Chapter 1

People and Land

> [We] enterd and veued the cuntry therabowte, which is the fairest, frutefullest and plesantest of all the worlde, habonding in honney, veneson, wildfoule, forrestes, woodes of all sortes, palme trees, cipers, ceders, bayes, the hiest, greatest and fairest vynes in all the wourld with grapes accordingly, which naturally and withowt mans helpe and tryming growe to the top of okes and other trees that be of a wonderfull greatnes and height. And the sight of the faire medowes is a pleasure not able to be expressed with tonge, . . . and to be shorte it is a thing inspeakable, the comodities that be sene there and shalbe founde more and more in this incomperable lande, never as yet broken with plowe irons, bringing fourthe all thinges according to his first nature, whereof the eternall God endued yt.
>
> *Ribaut 1927:72–73*

So wrote Frenchman Jean Ribault of his first impressions of the new land of Florida upon landing at the mouth of the St. Johns River in 1562. The wonder of these first European settlers conveys a vivid impression of the lushness of the northeast Florida landscape, particularly in comparison with their European homeland, which had been under the plow for millennia. Yet this was not a pristine wilderness inhabited by an innocent and simple people. The northeast Florida environment, like that of most of the New World, had been inhabited for more than 10,000 years. Natural and human factors had already caused profound environmental changes. This continuing development gives the region its present appearance.

Purpose of the Study

In the last several decades modern society has begun to comprehend the importance of the environment as the foundation for continued human existence. We realize that people and nature are inextricably related, so much so that now the concept of people without environment is impossible. It remains, however, for us to understand the proper place of humans in the environment. We know that people affect their surroundings, whether they intend to or not, and that the environment influences the lifeways of people, providing opportunities as well as limits. Even so, we are just beginning to realize the implications of this current interdependence.

For example, the pristine environment, unspoiled by humans and existing in some perfect "natural" state, is usually considered to represent the state of the land at the time of the European "discovery" of the American continent. It is believed that in the absence of human intervention such an environment would have continued to exist in equilibrium, changing in replacement of individuals but remaining essentially the same in its "natural form."

The question of ecological stability versus change, of an ideal or correct environment versus a continually evolving and perpetually different environment, is one that can be best answered by a study of environmental history. It is a question of more than academic interest. Public agencies at the federal, state, and local levels are now largely committed to environmental protection in some form or other. While regulatory and incentive programs strive to influence environments, this costly exercise often lacks a sound foundation for making decisions. Environmental decisions can reflect public opinion more than scientific understanding of cause and effect.

A more thorough understanding of how environments function should form the basis for concepts that help determine how environments are "managed" in the future, that is, how planning decisions are made. Managers of public land have most recently embraced the concept of ecosystem management, recognizing that local landscapes are part of regional ecosystems and can't be managed independently. Planning strategies based on the goal of achieving an ideal, equilibrious environment, one that exists in a pristine state and that changes little over time, may well be "unnatural." This goal may be impossible to achieve; if such an environment never existed, it cannot be re-created. It is worth exploring in detail the basis for making environmental decisions and testing some of the underlying concepts about ecological change.

My goal is to use the northeast Florida environment as a historical case study to show how and why environment and people have developed through time. This book will explore the concept of nature undisturbed by people, the ways in which we affect other aspects of the environment and it affects us, and finally the question of proper role for humans in the environment: How do we make correct environmental decisions (Botkin 1990)? The value of environmental history for formulating and implementing public policy is that it explains how local environments achieved their modern form, what environmental processes operate within the region, what the consequences of environmental change have been in the past, and what the possible effects of naturally occurring or human-induced environmental change might be in the future.

Like any other region, modern northeast Florida is the product of a long human and natural history. Its appearance is due to a complex interaction of physical, biological, and cultural factors operating over millennia. What makes northeast Florida of special interest is the comprehensive documentary record of human settlement and landscape modification beginning at such an early date. Northeast Florida may be considered a historical environmental laboratory in which a number of unwitting environmental experiments have been conducted. Each successive pattern of settlement and adaptation in the region, beginning more than 10,000 years ago, may be seen as a manifestation of the complex interactions of people and environment, of culture and nature.

Were this a perfect laboratory, all variables would be held constant save one under investigation; in the real world, the problem is not so straightforward. Most relevant environmental factors are dynamic; on analogy, the laboratory itself changes, both as a result of large-scale and long-term changes in environment, and as a result of previous experiments. To some extent, it is possible to control many of these variables: for example, by comparing Spanish and English adaptations in the same place and close together in time while environmental factors remain relatively constant. In certain cases it will also be possible to observe how persistent and stable cultural patterns are influenced by environmental change. For instance, prehistoric Indians of northeast Florida adapted successfully to new hydrologic conditions associated with rising sea level about 5,000 years ago.

Environmental history has been of interest to geographers, biologists, ecologists, anthropologists, archaeologists, human ecologists, and landscape specialists, all of whom have contributed to a full and diverse literature over the last several decades. Historians, who should have been active participants in this dialogue, have only recently recognized the importance of environment in understanding history.

There is a pressing need to understand local environments in sufficient detail to anticipate the consequences of our decisions and actions. The historical record can be of use in showing the impact on the environment that past activities have had recently and over the long term. The historical perspective demonstrates that environments are dynamic and provides information not otherwise available on how human ecosystems have reacted to major modification. Such activities as burning, clear-cutting, plowing, farming, dredging, filling, ditching, and draining are all evident in the historical record, and in many cases it is possible to locate and examine areas identified in historical sources to observe their present condition and determine the long-term effects of earlier actions. By this method a fairly complete environmental history can be constructed, but more important, an inventory of local environmental processes and their effects becomes available.

Anthropologists were the first to pay attention to how people fit in the environment; they did so around the beginning of the twentieth century, when some of the last surviving non-Western societies in North America were still available to be studied. Indeed, for the great ethnographers such as Franz Boas and Clark Wissler, one function of anthropology was to record the last surviving elements of aboriginal cultures before they were lost to acculturation. Another function, of course, was to explain by some means how such cultures operated, how non-Western people lived. Anthropological theory has been built on examples of contemporary and antiquarian cultures much more intimately related to their environments than our own culture.

American anthropologists have had the advantage of observing the vast range and great complexity of Native American culture over two continents. The "history" of Indian people was largely ahistorical; because there were no written records for the millennia before European contact, anthropologists could not base a historical or social analysis on significant individuals or events. The most obvious explanation for diversity in institutions and technology was environment.

In the 1950s, Julian Steward laid the ecological foundation for analyzing and explaining human behavior. A cultural evolutionist in the Marxist tradition, like Leslie White (1959), Steward recognized the primacy of the means of production. While it was generally recognized that most cultural elements were related somehow to environment, Steward saw that the elements of subsistence and economic activity—what he called the culture core—were fundamentally related to environment and should form the first level of analysis. Understanding the technology and behavior of people in relation to producing food and otherwise gaining a living reveals the most fundamental relationships between nature and culture. In addition, Steward argued, the factors of environment, to which technology is adapted, largely influence the organization of social institutions. Size and complexity of social groups, the seasonal patterns of movement and settlement, and the intensity of political organization and control can all be seen to be influenced by environmental factors. Finally, in Steward's method, it is possible to ask how the most abstract cultural elements—ideological elements such as religion, ritual, and philosophy—fit into the ecological cultural pattern. Steward's cultural ecology is recognized as a fundamental contribution to anthropological theory and provides a powerful basis for explaining human behavior.

Because anthropologists did not study Euro-American culture until recently, and because historians did not concern themselves with the nature of American Indian culture except as it affected the expansion of the frontier, the possibility that environment played a fundamental role in the history of the Americas since the time of European contact occurred to only a few historians, among whom the best known are Frederick Jackson Turner and William Prescott Webb.

The first historian to recognize the power of the theory developed by Steward and applied by other anthropologists was William Cronon. His *Changes in the Land, Indians, Colonists, and the Ecology of New England,* published in 1983, must be recognized as the first successful ecological history. Spanning two centuries, generally between 1600 and 1800, and restricted to New England, his study was firmly grounded in the fields of history, ecology, ecological and economic anthropology, and ethnography. By contrasting Native American and colonial environmental relations, Cronon explores the ecological dialectic: "Environment may initially shape the range of choices available to a people at a given moment, but then culture reshapes environment in responding to those choices. The reshaped environment presents a new set of possibilities for cultural reproduction, thus setting up a new cycle of mutual determination. Changes in the way people create and re-create their livelihood must be analyzed in terms of changes not only in their social relations but in their ecological ones as well" (1983:13).

Cronon's thesis is that all human groups consciously change their environments to some extent; the dynamic and changing relationship between environment and culture is as apt to produce stability as not. A historical account of environmental change is sufficient to demonstrate the fundamental weakness of the functionalist explanation of culture, which says that cultural traits exist for the purpose of maintaining a stable system of adaptation. In the sense that there is little stability to the environment to which a culture is adapted, such notions as self-regulating systems, homeostasis, and equilibrium can have meaning only when the analysis is ahistorical. As Cronon demonstrates, seventeenth- and eighteenth-century environmental change in New England was so profound that the Indians' way of life simply became impossible. As we will see in northeast Florida, major environmental change, even prior to the coming of the Europeans, was a common phenomenon; the success of a culture may well be measured not so much in terms of its stability but rather in its ability to adapt to instability.

By now, environmental historians have defined their subject as the dialectic between culture and nature: how environment affects people and how people affect environment. Certain approaches like narrative accounts of past environments (Stilgoe 1982), history of the conservation of environmental movements (Petulla 1977), and local ecological analysis without reference to larger economic relationship (Cronon 1991) have been explored. But environmental historians have largely adopted the cultural materialist theory of anthropologists, with common reference to Steward, and have rejected the ahistorical idealist theory of the functionalists. And finally, environmental historians have even begun to suspect that their work might be relevant to policy makers.

Environmental history is an uneasy combination of natural and social science; scientists and historians come to the same domain with quite different methods and theories about how the world works. Environmental history is more than interdisciplinary; it crosses the fundamental boundary between humanities and science, and hopes to inform not only scientists and historians but also those who make decisions about the contemporary environment (Liebhardt 1988:23–24). One means of advancing this possibility is by using methods of analysis that are compatible with historical as well as scientific study; that such methods would prove useful in making planning decisions would be an added benefit.

