%	24.40%	11.57%	6.90%
Inner Coastal	54,206.4	1,118	1,278	145	114	39	34	8
Plain–Fall Line	26.33%	28.54%	24.92%	26.32%	35.29%	31.20%	28.10%	13.79%
Lower	89,737.5	1,860	2,703	265	160	36	51	23
Piedmont	43.60%	47.49%	52.70%	48.09%	49.54%	28.80%	42.15%	39.66%
Upper	47,600.7	308	373	33	10	3	5	23
Piedmont–Blue Ridge	23.13%	7.98%	7.27%	5.99%	3.10%	2.40%	4.13%	39.66%
Totals	205,840	3,917	5,129	551	323	125	121	58
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

from ca. A.D. 1450 to 1750 and encompassing Irene II, Yamassee, Tugalo, and Estatoe phase assemblages, strongly support the inference that the lower reaches of the basin were depopulated during this era. Few Late Mississippian components occur below the Lower Piedmont, and most of these were assemblages characterized by one or a few artifacts that may represent the remains of isolated hamlets, short-term camps, or special activity areas. Although the frequency and proportional occurrence of Late Mississippian components increases from the river mouth to the headwaters, only in the Upper Piedmont/Blue Ridge physiographic zone are they more common than Early or Middle Mississippian components. No Late Mississippian components are known from the lower part of the basin near the river mouth, indicating the abandonment of the Irene site was only part of a process affecting a much larger area, something also indicated by the comparatively few components found in the Inner and Lower Coastal Plain. Although more Late Mississippian components are found in the Lower Piedmont, most of them (N = 18, 78.3 percent) come from the extreme western part of the basin near the Oconee River, which was densely settled at this time (Freer 1989; Jefferies and Hally 1975). In the headwaters area, in contrast, Late Mississippian components are more widespread; many are historic Cherokee in age, and appear to come from hamlet or town sites (for example, Schroedl and Riggs 1989; Smith et al. 1988).

Evidence for Political Change from Specific Project Areas

These patterns of Mississippian settlement and political change in the Savannah River basin receive additional support through analyses of assemblages from intensively surveyed localities, including the Savannah River site in the Inner Coastal Plain, and the Richard B. Russell Reservoir and the Oglethorpe County Clearcut Project tracts in the central Piedmont (Anderson and Joseph 1988; Freer 1989; Sassaman et al. 1990).

Approximately 40 percent of the 777-km^2 Department of Energy's Savannah River site has been intensively surveyed, and 755 prehistoric sites have been recorded. Of these, 164 have yielded identifiable Late Woodland components, and Mississippian components have been found at 91 sites (Sassaman et al. 1990, 276). Late Woodland sites are widespread, and a dispersed settlement strategy has been

inferred, with minimal political integration (Brooks and Hanson 1987; Sassaman et al. 1990, 315–17). A marked reduction in the number of sites occurs in the ensuing Mississippian period, and their distribution is restricted to primarily along the larger tributaries. Possible habitation sites, characterized by the presence of ceramics, tend to occur on major stream terraces, probably to take advantage of the natural soil fertility and appreciable wild food resources in these areas (Larson 1972; B. Smith 1978). Sites characterized by small triangular projectile points only, which comprised almost a third of the sample and may represent the remains of hunting camps, tended to occur much more widely over the landscape. From a high of twenty-eight during the Early Mississippian, the number of components declined to nineteen during the subsequent Middle Mississippian subperiod, and to zero in the Late Mississippian, supporting the inference that this part of the basin was indeed abandoned, and further suggesting that this process may have occurred gradually, over the course of the Middle Mississippian, rather than abruptly at the end of this subperiod.

A similar pattern of population decline was documented in the Richard B. Russell Reservoir area, although in this central Piedmont locality it occurred after the Middle Mississippian subperiod. More than 5,000 ha in the reservoir area was extensively surveyed in the 1970s, with more than 600 prehistoric archaeological sites found and large-scale excavations conducted in more than a dozen locations (Anderson and Joseph 1988). Few Late Woodland sites were identified, and recognition of sites of this period remains a problem to this day in the Georgia and South Carolina Piedmont. Mississippian assemblages were widespread, however, with materials of this period identified on 125 sites. Numbers of components increased from the Early (N = 34) to the Middle Mississippian (N = 46) subperiods, after which a marked decrease took place in the Late Mississippian (N = 5). The settlement data thus indicates that the consolidation of local Early Mississippian single-mound centers into one multimound center at Rembert during the Middle Mississippian subperiod did not result in a decline in the number of sites and possibly people in the area. Just the reverse, in fact, appears indicated, suggesting the formation of a complex chiefdom locally may have facilitated population growth. Given this, the marked decline in components from

the Middle to Late Mississippian subperiod indicates the collapse of the Rembert chiefdom was not felt just at the center but was part of a larger pattern of abandonment and depopulation throughout this part of the valley.

An intensive survey of a series of clearcut tracts in the western portion of the Savannah River basin just to the south of the Russell Reservoir area provide additional clues about the causes of political change during the Mississippian period in the Lower Piedmont. A total of 313 prehistoric sites were found in 8 tracts encompassing 1,198 ha in Oglethorpe County, Georgia, and extending from the Oconee River to a major tributary of the Savannah (Freer 1989). Mississippian components were identified at 71 sites. Early and Middle Mississippian components were rare, occurring on only 4 and 5 sites, respectively, indicating comparatively minimal use of this area during these subperiods. The situation changed dramatically in the Late Mississippian subperiod, when 56 components were present. Most of these (N = 40) were located in the Oconee River basin, where a dramatic increase in the number of sites has been documented at this time (Rudolph and Blanton 1981; Kowalewski and Hatch 1991). Sites with Mississippian projectile points only were much more common in the tracts in the Savannah than in the Oconee Basin, suggesting use of the former area may have been primarily for hunting or warfare. Population expansion by the Oconee chiefdoms is indicated by the presence of a number of probable Late Mississippian habitation sites in the extreme western part of the Savannah Basin, movement that was probably facilitated by the collapse of the Rembert chiefdom. Minimally, the distributions indicate that watershed divides were not necessarily strict boundaries during the Mississippian era.

Causes of Chiefly Cycling in the Savannah River Basin

If the survey and excavation data compiled to date holds up, it would appear that chiefdom organizational structures collapsed in the Central and Lower Savannah River basin between ca. A.D. 1300 and 1450, a process that resulted in a near-total depopulation and abandonment of the area. There is some evidence to suggest that this process did not occur overnight, furthermore, but took place gradually, over a

period of one to two centuries Thus, the chiefdoms centered at Irene, Lawton, and Red Lake in the lower part of the basin appear to have collapsed sometime around A.D. 1300–1350, whereas those centered at Hollywood and Mason's Plantation sites appear to have survived somewhat later, to around A.D. 1350–1400. The inferred complex chiefdom centered at Rembert in the central Piedmont, in contrast, did not collapse until around A.D. 1450. Although Irene itself was revitalized around A.D. 1350 to 1400, this was a short-lived triumph, because the site and indeed the entire area around the mouth of the drainage appears to have been abandoned by ca. A.D. 1450; by this time, in fact, most of the central and lower basin was depopulated. Only in the extreme upper part of the basin, which itself had witnessed periods of occupation and abandonment during earlier times, is there evidence for population increase after ca. A.D. 1450, and the area continued to be occupied well into the historic period. Reasons for the emergence and collapse of simple and complex chiefdoms in the basin, and for the large-scale abandonment that took place in the fifteenth century, appear to be tied to a range of environmental and historical factors, which are reviewed in the remainder of this chapter.

Environment and Resource Structure

During the same period that the Lower Savannah was depopulated, large Mississippian populations are known to have been present in the major drainages to either side, in the Oconee and Santee-Wateree Basins. The Savannah is much smaller in areal extent than these basins, however, and also much narrower in its upper reaches (fig. 8.6). If group territories were demarcated by watershed divides, an inference that may hold during periods of intense competition, the Mississippian populations in smaller basins would have had fewer natural resources to draw upon and, probably as a direct result, lower population levels. In political competition at the regional scale, therefore, the Savannah River chiefdoms may have been at something of a disadvantage simply by virtue of their location. Resident populations could thus have been forced to relocate to other areas by their more powerful chiefly neighbors.

Resource structure may have helped shape the course of events within the basin proper. The early abandonment of the lower part

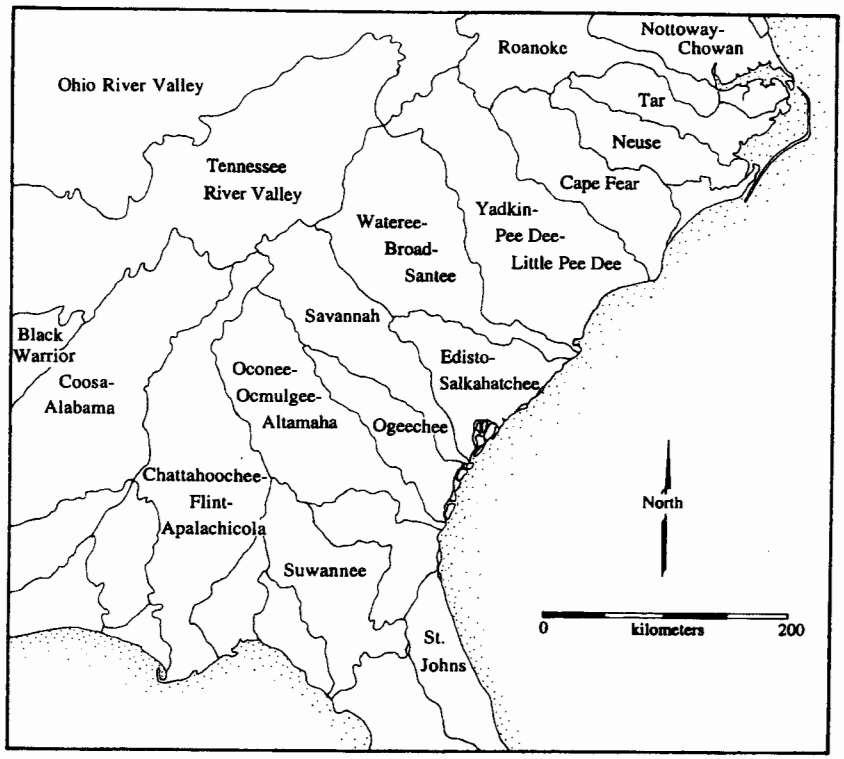

Figure 8.6. The Savannah River Basin and the size of surrounding drainages

of the Savannah River basin may have been, in part, because the area was poorly suited for societies dependent upon agricultural surpluses as well as on wild plant and game resources. Below the fall line the Savannah Basin is very narrow, with extensive swamps along the river, few large tributary streams leading into the interior, and few well-defined terraces, whereas the interior away from major channels was characterized by extensive pine forests and xeric sandy soils; food resources of interest to prehistoric populations in this province are spatially restricted and low or infrequent in occurrence over large areas (fig. 8.6). In the upper part of the drainage, in contrast, relief is more pronounced and terraces are better defined, presumably offering better opportunities for Mississippian agriculture. The Piedmont vegetation consists of a mixed mesophytic oak-hickory forest and, as a result, nut mast and game occurred throughout this physiographic province (Barry 1980; Brooks, Sassaman, and Hanson 1990, 44–52; Larson 1980, 51–56; Ward 1983, 68–69). Chiefdoms in the lower part of the basin may thus have been more vulnerable to stress, which might help explain why they were abandoned before societies farther upriver.

The Importance of Buffer Zones

The formation and maintenance of buffer zones, which served as hunting territories and hence sources of wild food resources, was a critical aspect of Mississippian life. If access to resources capable of buffering agricultural shortfalls was restricted, for example, appreciable subsistence stress could have occurred. As a result, buffers were actively defended, and these zones performed both political and subsistence functions by separating and supporting populations on the landscape. The distributions of diagnostic Mississippian projectile points and ceramics can be used to explore where buffers were located and how they operated, that is, to map where and with what intensity hunting and habitation may have occurred. In the Oglethorpe County clearcut survey data set, for example, a decrease in the incidence of sites with ceramics, presumed habitation areas, was observed with increasing distance from the Oconee River, whereas the numbers of sites at which only small triangular projectile points were present increased (Anderson 1994b, 264–65; Freer 1989).