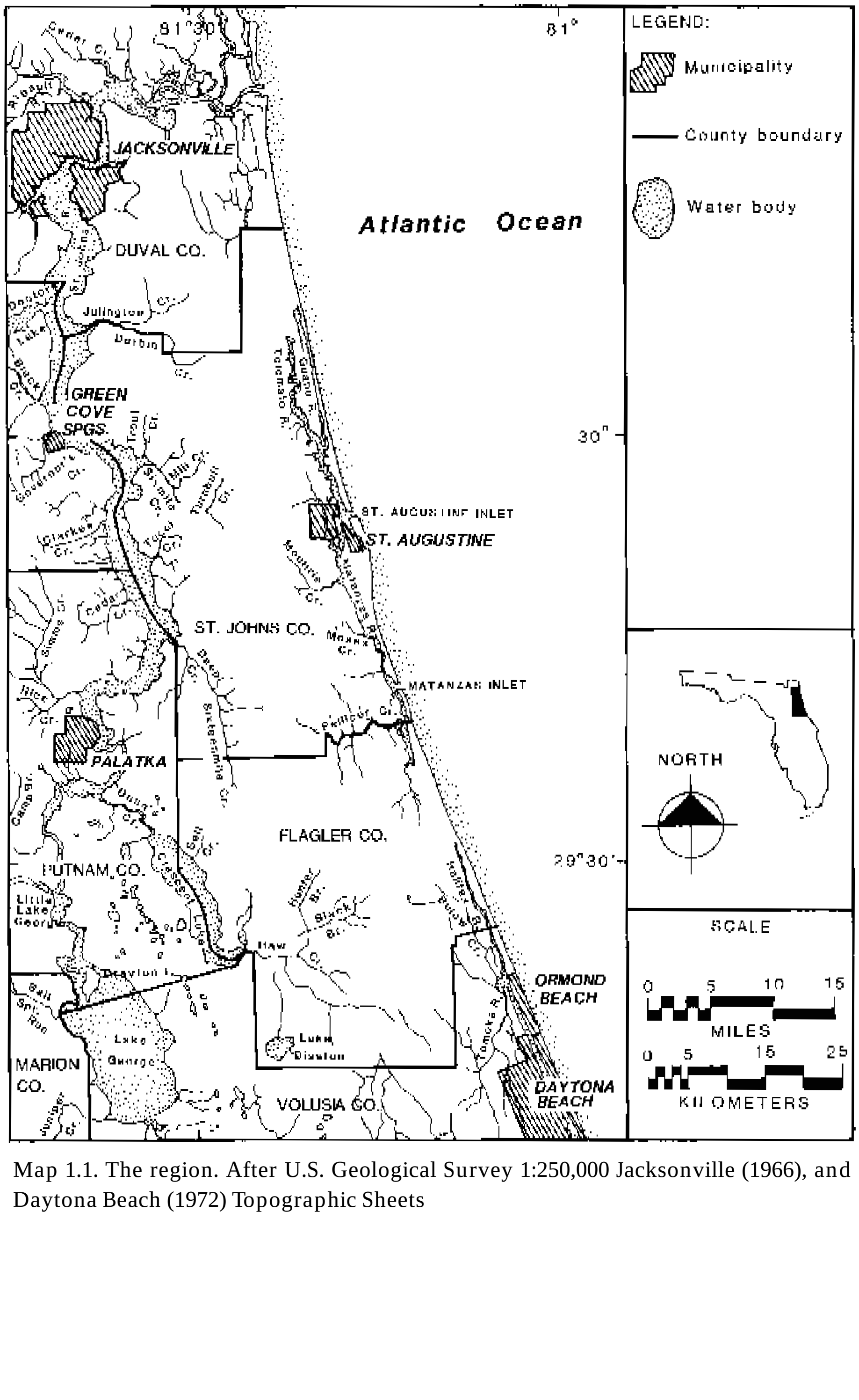
A recent consideration of the fundamental question of the relation between people and environment is Daniel Botkin's *Discordant Harmonies* (1990). Botkin is more concerned with how people have thought about environment than how they have specifically changed it. Despite dramatic improvements in scientific measurement and interpretation of environmental processes within this century, Botkin argues that we make public and scientific decisions about the environment on the basis of prescientific myths based mostly on a mechanistic understanding of the universe. Such concepts as "balance of nature" and "environmental equilibrium" have little basis in reality, yet they continue to underlie our modern thinking about how the biosphere operates and how it could be managed.

This study of northeast Florida relies on the ecological planning methods of Ian McHarg (1969), comprising analysis of a region by a series of consistently scaled maps, each depicting a different natural or cultural factor. By this means, the interrelated aspects of people and environment that comprise a complex system can be disassembled, understood in a simple way, and reassembled in a variety of complex ways. The extra dimension of historical time provides some additional complications, as the distribution and character of some factors change over time, but it is also the key to constructing a meaningful environmental history. Ecological planning by this overlay method allows rational planning decisions to be made about the future on the basis of relevant environmental factors that provide opportunities and constraints. It is a predictive exercise, based on the assumption that future impacts of a particular action can be understood in advance rather thoroughly and somewhat accurately. To apply the same method backward in time is an explanatory exercise. The relationships between land and people are still assumed to be primary, but the purpose of the analysis is to understand which environmental factors provided opportunities and constraints for which activities at different historical periods and to arrive at reasonable explanations for certain behaviors and events.

The scope of the study is northeast Florida from before the time of the first inhabitants to the formation of contemporary landscapes in the 1930s or so. It is a basic assumption of the study that changes in the environment were caused partly by people and that people changed because of the dynamic factors of environment, among other reasons. In addition, an environmental historical analysis should not only explicate but also explain, tell not only what happened but also why. And finally, if we can understand how people and environment affected each other in the past and do so in the present, we should be able to project those important relationships into the future and improve our ability to make planning decisions.

The Region

The selection of any region for study is a decision about inclusion and exclusion. Regions are, in a sense, arbitrary boundaries imposed upon continuously variable landscapes at some convenient scale. Northeast Florida, as it is defined here, includes primarily the basin of the northward-flowing St. Johns River from Lake George to the mouth, as well as the adjacent Atlantic Coast and the intervening coastal plain (map 1.1). This area, measuring roughly 120 miles north-south and between 25 and 60 miles east-west, about 5,000 square miles (roughly the size of Connecticut), takes in



Map 1.1. The region. After U.S. Geological Survey 1:250,000 Jacksonville (1966), and Daytona Beach (1972) Topographic Sheets

Fig. 1.1. View of the St. Johns River at Fort Caroline. Florida Photographic Archives.

most of the significant historical developments in Florida of the sixteenth, seventeenth, and eighteenth centuries. Before European contact, it was also a cohesive culture area characterized by a range of riverine and coastal adaptive strategies practiced by Archaic, Woodland, and Mississippian period aboriginal groups, lasting some 10,000 years.

For convenience of mapping, the boundaries have been chosen as 29 degrees latitude on the south, 30 degrees 30 minutes latitude on the north, 81 degrees 45 minutes longitude on the west, and the Atlantic Ocean on the east. This area includes all of the floodplain and most of the drainage basin of the lower (northern) St. Johns River (fig. 1.1) as far upstream as the southern edge of Lake George, the sandy, relict Pleistocene terraces of the coastal plain east of the St. Johns River, the intermittent series of coastal lagoons, and the Atlantic coastline. The mainland part of northeast Florida consists of a broad peninsula bounded on the west by the St. Johns River Basin and on the east by the Atlantic Ocean. For the longest part of human occupation in the area, these bodies of water were the primary focus of settlement, transportation and resources. As it remains to some extent today, the intervening sandy mainland was sparsely occupied.

This northern portion of the St. Johns differs from its more southern course in being quite broad, navigable, and bordered by rich soils on adjacent uplands. As long ago as 5,000 years, aboriginal cultural patterns reflecting distinctive modes of subsistence, settlement choice, and technology could be recognized in northeast Florida. The region corresponds well with the territory of the Eastern Timucua Indians, as recorded in the middle of the sixteenth century. Throughout the First Spanish Period, between 1565 and 1763, effective European control of the entire Florida peninsula rarely extended beyond the boundaries of the study area. The British, upon acquiring Florida from the Spanish in 1763, fixed the Indian boundary north of Lake George, and although this line was not permanent, with the exception of the ill-fated New Smyrna colony on the coast, little British settlement in East Florida occurred south of Lake George. Between 1783 and 1821, when the Spanish again controlled Florida, patterns of settlement characteristic of northeast Florida extended farther south along the river and the coastal lagoons. It was not until the beginning of the twentieth century, however, that significant settlement was undertaken in the central and southern parts of the state. By this time northeast Florida no longer contained the majority of population in Florida, but it remained a recognizable culture area.

The Geology

Northeast Florida lies entirely within the Coastal Plain physiographic province of North America. Although basement rocks of pre-Cenozoic age are present at great depth, surface and bedrock features are restricted to Tertiary and Quaternary expressions. Surface landscape features of northeast Florida are mainly determined by geological processes of marine terrace development that occurred perhaps as early as Miocene times but definitely during the Pleistocene Epoch. In general, the region exhibits a series of flat, sandy plains of differing elevations, believed to have been formed by distinct episodes of advance and retreat of the seas. As the climate cooled over geologic time, glaciers locked up increasing amounts of seawater, and sea level became relatively lower with respect to the land surface. As the cli-

Table 1.1. Pleistocene marine terraces in northeast Florida

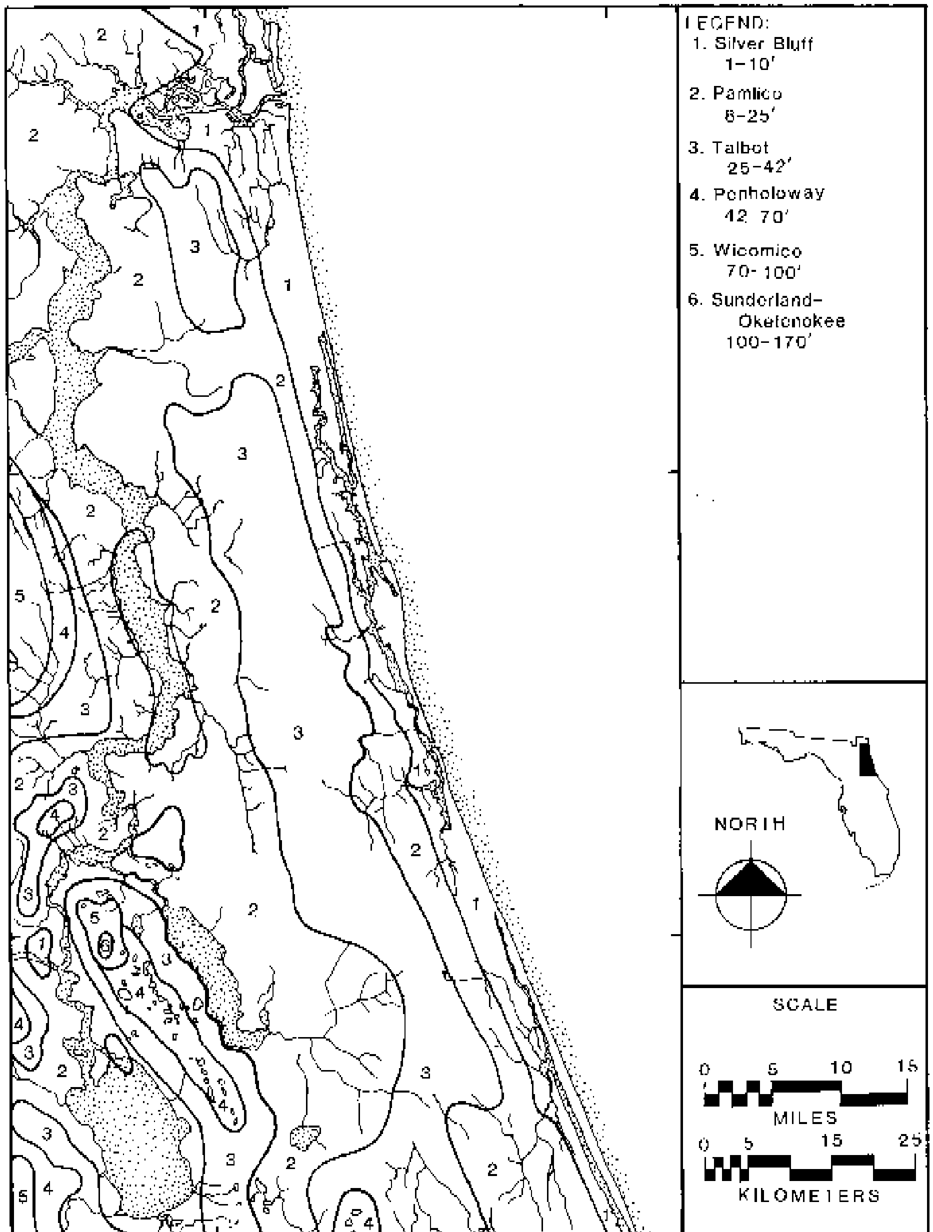
Terrace name	*Approximate altitude of shoreline (feet)*	*Tentative age*
Coharie	215	Yarmouth
Sunderland	170	
Wicomico	100	Sangamon
Penholoway	70	
Talbot	42	
Pamlico	25	Interglacial recession in Wisconsin glacial
Silver Bluff	5–10	Interglacial recession in Wisconsin glacial or Recent

Source: After Bermes, Leve, and Tarver (1963:38).

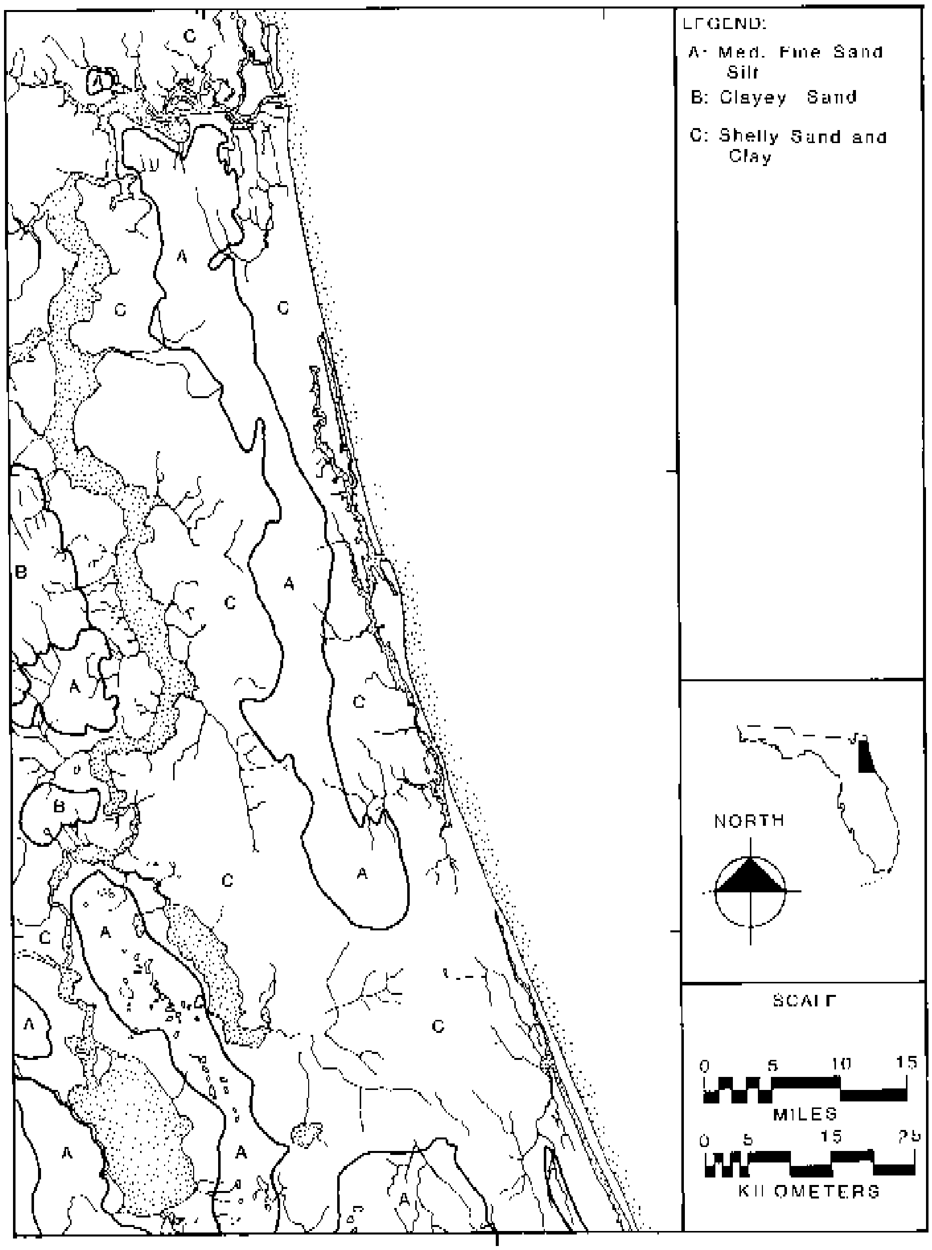
mate warmed, glaciers melted, sea level rose (often far above its present elevation), and coastal processes resulted in the formation of coast-parallel terraces.

The mechanics of terrace formation are presently being reinterpreted. The classic explanation by Cooke (1939, 1945) is that still stands of sea at certain levels were accompanied by wave and current action that formed a gently sloping or flat plain offshore, marked at the shoreline by a wave-cut bluff or low scarp. Coastal barrier islands could be associated with such abandoned shorelines and would provide some minor local relief. Cooke recognized seven, possibly eight, marine terraces in Florida; seven of these are present in northeast Florida (table 1.1). Distribution of the terraces designated by Cooke, as mapped by later authors (Bermes, Leve, and Tarver 1963), is shown in map 1.2.

In general, the pattern these form is like two broad series of steps, one rising from the Atlantic Coast and descending to the basin of the St. Johns River, the other ascending to a somewhat higher level on the western side of the river toward the middle of the Florida peninsula. Age of the terraces increases with elevation, so that near the Atlantic Coast and along the St. Johns River landforms and soils are relatively young. On the ridge between the river and the ocean and west of the St. Johns, soils have had somewhat more time to develop. Nonetheless, all of the region's soils are sandy, not unlike modern beach sand, and have little capacity to hold nutrients. The character of these sediments and their general distribution is shown in map 1.3, which illustrates the coast-parallel orientation of bands of different



Map 1.2. Marine terraces. After Bermes, Leve and Tarver (1963: fig. 3) and Healy (1975)



Map 1.3. Subsurface sediments. After Florida Bureau of Geology (1978, 1979)

types of subsurface sediments, as well as by the fact that the more recent coastal deposits contain a higher proportion of shells that have not yet decomposed.