The recognition of actively maintained buffer zones, in effect, entails determining where habitation sites are located, and comparing this with the area over which projectile points or other artifacts derived from the residents of these sites were used in resource procurement activities. These distributions may also provide clues about the nature of relationships between Mississippian societies. Where projectile points are rare or absent in areas midway between differing polities, for example, this may be because individuals from these societies consciously avoided one another or because the distance separating these polities was great enough to provide sufficient resources for each and reduce the likelihood of contact and conflict. Where projectile points are common in intermediate areas, in contrast, this may reflect intense competition and warfare between these

societies. Such inferences, of course, require evaluation with multiple and ideally independent kinds of evidence.

In a test of these ideas, the distribution of small triangular projectile points was examined by county throughout South Carolina, using data from amateur collections (Charles 1981, 1983, 1986; 4,469 of 85,102 points were Mississippian triangulars in the sample). West-to-east transects across the state were developed illustrating the occurrence of Mississippian triangulars and using two standardized measures, first as a percent of the total number of projectile points of all periods found in each county, and second as a percent of the total number of Mississippian triangular points in the statewide sample. Transects spanning the central Piedmont and the Inner Coastal Plain, from the Savannah River to the Santee-Wateree drainage and beyond are illustrated in figure 8.7. The need for large samples and data encompassing the entire state dictated the nature of the collections employed; the numbers of projectile points collected and recorded by professional archaeologists in many parts of South Carolina is very low when compared to the numbers gathered by amateurs. While the distribution of projectile points should ideally be compared with that for ceramics, sherds are unfortunately only rarely collected by amateurs and almost never in a systematic fashion. Few sites with ceramics have been recorded in the interriverine parts of the state by either amateurs or professionals, however, which is exactly the pattern that would be expected if these areas were being used as hunting territories.

Large numbers of Mississippian triangular projectile points were observed in the interriverine area in the central Piedmont, along the Upper Saluda and Broad Rivers in the vicinity of Laurens County (fig. 8.7, top). A much lower incidence of points occurred in the counties to either side, which lie along the Savannah and Upper Santee/Wateree/Catawba Rivers. This suggests that the interriverine area may well have been used as a hunting territory by the Mississippian populations occupying the major drainages to either side; the large numbers of points in this area, furthermore, suggests their may have been appreciable rivalry and conflict between these societies. This is certainly indicated during the colonial period, when the western South Carolina Piedmont was an unoccupied buffer zone separating the Cherokee on the Upper Savannah from the Catawba

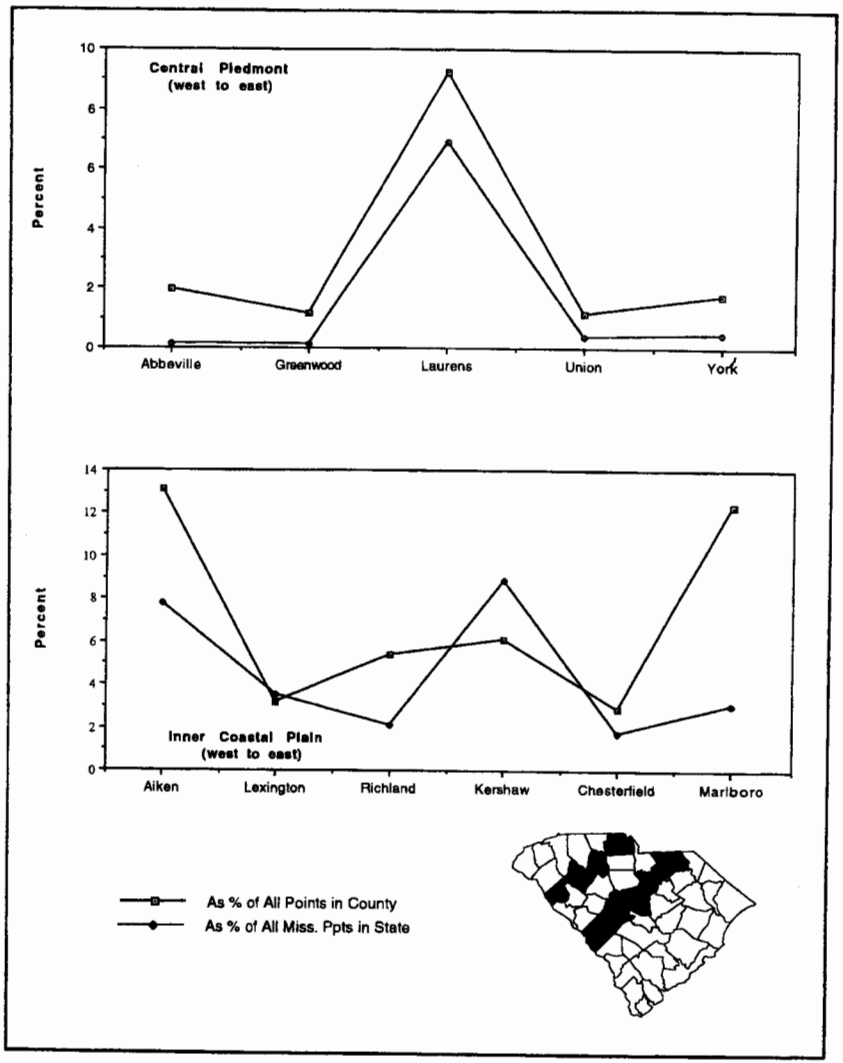

Figure 8.7. Incidence of Mississippian triangular projectile points across the central South Carolina Piedmont (top) and Inner Coastal Plain (bottom) (modified from Anderson 1994a, 268–69)