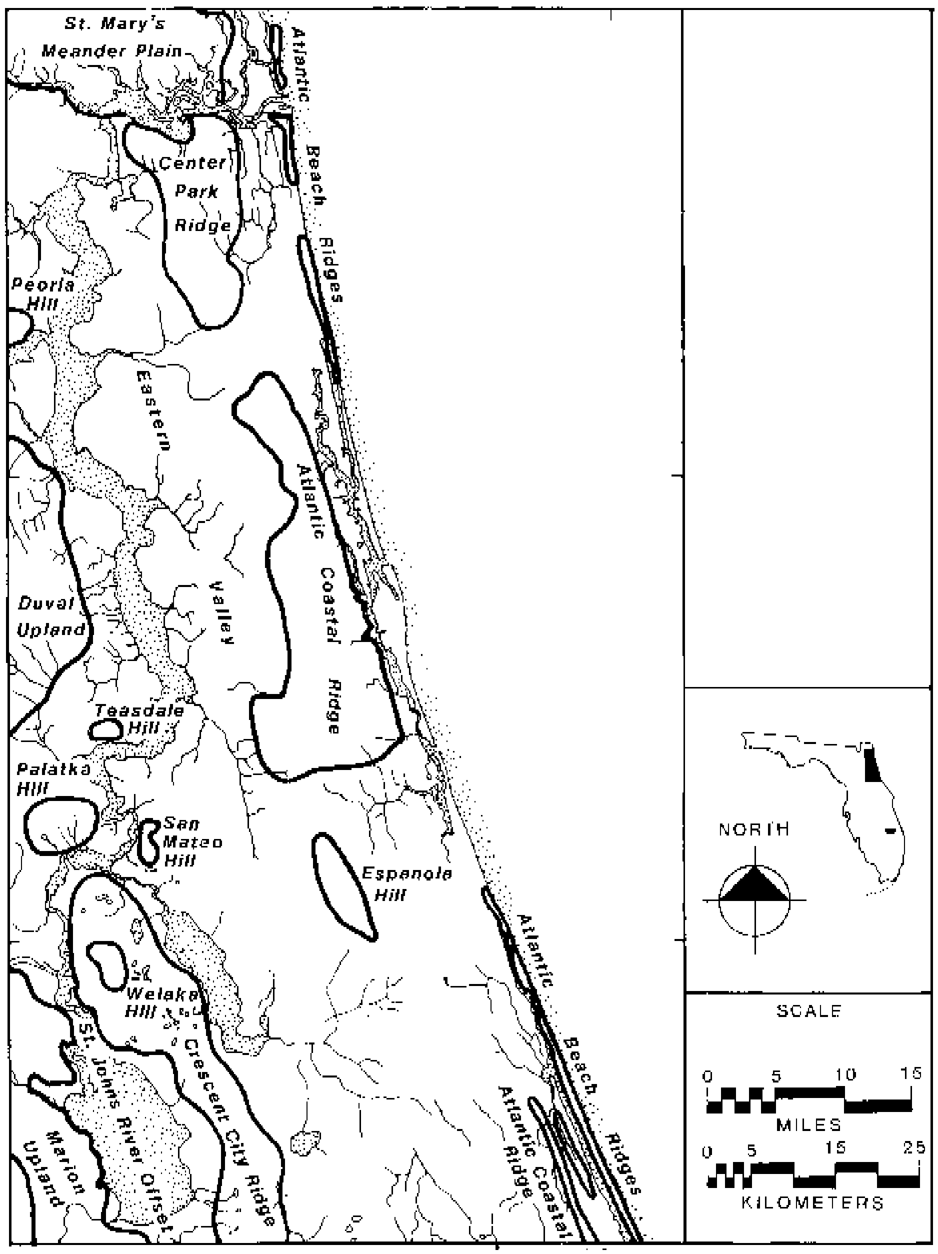
The more modern interpretation of the formation of marine terraces has been developed by geologists in Georgia, where the same features are present but contemporary coastal processes associated with the development of beach, barrier island, and lagoon complexes are more evident. According to the model developed by Hoyt and others (Hoyt, Henry, and Howard 1966; Hoyt 1967; Hoyt and Hails 1974), the Pleistocene coastal deposits accumulated in barrier island environments, and the "terraces" are really former salt marsh lagoons. Regardless of the model of terrace formation that is followed, there is no doubt that the regional landscape is geologically young and coastal in origin.

The Physiography

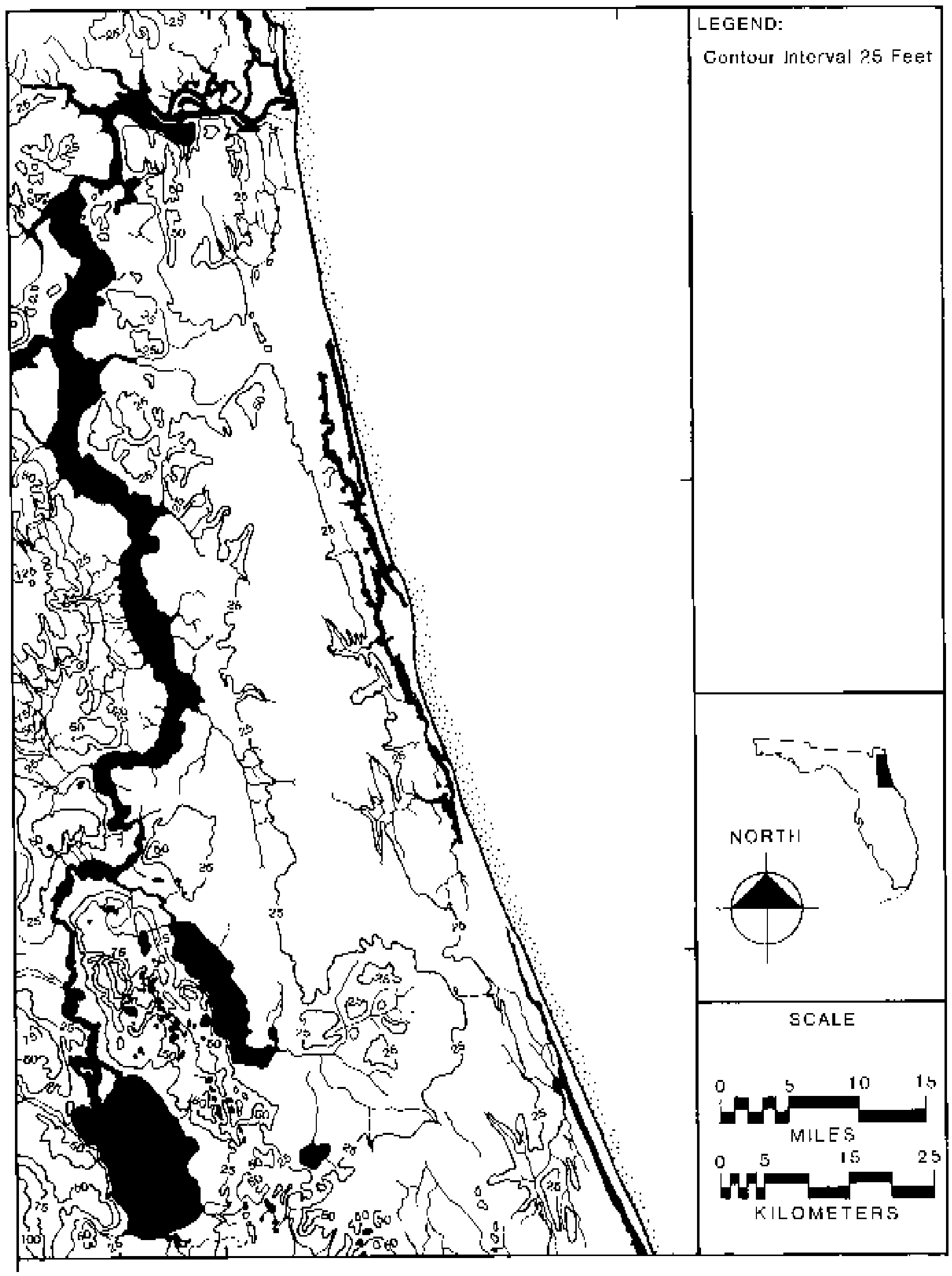
The basic character of the regional physiography is illustrated in map 1.4, representing the later effects of erosion and redeposition on the originally continuous and level terraces. This map of physiographic divisions provides a convenient but broad-scale identification of surface features. Certain portions of the ridge associated with the Penholoway Terrace have been removed by stream erosion, and the remnant elevations are assigned to the Center Park Ridge, the Atlantic Coastal Ridge, and Espanola Hill. The St. Johns River Basin is contained within the Eastern Valley north of Palatka; south of this point the river is much narrower, following a physiographic division known as the St. Johns Offset. East and just north of the offset is an area of high elevation containing Teasdale Hill, Palatka Hill, San Mateo Hill, and the Crescent City Ridge, within which an area above 100 feet in elevation is termed Welaka Hill. More accurate representations of these divisions are visible in map 1.5, a topographic map of the region. While these physiographic divisions may appear subtle compared with the more dramatic surface expressions common in areas with more relief, they exhibit significant landscape differences and were clearly recognized as distinct by historic and prehistoric populations of northeast Florida.

The Soils

Soils reflect in great detail the types of landscape characteristics that influence land use in all periods. Some means of summarizing the important characteristics of soils is necessary, because at the level of soils series or type there is simply too much information available for a region of 5,000 square miles. Modern soil classification is hierarchical; its smallest unit is the



Map 1.4. Physiographic divisions. After Puri and Vernon (1964: 13.15, fig. 6)



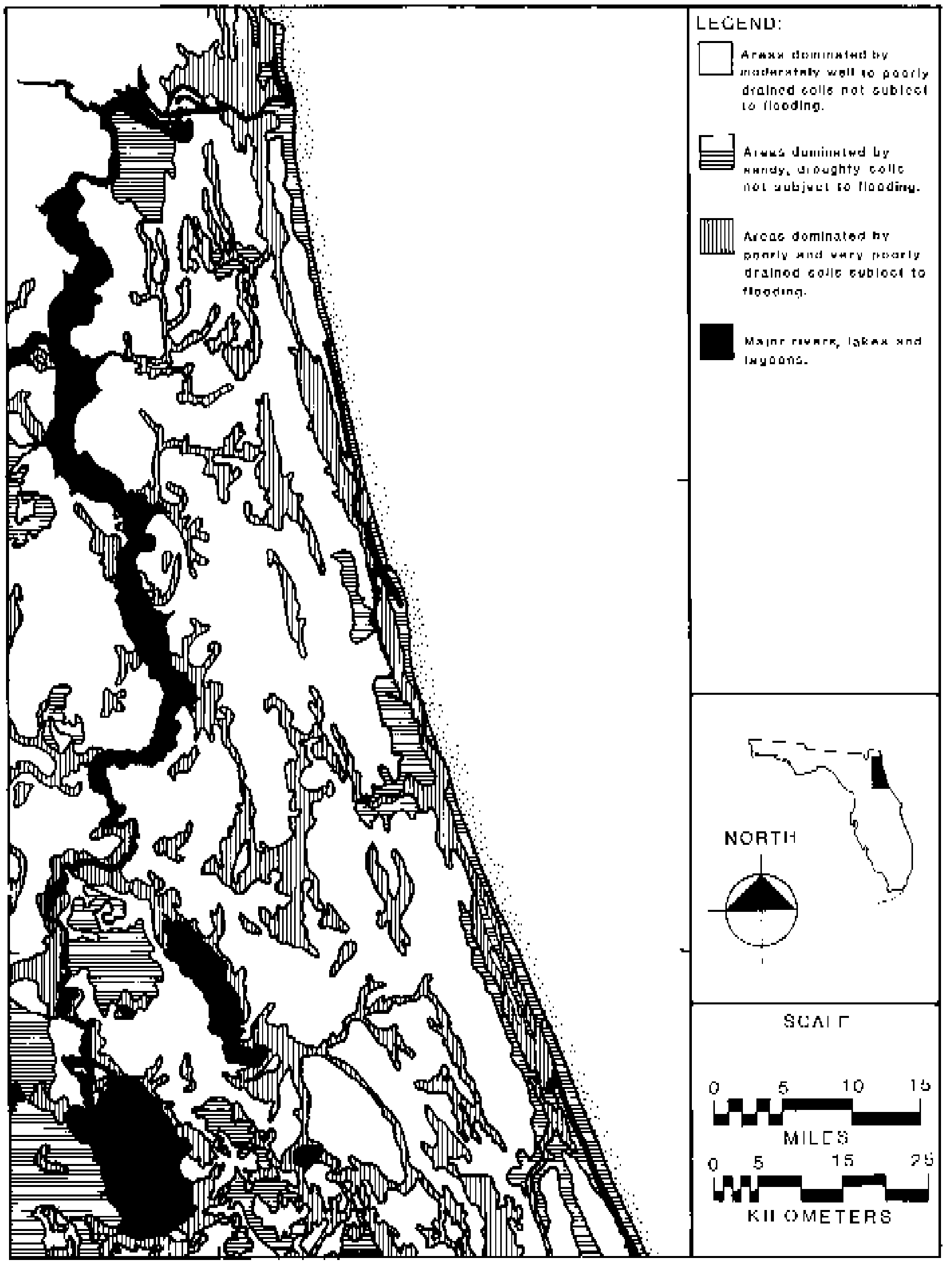
Map 1.5. Topography. After U.S. Geological Survey (1966, 1972)