along the Upper Broad and Catawba Rivers (Milling 1940, 231–32). In the Inner Coastal Plain, in contrast, Mississippian projectile points typically occur in large numbers in counties where major river systems are present, such as the Savannah, the Wateree, and the Pee Dee (Aiken, Kershaw, and Marlboro counties, respectively; fig. 8.7, bottom). These artifacts are much less common in the interriverine areas, suggesting hunting occurred primarily in the riverine zone closer to the centers. The differing distributions appear to be closely tied to resource occurrence in the two physiographic provinces; in the Piedmont mast-producing hardwoods and wild game resources are widely distributed, making the interriverine area an attractive area for hunting, whereas in the Coastal Plain both mast and game tend to be more concentrated (along the riverine terraces). Until larger and more representative artifact samples can be obtained, the inferences presented here should be viewed as tentative and the method itself merely illustrative of how regional political relationships can be explored using archaeological data. It should be clear, however, that buffer zones were not merely depopulated areas lying between polities where nothing happened but were deliberately maintained social landscapes.

Paleoclimate and Its Impact on Crop Yields

The political stability of the Savannah River chiefdoms appears to have been closely linked to interannual and longer-term variation in spring rainfall, specifically as it shaped crop yields and potential food reserves (Anderson, Stahle, and Cleaveland 1995). The production of agricultural surpluses is assumed to have been critical to the long-term maintenance of elite authority structures in most or all southeastern Mississippian societies, making determining the relationships between climate, agricultural food production, storage technology, and political organization an important topic for research. Over the past fifteen years dendrochronologically based reconstructions of past climate have been developed in a number of parts of the Southeast using bald cypress annual growth-ring data, research directed by David Stahle and Malcolm Cleaveland at the Tree Ring Laboratory, Department of Geography, University of Arkansas (Stahle, Cleaveland, and Cereveny 1991; Stahle, Cleaveland, and Hehr 1985a, 1985b, 1988; Stahle et al. 1985; Stahle and Cleaveland 1992, 1994). Using historic weather records, a strong correlation between ring width and temperature and rainfall during the spring growing season has been documented in bald cypress, with precipitation accounting for much of the variance in growth width in the chronologies developed to date.

Potential agricultural food reserves for chiefdoms in the Savannah River basin were calculated using dendrochronologically derived growing-season rainfall estimates for the South Carolina area. These were based on two 1,000-year bald cypress chronologies developed in the Lower Coastal Plain, one some 75 km east of the Savannah in Four Hole Swamp and the other from a few km to the west of the main channel, along Ebenezer Creek (fig. 8.8). The tree-ring chronologies were calibrated with average South Carolina March-to-June rainfall during the historic era using a multiple regression model ($R^2 = .58$; Stahle and Cleaveland 1992, 1994). The annual spring rainfall values were assumed to directly correspond to potential crop yields for the years in question. Years with above average rainfall were assumed to represent periods of food production above the needs of the population, or surplus; years where rainfall was below average were assumed to represent periods of production shortfall, or food shortage. Critical to this analysis, of course, is the assumption that periods with above and below average rainfall actually reflected periods with increased or decreased crop yields. Because statewide data were used to develop the precipitation reconstruction, it must be emphasized that the trends observed here likely affected Mississippian societies all across South Carolina and adjoining portions of nearby states, although the analysis here addresses their impacts on the Savannah River chiefdoms.

Storage capacity was assumed to be two normal harvests, or one year's reserves above normal annual consumption. Food storage for longer intervals was considered improbable given the Southeast's moist climate and, given this, storage of greater quantities, even if they could be produced, would mean reserves would spoil before the society could consume them. Historic accounts detailing quantities of stored food are infrequent, although references from the later historic era, after the collapse of most chiefdom organization in the region, usually imply reserves rarely lasted as long as a year (Swanton 1946, 256–65). There is some suggestion from the accounts of the

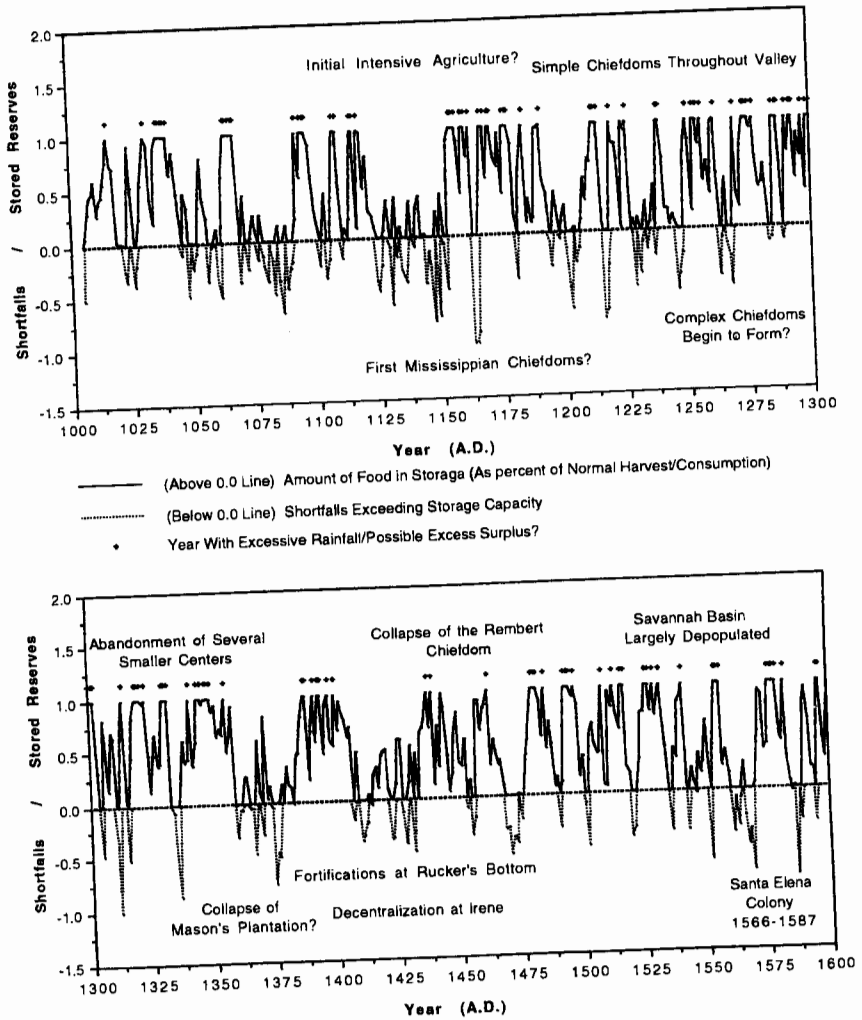

Figure 8.8. Potential food reserves in storage and years of shortfall or excess surplus: A.D. 1000 to 1600 (modified from Anderson 1994a, 282; Anderson, Stahle, and Cleaveland 1995)