pedon, defined as any mappable exposure of soil. Areas of identical soil characteristics comprise a soil type, which is usually defined at the county level, although adjacent counties may share soil types or series of types. The next largest classification is the *association,* a commonly occurring group of types that exhibit patterned landscape variation. Even this level of information may prove too detailed for a region the size of northeast Florida.

For purposes of mapping and analysis soil associations have been further grouped into three broad types. Map 1.6 shows these broad categories in northeast Florida, combinations of soil associations based on drainage characteristics for the eight counties within the region as classified in the Florida General Soils Atlas (Florida Division of State Planning 1975). Table 1.2 presents the individual soil associations for each county in each mapping category. Analyzing this information from the Florida Division of State Planning reveals more detail than has been revealed by any other mapping category yet presented.

Map 1.6 shows in black the areas of permanently flowing or standing water, rivers, lakes, and lagoons. The vertical lines represent areas dominated by poorly and very poorly drained soils subject to flooding—freshwater swamps, floodplains, and coastal marshes—and are closely associated with permanent bodies of water. The horizontal lines represent the opposite extreme of drainage, areas dominated by sandy, droughty soils not subject to flooding. Such soils are generally distributed along the coast, where they represent geologically young sediments with poorly developed soil profiles, and also occur adjacent to the St. Johns River, especially on the higher terraces. Finally, unshaded portions of the map show areas dominated by moderately well to poorly drained soils not subject to flooding. These areas comprise most of the interior portion of the region and are interrupted by the other two drainage types in regular patterns.

It is useful to note not only the specific occurrence of a particular drainage type but also the relationship between drainage types. For example, bodies of water have been attractive for settlement throughout prehistoric and historic times, yet wherever they are bounded by poorly and very poorly drained soils subject to flooding, certain land uses are unlikely to have occurred. Alternatively, the combination of water bodies and sandy, droughty soils indicates a higher settlement potential for some periods, but agricultural activities on such land would probably be unsuccessful. Finally, those parts of the St. Johns River and the coastal lagoons that are bordered by moderately well to poorly drained soils not subject to flooding provide the most attractive combination of landscape features for settlement and many types of land use for a wide range of technologies.



Map 1.6. Soils by drainage type. After Florida Division of State Planning (1975)

Table 1.2. Soil associations comprising drainage categories

Areas dominated by sandy, droughty soils not subject to flooding
Fripp-Aquic Quartzipsamment association (Duval, St. Johns Cos.)
Lakeland-Tavares, variant association (Duval Co.)
Paola-Pomello association (St. Johns, Flagler, Volusia Cos.)
Palm Beach-Canaveral association (St. Johns, Flagler, Volusia Cos.)
Candler-Tavares association (St. Johns, Flagler Cos.)
Alpin-Blanton association (Clay, Putnam Cos.)
Astatula association (Putnam, Marion, Lake Cos.)
Candler-Apopka association (Putnam, Marion Cos.)
Astatula-Tavares association (Volusia Co.)
Astatula-Apopka association (Lake Co.)

Areas dominated by moderately well to poorly drained soils not subject to flooding
Tavares, variant-Leon association (Duval, St. Johns, Clay Cos.)
Mascotte-Leon-Surrency association (Duval, St. Johns, Clay, Putnam Cos.)
Leon-Pomello, variant-Rutlege association (Duval, St. Johns Cos.)
Scranton, variant-Leon-Rutlege association (Duval Co.)
Wabasso, Thermic variant-Leon association (Duval, St. Johns Cos.)
Stilson-Pelham-Mascotte association (St. Johns, Clay, Putnam Cos.)
Adamsville-Immokalee-Pompano association (St. Johns Co.)
Myakka-Wauchula-Placid association (St. Johns, Flagler, Putnam, Volusia Cos.)
Olustee variant-Placid-Myakka association (St. Johns, Flagler, Putnam Cos.)
Meggett variant-Wauchula-Chobee association (St. Johns, Putnam Cos.)
Chipley-Leon-Osier association (Clay, Putnam Cos.)
Tavares-Myakka-Basinger association (Clay, Putnam, Volusia Cos.)
Olustee-Rutlege-Leon association (Clay, Putnam Cos.)
Myakka-Pomello-Basinger association (Flagler, Volusia Cos.)
Wabasso-Myakka-Felda association (Flagler, Putnam Cos.)
Meggett-Felda association (Flagler Co.)
Bladen, variant-Wauchula-Chobee association (Flagler Co.)
Pomello-Satellite-Immokalee association (Putnam, Volusia Cos.)
Pomello-Myakka association (Putnam Co.)
Myakka-Sellers association (Putnam, Marion Cos.)
Copeland-Wabasso association (Volusia Co.)
Pomello-Paola association (Lake Co.)
Myakka-Placid-Swamp association (Lake Co.)

(continued)

Table 1.2—*Continued*

Areas dominated by poorly and very poorly drained soils subject to flooding
Chobee, Thermic variant association (Duval Co.)
Freshwater swamp association (Duval, St. Johns, Clay, Flagler, Putnam, Volusia Cos.)
Saltwater marsh association (Duval, St. Johns, Flagler, Volusia Cos.)
Pompano-Anclote association (St. Johns, Flagler Cos.)
Dredge spoil (St. Johns Co.)
Brighton association (Clay, Flagler, Putnam, Volusia Cos.)
Iberia, variant-Manatee-Felda association (Flagler Co.)
Placid-Myakka association (Volusia Co.)
Iberia, variant-Manatee-Felda association (Volusia Co.)
Basinger-Myakka association (Marion Co.)
Sellers-Pamlico association (Marion, Lake Cos.)
Montverde-Ocoee-Brighton association (Lake Co.)

Source: After Florida Division of State Planning (1975).

The Climate

The climate of northeast Florida is classified as humid subtropical and is characteristic of the Gulf and Atlantic coastal plain of the southeastern United States. Rainfall averages about 52 inches per year, decreasing slightly toward the north at Jacksonville to around 50 inches per year. Within the region rainfall is slightly heavier along the immediate coast. The majority of precipitation falls in the summer, from June through September, when showers and thunderstorms are common, and it averages between six and eight inches per month. In the winter, rainfall is more moderate; two to four inches per month is normal.

The monthly extremes follow the same annual pattern; maximum recorded rainfall per month ranges from 5.3 inches in December (1941) to 15.67 inches in July (1960). All months other than June through September have experienced minimum precipitation of less than one inch. The minimum recorded for the summer rainy months is less than four inches (Bradley 1972:16). Precipitation in the form of snow and ice is negligible. Traces were reported at Jacksonville in 1955, 1961, and 1962, and measurable amounts, less than two inches, were recorded in February 1899 and 1958. Snow produced a white Christmas in 1989, when more than three inches fell in some parts of Jacksonville (Henry, Portier, and Coyne 1994: 135).

Throughout Florida, warm-season rainfall is at its maximum near the coast, where surface heating and sea breezes interact. The typical summer rainfall pattern includes frequent afternoon thunderstorms and occasional hurricanes or tropical storms. The proportion of annual rainfall attributable to thunderstorms is difficult to evaluate, but such storms occur approximately 70 days per year, and about 70 percent of this total occurs during the summer months; summer thunderstorms may drop two to three inches of rain in a few hours. As much as 30 percent of the total annual rainfall can be expected from hurricanes and tropical storms. Over the period 1891–1980, for the entire state of Florida 10.7 hurricanes and 10.6 tropical storms were reported per decade, an average of about one per year for each type. Major storms of this type are not as common in northeast Florida as in south Florida.

Seasonal variation in temperature follows that of rainfall. A summer period of high temperatures occurs between June and September, and a cooler period extends from December through March; these are separated by more moderate transitional seasons. The annual mean temperature for Jacksonville is just above 68 degrees Fahrenheit. Average daily summer temperatures are between 70 and 90 degrees; highest temperatures are reached in early afternoon but are frequently reduced by afternoon thunderstorms. In winter, average daily temperatures range from 45 to just below 70 degrees.

Extremes of temperature on an annual basis are consistent with this pattern. Between 1940 and 1970, five months experienced maximum extreme temperatures above 100 degrees, May through September. Temperatures below freezing were experienced in four months, November through February. The lowest of these was 12 degrees, recorded in December 1962 (Bradley 1972:16).

Freezing temperatures may be expected about 12 times per year, but in most such cases the temperature will rise above 32 degrees sometime during the day. Only on five days during the period of record (since 1851) has the temperature remained below freezing for an entire 24-hour period. Several of these occasions mark memorable and agriculturally damaging freezes, like those of 1835 and 1899. The earliest recorded date of freeze is November 3 (1954) and the latest recorded date of freeze is March 31 (1964) (National Oceanic and Atmospheric Administration 1978).