De Soto expedition, however, that the region's complex chiefdoms maintained appreciably greater reserves (DePratter 1983, 165).

Potential agricultural food reserves and shortfalls are presented in terms of deviations from estimated average annual consumption in figure 8.8. Positive values, which range up to +1, reflect surpluses above average annual consumption, whereas negative values, which range to −1, represent shortfalls that must be made up from other sources. *The value for a given year represents the sum of the crops remaining in storage from the preceding year together with the yield from the current harvest, minus normal consumption.* Wild plant and animal resources are not taken into account in this analysis, although they could have been used to make up agricultural shortfalls. During the Mississippian period there are several extended intervals when stored food reserves are calculated to have been either plentiful or scarce. These reflect periods of unusual drought or extended below-average spring rainfall, when harvests would have been below normal levels, or extended periods of above-average rainfall, when crop surpluses would have been common. A number of these intervals appear to be correspond to periods when significant changes occurred in the Mississippian societies in the Savannah River basin and immediately adjoining areas (see also Anderson 1994b, 280–89; Anderson et al. 1995).

Food shortfalls happened twelve of the nineteen years from A.D. 1359 and 1377 and twenty-one of the seventy years between A.D. 1407 and 1476, for example, including seven of the eight final years of the latter interval. The collapse of a number of small chiefdoms and the appearance of fortifications is thought to have occurred sometime around the first period, and the depopulation of much of the central and lower valley took place during the second interval. Although variation in growing-season rainfall may have helped shape events like these, it was not paramount. An extended period of favorable conditions, when food reserves could have been present almost every year, for example, occurred over the first half of the sixteenth century, yet no populations returned to the Lower Savannah River basin.

The analysis clearly indicated the value of maintaining stored food reserves. Storing two normal harvests (one year's reserves) would have enabled local populations to overcome both isolated crop fail-

ures and a number of consecutive years of slightly below average harvests. This was sufficient to avoid food shortfalls in 449 (75.5 percent) of the years from A.D. 1000 to 1600. The analysis also indicated that potential famines could occur not only during periods of severe drought, when production shortfalls quickly exhausted stored food reserves, but could also come about more gradually, through a series of slightly below average production shortfalls that over time exhausted reserves. An extended series of slightly below average harvests, given inadequate or insufficient long-term storage, could thus be as devastating as shorter but more severe droughts. Maintaining stored reserves would, however, give populations time to switch over to other food sources.

Evidence for Organizational Change at Particular Sites

At a number of sites in the Savannah River basin extensive archaeological research has taken place, providing specific information about possible correlates for the formation, operation, and collapse of Mississippian chiefdoms. At the Irene site at the mouth of the river, where a platform and burial mound were present, the platform mound underwent seven successive stages of rebuilding during the Savannah I/II and III phases, indicating a fairly stable polity was probably present for several generations (Caldwell and McCann 1941). The first two stages were earth-embanked structures, which were followed by five platform-mound stages. Buildings were placed atop each stage, and fence lines were found around the entire central part of the site as well as around the base of Stage 3 and the summits of Stages 5, 6, and 7. The appearance and continuation of palisades, if these features were defensive in nature rather than screening walls to separate elite from commoner populations, may point to increasing hostilities over time or, alternatively, the increased social and physical isolation of the elite. Elaborate hearth and gutter arrangements found atop Stages 5 and 6 suggest ceremonial life was growing increasingly complex.

Chiefdom organization collapsed at the site around A.D. 1300, during the transition from the Savannah III to the Irene I phase. The platform mound was abandoned for an unknown period, long enough for appreciable erosion to occur, after which it was covered by a

large circular mound with a rounded summit with no associated structures. Considerable effort went into separating this new mound from its predecessors, including the placement of layers of shell over the last platform and the deliberate removal of its ramps. A change in function is clearly indicated, probably from a temple to a burial mound, suggesting a return to the kind of egalitarian burial practices present in this area during the Late Woodland. A probable council house was erected to the south of the primary mound about this same time, and this building was enlarged and expanded at least once, offering additional support to the idea that a change in sociopolitical organization occurred, from a stratified to a more egalitarian structure. Council houses were observed in a number of early contact era coastal Mississippian groups along the South Atlantic Slope, suggesting groups in this area may have had weak or fragile hierarchical organizational structures (Crook 1978, 39–40; DePratter 1983, 207–10; Waddell 1980, 45–46). A mortuary building with two surrounding circular enclosures, within which burials were placed, was also constructed during the Irene occupation. Structures of any kind were rare on the site, and there is little evidence to suggest the center was used by large numbers of people on other than a temporary basis, or had more than a small resident caretaker population.

The presence of headless burials, multiple burials, isolated skulls, and individuals with wounds all argue for an increase in warfare during the Irene occupation. Fortifications were present around the council house, and these expanded over time, further evidence for increasing hostilities. Finally, of six domestic structures, the two latest ones had burned, as had the mortuary. The two burned domestic structures dated to the transitional Savannah/Irene and Irene I occupations, perhaps reflecting incidents associated with the abandonment of the platform mound and then the site itself, respectively. There is some evidence from the mortuary to suggest that the site's Irene I occupants were growing impoverished in the years leading up to the abandonment of the center. Grave goods occurred with almost half the burials in the inner and presumably earlier enclosure, yet were present with less than one-quarter of the burials in the outer and presumably later enclosure. If the construction sequence is correct (assuming the spatial separation within the mortuary com-

plex does not reflect status differences among the individuals interred there), either increasing impoverishment, or egalitarianism, is suggested.