Of all the continental states, Florida is most exposed to the risk of severe tropical storms. Bounded on the west by the Gulf of Mexico and on the east by the Atlantic Ocean, the peninsula is directly in the path of many storms of tropical origin. Between 1886 and 1992, 85 hurricanes struck Florida

(Henry, Portier, and Coyne 1994:207). Hurricanes are most frequent in the southern part of the state, but no part is immune from their damage. Several means are used to predict the probable point on the coastline where a hurricane may strike land.

The coast of the United States from Texas to Maine has been divided into equal segments 50 nautical miles in length for purposes of assessing storm probability and season. In northeast Florida (Sector 33) there is a 5 percent probability that a tropical storm will occur and a 2 percent chance a hurricane will occur in any one year. A tropical storm or cyclone has wind speeds between 39 and 73 miles per hour, a hurricane between 74 and 124 miles per hour. Great hurricanes, storms with winds in excess of 125 miles per hour, have almost no probability of occurring in northeast Florida. Of all of Florida, the northeast part of the state has the lowest hurricane risk. In fact, between St. Augustine and Jacksonville no hurricane was noted in official records until September 1964; however, hurricanes are suggested by historical records in 1565 (Henry, Portier, and Coyne 1994); 1765 (De Brahm 1773:39); 1837, 1848 (Ludlum 1963:26); and 1894 (Graham 1983:204). The hurricane of 1565 played a crucial role in Spain's successful defeat of a French force near St. Augustine (Ludlum 1963:8). Tracks of five hurricanes passed through the region in the twentieth century, but none caused great damage (Doehring, Duedall, and Williams 1994:99–108). Before 1964, Jacksonville was the only large city on the Atlantic Coast south of Boston that had never experienced an officially recognized storm of hurricane intensity (Bradley 1972:4).

The earliest and latest dates of tropical storm or hurricane occurrences between 1886 and 1970 in northeast Florida are June 6 and October 17. These dates are not inconsistent with other parts of the Florida coast and generally reflect the hurricane season.

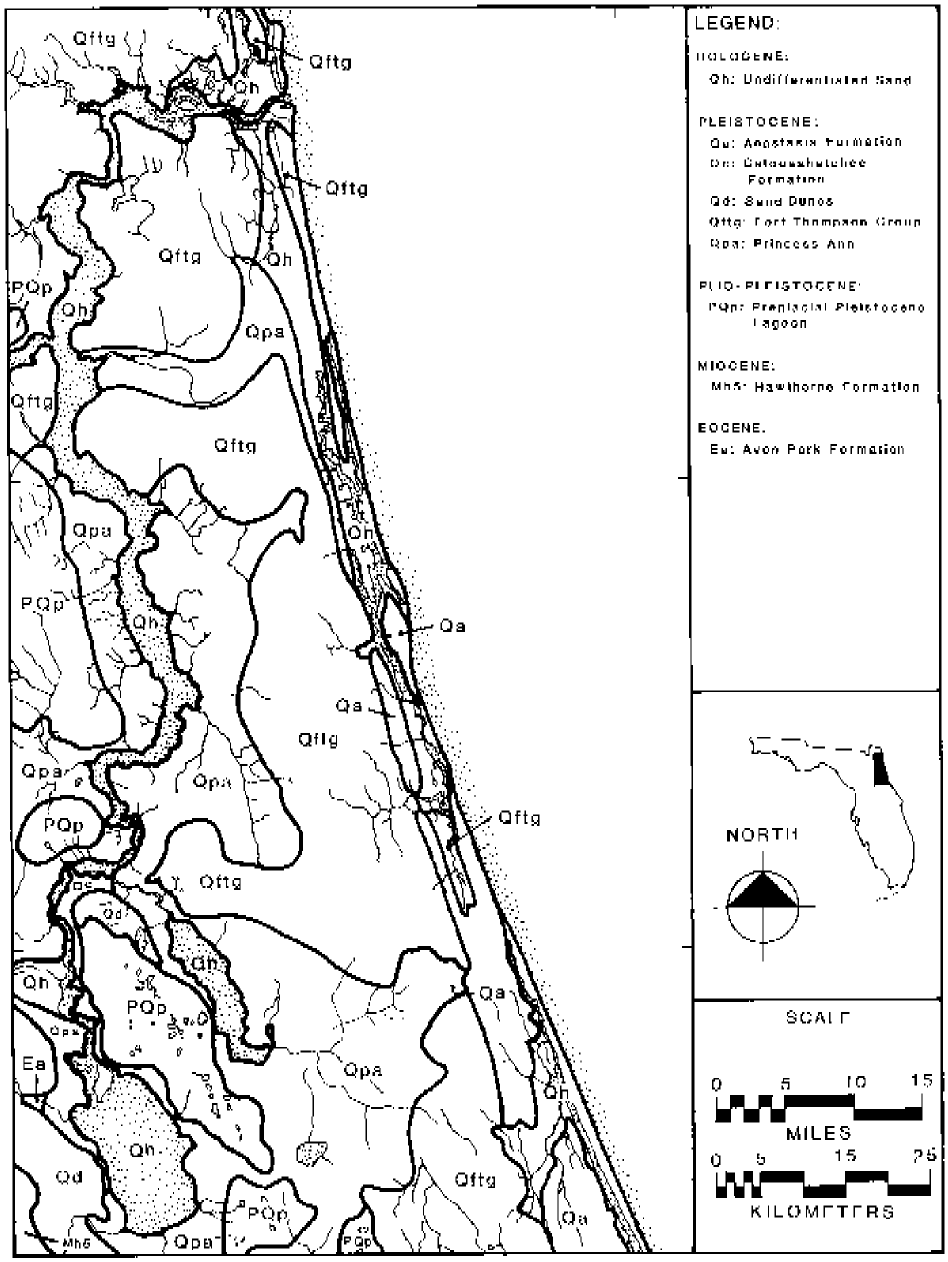
Although the probability of a hurricane or tropical storm affecting northeast Florida in any year is quite low, these storms are among the most forceful and potentially damaging natural phenomena in the area. The massive energy of hurricanes is primarily felt in winds that may often exceed 100 miles per hour and that are believed for certain storms to have reached more than 200 miles per hour. Such winds will often break off trees high above ground level and cause considerable damage to buildings and other structures. Rainfall during a hurricane is heavy but might not exceed that likely to be dropped during a typical thunderstorm. Some hurricanes are accompanied by very little rain. By far the most potentially damaging characteristic of severe tropical storms is storm surge of seawater along the coast. Depending on the time of the hurricane within the daily and annual tidal cycles, as well as the speed of the wind, storm surge can be very high, sometimes above 10 feet. In such an instance, the coastal region to an elevation of 10 feet above mean sea level can be inundated, and the damage to natural and cultural features near the shore can be extensive.

The Hydrology

Pleistocene and Recent sediments of Quaternary age account for the upper 50 feet or so of surface sediments. They follow to some degree the slight contours of the underlying limestone but generally mask any structural characteristics with a relatively level, homogeneous deposit. The surface expression is the result of Pleistocene erosion, deposition, and reworking of sediments rather than any processes occurring in earlier geologic periods. The geologic map of the region is shown in map 1.7.

While the region is relatively flat, the landscape is quite varied, owing mainly to the importance of surface water. Relief is not pronounced, ranging from sea level to less than 150 feet, yet a few feet in elevation at a locale can mean the difference between dry, habitable, cultivable land and freshwater swamp or coastal marsh. The slope of the St. Johns River from Lake George to the Atlantic Ocean is only about five feet in 100 miles, but at certain locations the banks of this slow and large body of water provide rich soils and high, dry, commanding elevations. In the interior, between the river and the ocean, drainage courses are usually poorly defined and bordered by extensive freshwater swamps. In addition, the presence of impermeable clays below the surface results in areas of poor drainage that remain wet for at least part of each year.

Although the region is entirely covered by a mantle of Pleistocene and Recent sediments, the nature of which is distinctly determined by their marine origin, certain aspects of the subsurface geology have influenced patterns of human settlement and resource extraction. Bedrock formations consist mainly of limestones of Tertiary age forming relatively undeformed beds of horizontal sediments. From oldest to youngest a typical section exhibits the Lake City and Avon Park limestones of the lower Eocene, penetrated usually in wells only over 200 feet deep. The next three limestone beds, the Inglis, Williston, and Crystal River Formations, have been designated the Ocala group, and are upper Miocene in age. These have no surface expression in northeast Florida but comprise the uppermost and most productive beds of the Floridan Aquifer, the main supply of nonsurface water for the region. Overlying the Ocala Group is the Hawthorn Formation of Miocene age, which is sandier than the purer limestones below and contains sufficient clay to act as an aquiclude (a confining impermeable



Map 1.7. Surficial geology. After Brooks (1981)

layer) for the Floridan Aquifer. The next youngest sediments are of sand, shell, and silty clay. They are generally undifferentiated and are usually grouped together as upper Miocene and / or Pliocene deposits. They may yield small quantities of water but have low permeability. There are two major subsurface bodies of water that participate in the regional hydrology, the deep artesian reservoir and the shallow nonartesian reservoir, which includes the groundwater table. As illustrated in the generalized diagram of hydrologic conditions (fig. 1.2), the artesian aquifer is several hundred feet below the land surface. This aquifer consists of the important Floridan Aquifer, which is made up of the Eocene-age Ocala Group of limestone formations as well as the overlying Miocene or Pliocene beds of marl, clay, and dolomite of the Hawthorn Formation that comprise an aquiclude of very low permeability. Wherever the land elevation is below the piezometric surface (that elevation to which water will rise in a tightly capped well), water will flow freely from any open well or sinkhole that penetrates the Floridan Aquifer.

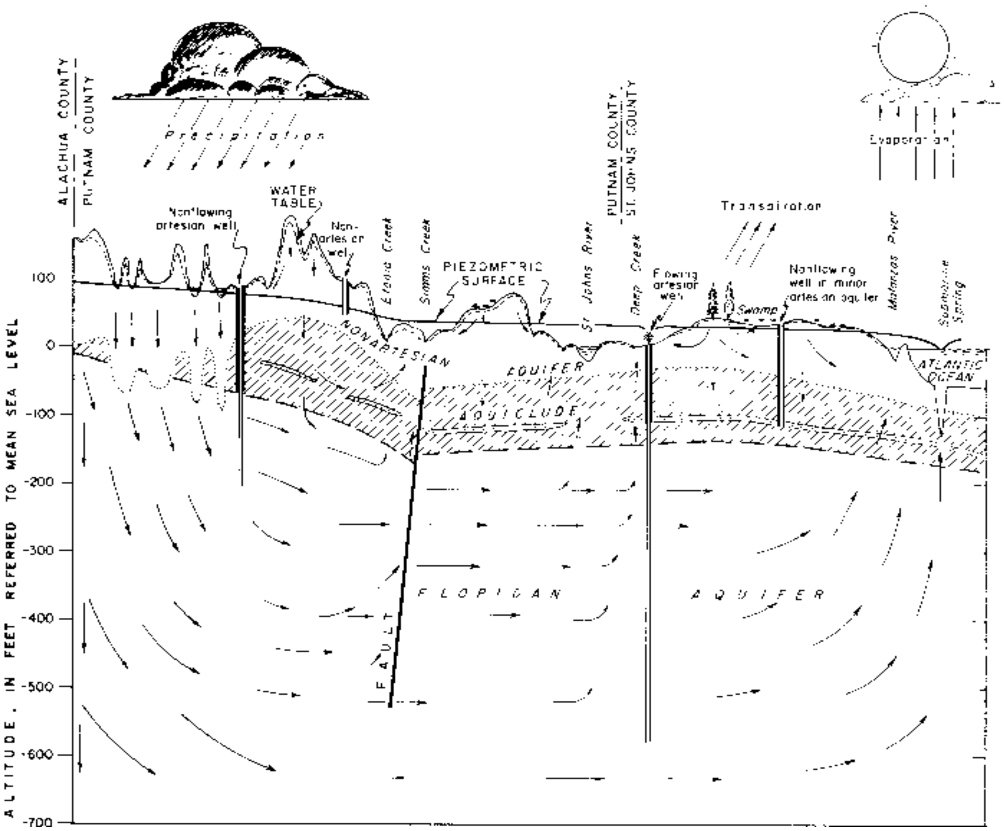
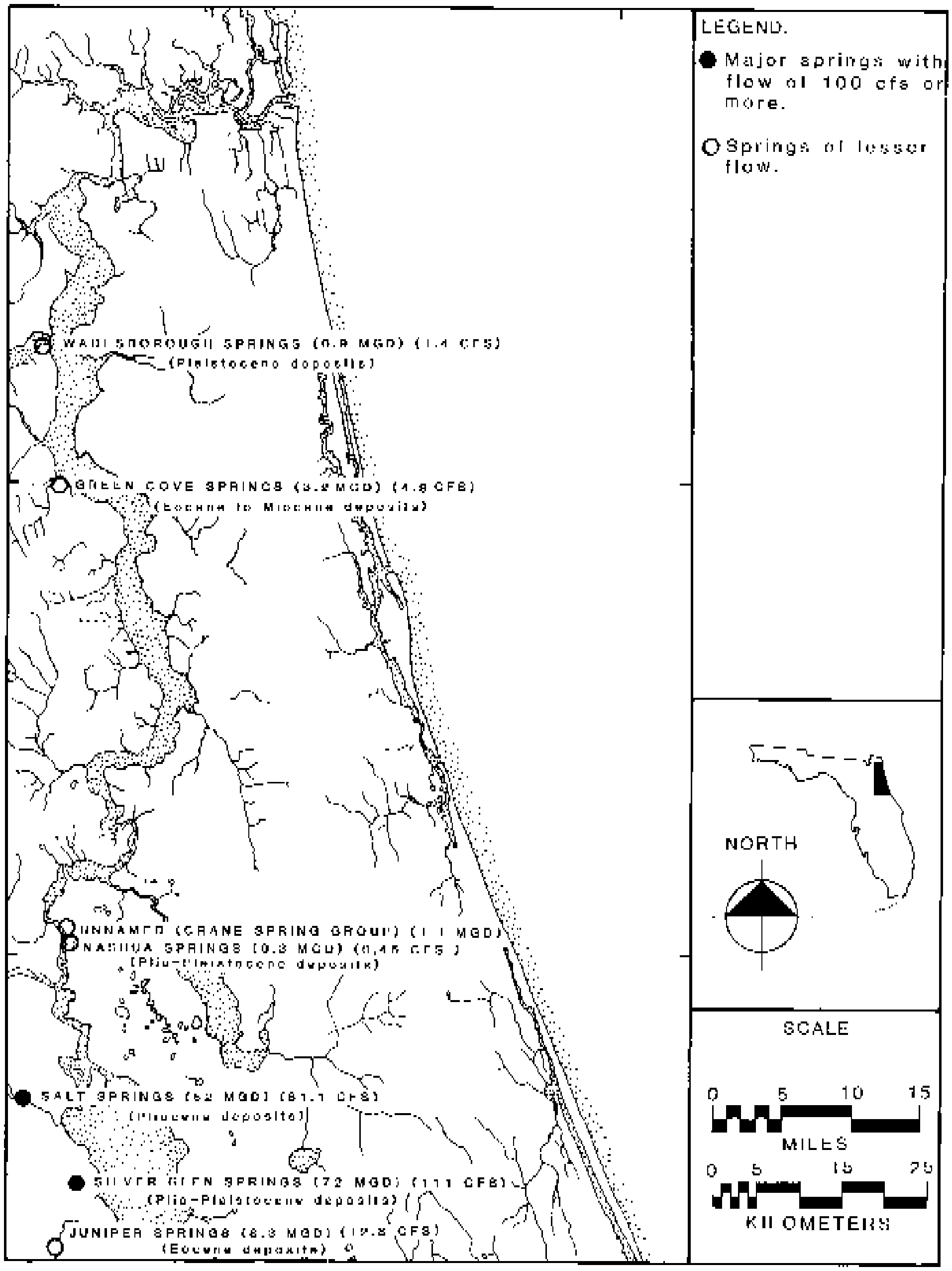


Fig. 1.2. Generalized hydrologic conditions. From Bermes, Leve and Tarver (1963: fig. 10)



Map 1.8. Springs. After Ferguson and others (1947)

Above the aquiclude is a reservoir of groundwater known as the nonartesian aquifer, which does not have sufficient hydrostatic potential or head to cause artesian flow but will have surface expression, depending upon the relative elevations of the land surface and the water table. Wherever the elevation of the water table is above the surface of the land, water will stand in ponds or swamps, or flow in streams. Height of the water table is locally variable and depends upon the supply and demand experienced by the nonartesian aquifer. Both the deep and shallow aquifers exchange water by slow seepage through the intervening aquiclude, and both are replenished by recharge in their respective areas of high hydrostatic potential. The aquifers may be more directly connected to the surface by sinkhole springs, which depending upon local conditions, may provide great volumes of water for surface flow or may serve to recharge the aquifer with surface water. There are seven permanently flowing springs in northeast Florida, all situated near the St. Johns River (map 1.8). They range in size from Silver Glen Springs, west of Lake George, which has an average flow of 72 million gallons per day (111 cubic feet per second), to Nashua Springs near Satsuma, with an average flow of 0.3 million gallons per day (0.46 cubic feet per second) (Ferguson et al. 1947).

The deep artesian reservoir, consisting of the Floridan Aquifer and overlying aquiclude, underlies all of Florida and the south part of Georgia. Its importance to modern settlement cannot be overemphasized, as it supplies the public, agricultural, and irrigation water supply of the region. Despite the huge quantity of water represented by the Floridan Aquifer, its maintenance in certain areas, particularly around Jacksonville and Palatka, is in question. Whenever local demand by pumping exceeds replenishment from the recharge areas, the level of the aquifer declines, particularly at the location of deep wells, where cones of depression are formed. Since the Floridan Aquifer is underlain by permeable beds containing water of high chloride content, freshwater is replaced by saltwater. Coastal areas are especially prone to such saltwater intrusion, which, although easily caused, is not so readily corrected.