Evidence for elite impoverishment prior to abandonment was also found at the Hollywood mound center in the Inner Coastal Plain, type site for the Hollywood phase, dating from ca. A.D. 1250–1350 (DeBaillou 1965; Thomas 1894). In the smaller of the two mounds, richly accompanied burials were found in the lowest part of the mound, over which were found several burials with much less elaborate grave goods. Mound construction ceased sometime in the Hollywood phase, about the same time or slightly later than the abandonment of the platform mound at Irene and, as at that site, the platform mound at Hollywood was used by subsequent Irene peoples as a burial mound. In this case, however, all that was done was the placement of urn burials in the existing upper mound fill, without any other construction or modification.

Evidence for elite impoverishment was also indicated at Beaverdam Creek in the Lower Piedmont. Six construction stages were found in the single mound present at this site, which dated to the Beaverdam phase from ca. A.D. 1200–1300 (Rudolph and Hally 1985). Two successive earth-embanked structures were built, followed by four platform-mound stages, a construction sequence similar to that observed in the primary mound at Irene, which was occupied about this same time and may have had a somewhat similar occupational history. Because earth-embanked structures are typically assumed to represent quasi-egalitarian communal meeting areas, similar to council houses (Rudolph 1984), this construction sequence suggests the local society was becoming increasingly complex and hierarchical. A burial with extensive extralocal prestige goods of copper and shell was found in the fill between the earth-embanked structures, however, suggesting some form of social hierarchy was already present even before platform-mound construction began. This inference is also supported by the other mound burials; grave good incidence was highest in the earliest phases of site use and then appears to have declined markedly over the remainder of the occupation (Anderson 1990a, 568–73; Rudolph and Hally 1985, 348–51). The unusual elite burial interred during the interval between the abandonment of the first structure and the construction of the second is strong evidence

for an association between the death of an elite and public construction activity locally.

At the Rucker's Bottom in the central Piedmont two small Middle Mississippian agricultural communities were found that appear to have been occupied from about A.D. 1200 to 1450 (Anderson and Schuldenrein 1985). Both the earlier Beaverdam phase and later Rembert phase villages were characterized by structures about plazas, a typical Mississippian arrangement. Large circular buildings were found in both villages fronting on the plazas that have been interpreted as council houses, and their presence may indicate considerable local decision-making authority. Between fifteen and thirty houses and probably on the order of 100–150 people were present in these communities at any given time. The inhabitants of the earlier village, presumed commoners, likely submitted tribute to elites at the nearby Beaverdam Creek mound center, which was located about 12 km downstream. Compared with the individuals found at the center, the Rucker's Bottom villagers were shorter in stature, in much poorer health, and interred with less elaborate grave goods, if they were buried with any at all (Anderson 1994b, 223–25; Weaver et al. 1985). The tributary demands presumably placed on the villagers may explain the observed differences in relative skeletal health and in stature between the two populations.

Some time after A.D. 1300 the Beaverdam Creek mound center was abandoned and political power in this part of the drainage became concentrated at Rembert, which was likely the center of a complex chiefdom. The village at Rucker's Bottom relocated a hundred meters up the terrace, and simple ditch and stockade fortifications appeared, suggesting the site had become something of a fortified center or retreat for local populations. The villagers appear to have enjoyed greater autonomy than their presumed ancestors in the earlier village, as they were in better overall skeletal health and no evidence was found for food leaving the site as tribute. Compared with the earlier, Beaverdam phase occupation, subsistence was highly focused, with a much narrower range of species exploited and an emphasis on deer and acorns. Intensification of large mammal procurement may have been brought about by a need to maximize hunting return, permitting increased labor for farming or defense. It might also reflect the depletion of game in the locality. As at the other

sites examined in the central and lower valley, the Rucker's Bottom village was abandoned about A.D. 1450.

Before the site was abandoned, there is some evidence to suggest its inhabitants were experiencing appreciable stress. The fortifications surrounding the village were replaced at least once, at which time they were enlarged and strengthened. Posts in the palisade lines were increased from 15 to 30 cm in diameter, the shape shifted from semicircular to rectangular, and a larger ditch was excavated in front of the stockade. Protection of stored food reserves appears to have been increasingly important, something that may be linked to the below-average rainfall conditions during this period. Storage in both villages is assumed to have typically been in above-ground facilities, like the barbacoas reported by the early Spanish explorers (Judge 1991). A number of small circular and rectangular post-hole concentrations, found in both the earlier and later villages, may represent storage buildings or corncribs. During the later occupation, however, massive subterranean storage features also appeared, one located behind a house against the stockade and another in the center of the plaza area. Their locations, in highly public as well as private or obscure places, suggests the villagers may have been trying to hide at least some of their food reserves, as well as place their probable public storage facilities in areas where their use would have been visible to everyone.

The Rucker's Bottom village appears to have been abandoned by its inhabitants rather than destroyed in warfare. Some low-level conflict may have been occurring, however, because the only multiple burial found at the site, a group of three individuals lying extended on their backs, came from the later, Rembert phase village. If these people were ambushed by raiders, it would fit with the pattern of skirmish warfare expected at this time, when buffer zones were likely increasingly challenged. A series of such losses to such a small community might well have prompted site abandonment. No evidence for burning of structures was found, however, although at least one structure dating to the final period of occupation had been abandoned and had later been used as a butchering area and bone dump. Whether this reuse of a residence as a butchering/dumping area was associated with the abandonment of the village or merely with the abandonment of this structure at some earlier time is unknown.

The Chauga site in the extreme upper reaches of the basin was first occupied during the Jarrett phase from about A.D. 1100–1200, when six mound stages were built, and again starting ca. A.D. 1400 to 1450, during the Tugalo phase and after, when four additional stages were erected (Kelly and Neitzel 1959, 1961). Palisades were present during Stages 1 and 6, at both the start and the end of the Early Mississippian occupation. As at Beaverdam Creek and Hollywood, clear evidence for a gradual impoverishment of the site elites is evident in the burial assemblage found in the mound, a pattern that was observed in both the Early and the Late Mississippian occupations (Anderson 1994b, 302–5). At Tugalo, another center in the northern part of the basin, a transition from earth-embanked structures to substructure mound mantles was documented during the Early Mississippian period, a pattern like that observed at Irene and Beaverdam Creek (Duncan 1985; Williams and Branch 1978). Well-defined log mantles were found over the slopes of Mound Stages 2 through 4, and a fence line was built around Stages 3 and 4, prior to the abandonment of the center after Stage 5. The fence lines around Stages 3 and 4 had burned, as had the log mantle on Stage 4, something that may have been caused by warfare, by accident, or, possibly, by the intentional use of fire in mound building and renewal activities.

A transition from earth lodges to mound stages was also noted at Estatoe in the upper basin, where six construction episodes were identified in the Late Mississippian mound, built after A.D. 1450 (Kelly and DeBaillou 1960). The first five stages were very thin, with only a few centimeters of fill separating one from the next. Each was surmounted by a large structure that resembled the public buildings found in the lowest stages of the primary mounds at Irene, Beaverdam Creek, and Tugalo, although no earthen embankments were found. The presence of these buildings suggests that decision making may have been fairly egalitarian locally during the early Tugalo phase. A thick stone layer was placed over the first five stages, and a true platform mound was erected, again surmounted by a structure. Even given the dramatic architectural separation of the last stage from the first five, continuity was indicated by the reuse of the corner-support post holes from the previous structures.

The delay in the emergence of a platform mound at Estatoe may

indicate political control was initially based elsewhere, perhaps at Tugalo or Chauga, which had earlier Tugalo phase occupations. If populations from the central and lower basin moved upriver in the fifteenth century, they would have encountered established Mississippian groups in the headwaters. The new residents would have likely had to acknowledge the primacy of the older centers and their leaders, especially if they were refugees and unable to challenge the local chief's power and authority. That elites eventually did emerge at Estatoe, and the center developed appreciable local autonomy, is indicated by the construction of the final mound stage. Although separated from the previous stages by the thick rock layer, suggesting a considerable change had occurred, continuity was also indicated by the reuse of earlier post holes, suggesting population replacement is unlikely and that the emergent elites were local in origin.

General Trends Associated with Political Change in the Savannah River Basin

A wealth of archaeological evidence for political change has been found on Mississippian sites in the Savannah River basin. The emergence of stratified chiefdoms, we have seen, was characterized by a replacement of earth-embanked structures or council houses by structures atop platform mounds at several sites, notably Irene, Beaverdam Creek, and possibly Tugalo. A council house reappeared on at least one site, Irene, moreover, following the abandonment of the platform mound. These architectural changes are thought linked to changes in organizational structure, from decision making by consensus to decision making in the hands of an elite. The presence of council houses on a site does not, however, indicate an egalitarian social hierarchy was present. Council houses were observed in the Rucker's Bottom villages, both when the nearby Beaverdam Creek site was the center of a presumed simple chiefdom and later when Rembert was apparently the center of a complex chiefdom. This suggests outlying communities had at least some autonomy and control over local affairs in even the most complex chiefdoms. It further suggests that council houses or public decision-making forums were probably in use throughout the Mississippian period locally, although their role was probably diminished at chiefly centers.

The Savannah River data also indicate that the appearance of fortifications in many cases signals either the emergence or collapse of chiefly organizational structures. Prior to site abandonment, fortifications appeared around entire communities at Irene, Rucker's Bottom, and possibly Tugalo, and around or atop platform mounds at Irene, Chauga, and Tugalo. They also appeared at Chauga when the center was first founded. Collapse does not appear to follow inevitably, or at least immediately, when fortifications appeared, however. Irene was occupied for some time following the appearance of fortifications around Stage 3, with platform-mound construction only ceasing following Stage 7, presumably several generations later. The presence of fortifications does not appear to signal the occurrence of intensive warfare, furthermore, because there is little evidence for this other than at Irene. What the appearance of fortifications may signal is that the position of the elite was becoming less secure.

Evidence for an impoverishment of chiefly centers prior to their abandonment was documented through mortuary analyses at several mound sites, including at Irene, Hollywood, Beaverdam Creek, and Chauga. At all of these sites a decline in the proportional occurrence of burials with grave goods, and particularly elaborate grave goods of shell or copper, occurred in the later periods of occupation. A similar decline in the occurrence of grave goods was observed in the commoner burials at the Rucker's Bottom village prior to the abandonment of that site, suggesting (if not a change in mortuary practices) impoverishment may have reached all levels of society.

Most significantly, the mortuary evidence from the Savannah River basin indicates elite impoverishment did not quickly lead to organizational collapse, a finding somewhat different from that predicted by traditional models (that is, Peebles and Kus 1977). Instead, at several centers, including Hollywood, Beaverdam Creek, and Chauga, one or more later stages of mound construction occurred during periods characterized by a significant decline in the occurrence of prestige goods in burials. Elite control did not, therefore, appear to depend upon these symbols, at least over the short term. The decline in grave offerings observed at Rucker's Bottom, furthermore, suggests impoverishment was societywide, not just centered on elites or at centers. This suggests care should be taken when

inferring chiefdom organizational collapse to a decline in the availability of prestige goods. At Irene, the decline in the incidence of grave goods in burials in the mortuary indicates this kind of impoverishment may even signal trouble in more egalitarian societies.

More than 400 Mississippian human burials have been recovered from the Savannah River basin to date, from mound, village, and hamlet contexts, and these data offer invaluable assistance in understanding the lives of commoners and elites during the Mississippian period (Anderson 1994b, 311–16). At three of the centers, Beaverdam Creek, Chauga, and I. C. Few, burials were recovered from both mound and village areas. At each site proportionally far more females than males were found in the village areas than in the mounds, and, except at Chauga, the burials in the village area typically had a much lower incidence of grave goods. Mound burial appears to have been restricted to high-status adults, typically males, or young children, with adolescents excluded (Blakely et al. 1985; Kelly and Neitzel 1961, table 1; Stout 1972). The data suggest that once past early childhood, status had to be achieved, even among the elite, and the way this was done was by surviving adolescence. Comparison of the contemporary skeletal series at Beaverdam Creek and Rucker's Bottom, representing presumed elite and commoner segments of a single population, indicated significant differences in life-style. Skeletal pathologies in the Beaverdam Creek Mound sample were rare, and most of the population was in good health (Blakely et al. 1985). In the Beaverdam phase population at Rucker's Bottom, in contrast, most of the individuals exhibited some form of disease or pathology, something attributed to a poorer diet and a harder life than that enjoyed by the elites at the center (Weaver et al. 1985).

Zooarchaeological analyses at Rucker's Bottom, specifically of deer-element occurrence, indicated that choice cuts of meat were leaving the earlier village, and that this pattern ceased in the later occupation (Scott 1985, 662–64). This pattern presumably reflected the submission of tribute to a nearby center, such as the Beaverdam Creek site. Almost twice as many deer hindquarter as forequarter elements were found in the faunal samples from Beaverdam Creek, interestingly, supporting the inference that the elites at this site were receiving food from elsewhere (Reitz 1985, 424). The decline of the Beaverdam Creek center and the emergence of Rembert, which

is located much farther away, appears to have led to reduced tribute demands on the inhabitants of Rucker's Bottom.

The emergence of intensive agriculture in the Savannah River basin was recognizable not only from the presence of corn and other domesticates in the archaeological record, but also from evidence for land clearing and successional change in forest composition, which was noted at both Beaverdam Creek and Rucker's Bottom (Fish 1985, 411–16; Moore 1985, 690–92), and through stable carbon- and nitrogen-isotope analyses on human skeletal remains from the Irene site (Larsen et al. 1992; Schoeninger et al. 1990). At Irene extensive use of maize begins following the St. Catherine's phase, during the Savannah I/II and III phases. Following the transition to the Irene I phase, decreased use of maize and increased use of wild terrestrial resources is indicated, something that may have been brought about by the collapse of the Savannah III phase chiefdom and a corresponding reduction in tributary demands for the agricultural products necessary to finance elite agendas.

A highly diversified subsistence economy characterized the early Mississippian occupations at both Beaverdam Creek and Rucker's Bottom, suggesting the early Mississippian economy was less focused than that observed in later periods (Rudolph and Hally 1985, 446; Moore 1985, 689, 691; Reitz, Marrinan, and Scott 1987, 217; Scott 1985, 661). At Rucker's Bottom, at least, the adoption of a diversified diet may have been prompted by subsistence stress, something brought on, at least in part, by tributary demands on the local population. Increasingly focused subsistence, with greater use of deer and acorns, in contrast, was observed in the later village occupation at Rucker's Bottom, suggesting a concern with maximizing hunting return and carbohydrate production, perhaps to free labor for farming or defense (Speth and Scott 1985, 257). The extended occupation of the village may have also depressed local game resources, requiring more extended hunting forays. The climatic deterioration that occurred at this time also likely forced increasingly efficient use of wild plant and animal resources. Given repeated harvest shortfalls, the greater use of acorns that is observed may have been an attempt to supplement agriculturally produced carbohydrates. If local populations had indeed become relatively free of tributary obligations, less emphasis on the production of corn and greater use of wild food

resources may have been a result, a pattern that is also suggested at Irene at this time.

Conclusions: Organizational Cycling and the Abandonment of the Centers and Regions

The lessons about the causes of political change learned in the Savannah River basin should have applicability elsewhere in the Southeast, where similar events are observed during the Mississippian era. Climate, resource structure, and regional political geography all appear to have been important in shaping the history of the Savannah River chiefdoms. Although both environment and politics were important, neither environmental determinism nor historical forces alone is sufficient to fully explain, and help us understand, what happened locally. Monocausal explanations of complex culture change, in this view, although satisfying in their simplicity, are incomplete and hence suspect for the same reason.

So why was much of the Savannah River basin depopulated after ca. A.D. 1450? This abandonment, I argue, was caused by combination of factors, of which the size, location, and nature of the resources in the Savannah River basin compared to nearby drainages, as well as changes in the regional political landscape and variation in growing season rainfall, were among the most important. The rise of powerful Mississippian societies in the Oconee and Santee-Wateree drainages to the west and east of the Savannah, respectively, may have been the single most critical factor. During the period of initial Spanish contact in the mid-sixteenth century, the provinces of Ocute and Cofitachequi were present in these areas, and it is suggested that their strong rivalry and bitter enmity had an effect on the polities along the Savannah River, who were literally caught between them. Fortifications and other evidence for warfare appear at several sites along the Savannah in the century preceding the depopulation of the central and lower basin, suggesting political relationships between the region's polities may not have been the best.

At the same time that the political landscape was becoming increasingly hostile, food reserves throughout the region may have been severely stressed. These developments could well have been related and unquestionably would have put considerable pressure

on the agriculturally based chiefdoms in the Savannah River basin and beyond. Although Mississippian populations could have compensated for localized crop shortfalls by using wild plant and animal resources, increased use of the buffer zones during an era of conflict and competition would have likely been progressively more dangerous. Given an inferred lower overall population base (that is, when the size and resource structure of the Savannah is compared with that of nearby major drainages) and a position between major polities, over time the numerous small skirmishes resulting from use of the buffers would have been a war of attrition the Savannah chiefdoms could not hope to win. By the middle of the fifteenth century the situation was such that large areas within the basin were abandoned and remained unoccupied for almost two centuries. That populations did not return to the lower basin once rainfall conditions improved, something that happened at the end of the fifteenth century, highlights the importance of historical and political forces in shaping and then in maintaining this abandonment. Neither favorable climate nor vacant prime agricultural land could induce populations to return when the political landscape was such as to make this action untenable.

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