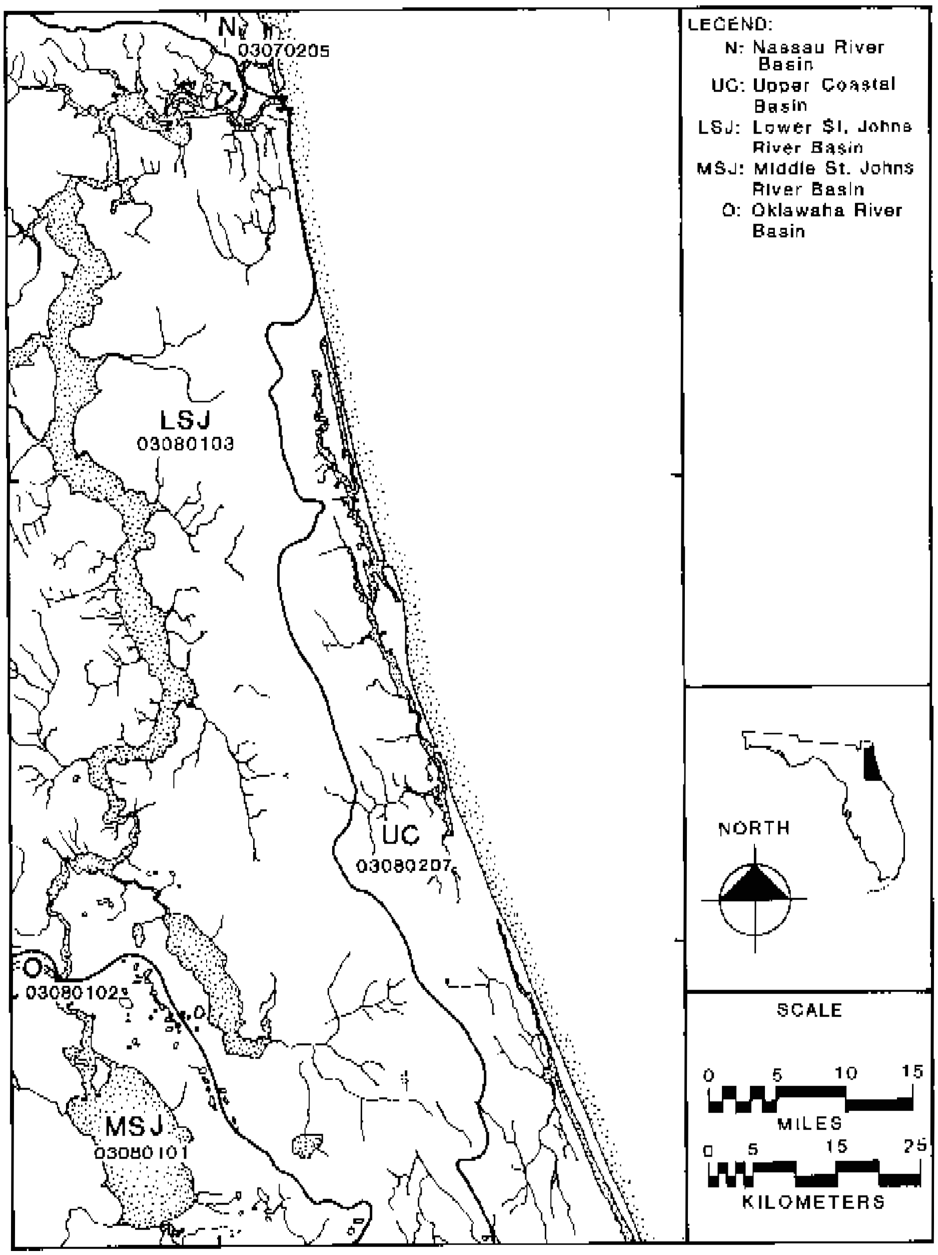
The Drainage

The dominant factor in the northeast Florida landscape is water, both as it occurs in the defined drainages of the St. Johns River, the coastal lagoons, and various streams and at or below the ground surface in intervening areas.

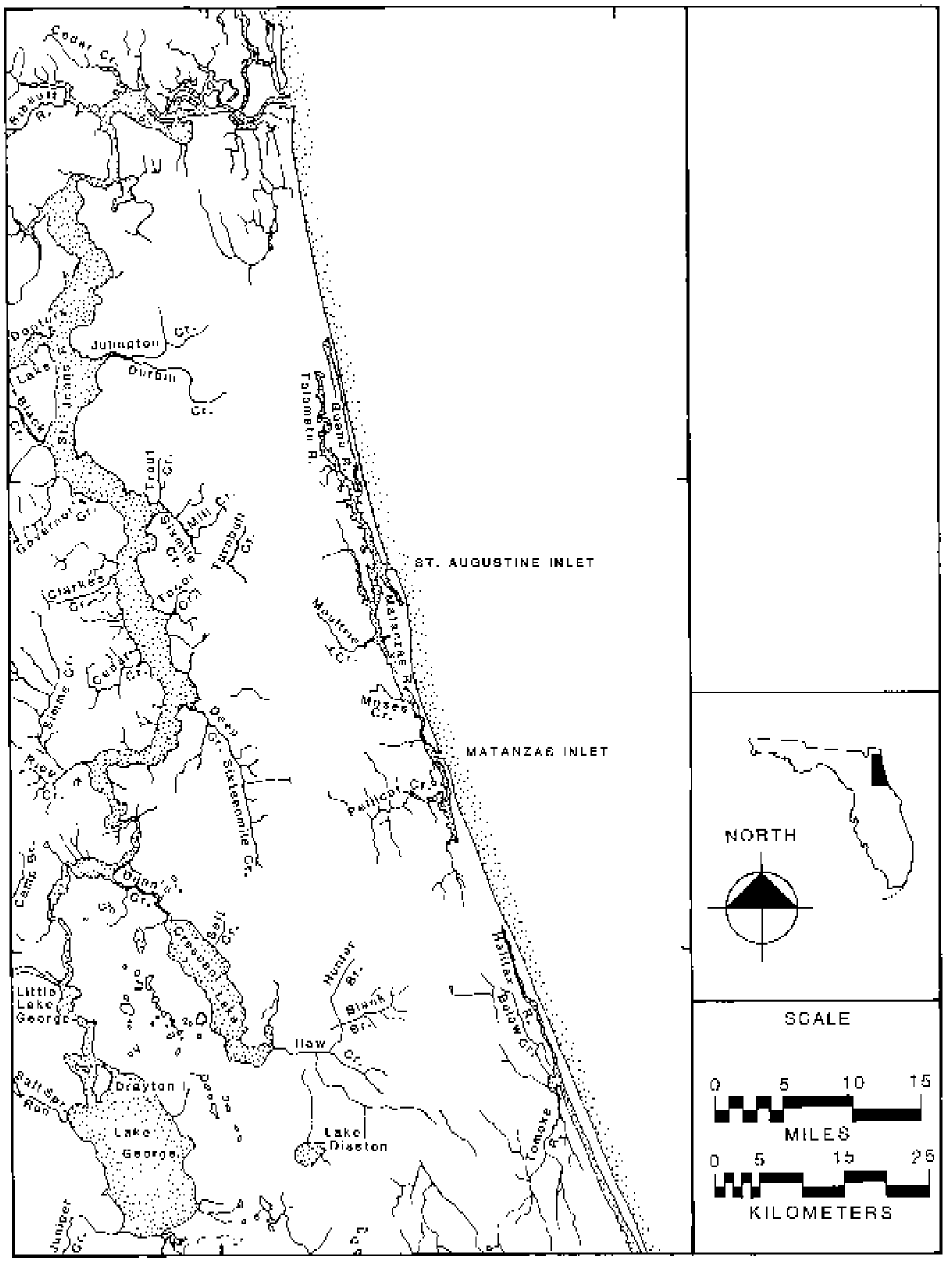
Drainage refers to that part of the hydrologic cycle involving water on the surface. The pattern and quantity of drainage depends not only on topography and rainfall, as is true in any area, but also on the characteristics of the groundwater table. Within northeast Florida, water is present on the surface, in the shallow aquifer, and in the deep Floridan Aquifer. There are areas of recharge for the shallow and deep aquifers, as well as areas where water escapes the Floridan aquifer by artesian flow. At the beginning of the twentieth century, nearly all of northeast Florida was subject to artesian flow, occasionally through sinkhole springs and more commonly through uncapped, free-flowing wells; more recently, water pumping has reduced the elevation of the piezometric surface, and less of the region is now subject to artesian flow.

Hydrologic units or drainage basins of northeast Florida are shown on map 1.9. At the northern extreme of the region is the Nassau River Basin, an area of tidal marsh and low elevation drained by the Nassau River, which empties into the Atlantic at the north end of Duval County. Along the Atlantic Coast is the Upper Coastal Basin, a narrow strip drained by small streams that empty into a series of lagoons: Guano River and Tolomato River north of St. Augustine, Matanzas River south of St. Augustine, and the Halifax River north of Daytona Beach. These lagoons contrast with dendritic interior drainages in being wide, coast parallel, and entirely tidal. They have been formed as a series of bays behind barrier islands that front the Atlantic. There is a very small portion of the Oklawaha River Basin in the region at its confluence with the St. Johns River north of Lake George, and this marks the boundary between the Lower St. Johns River Basin, already mentioned, and the Middle St. Johns River Basin to the south, which includes Lake George. The distribution of surface drainage is presented in map 1.10, which includes names of the major rivers, streams, and coastal lagoons.

The St. Johns River is Florida's largest river and one of the few large rivers in the United States that flows northward. Within the region it averages one mile in breadth and is tidally influenced for its 120-mile length. Because of this tidal influence, water may flow upstream (south) during periods of high wind and high tide, and the volume of such flow is considerable. Although the average discharge at the mouth of the St. Johns in Jacksonville averages 8,300 cubic feet per second, the total upstream and downstream flow at the same station can reach 130,000 cubic feet per second (Snell and Anderson 1970). This significant movement of water is characterized more by volume owing to the river's width than by velocity, as the river appears at all times to be only slowly moving. Nonetheless, it stores a great volume of surface water in its low flood plain, which may reach 10 miles in width. The very shallow gradient, around 0.05 feet per



Map 1.9. Hydrologic units. After U.S. Geological Survey (1975) and U.S. Water Resources Council (1970)



Map 1.10. Surface drainage. After U.S. Geological Survey (1976)

Fig. 1.3. The St. Johns River Offset. View of the St. Johns River south of Lake George in the late 1940s. Florida Photographic Archives.

mile, combined with tidal influence allows water to remain in the basin for a long period of time.

Geologically, the St. Johns River within northeast Florida may be divided into two parts, a very broad northern course following the Eastern Valley physiographic division and, south of Palatka, a considerably narrower section following the St. Johns River Offset physiographic division. The northern part of the river represents an estuary or coastal lagoon formed by the Pamlico Sea during Pleistocene times that was subsequently isolated by development of seaward marine terraces. South of Palatka (fig. 1.3), the river is offset west of the Eastern Valley and separated from it by an older Plio-Pleistocene terrace ridge exhibiting remnants of the Talbot, Penholoway, and Wicomico terraces. In fact, the broad character of the Lower (northern) St. Johns channel is reflected in the orientation and shape of Crescent Lake within the Eastern Valley, from which the flow of the St. Johns was likely captured during the Pleistocene Epoch (White 1970). The intervening terrace ridge, which comprises the Crescent City Ridge and some associated hills, is the only part of northeast Florida characterized by solution sinkholes and lakes.

The Upper Coastal Basin (map 1.9), extending in a band about 10 miles wide inland from the Atlantic Coast, was formed by the same geologic processes as the St. Johns River Basin, but in geologically more recent times. It consists of a linear series of coast-parallel estuaries or lagoons entirely within the limits of the Silver Bluff terrace. These coastal features may be in some cases no more than 5,000 years old, having been formed in association with coastal barrier islands at a time of rising or stable sea levels during the current glacial recession.

A few freshwater dendritic streams, including Moultrie, Pellicer, and Bulow Creeks along with the Tomoka River, drain the inland flatwoods eastward to the coastal lagoons, but the predominant character of drainage along the coast is coast-parallel, brackish lagoon bordered by salt marsh. An important effect of the coastal barrier islands is to shield the mainland from the high energy of the coast and to provide stable areas along the lagoons. These sheltered areas have been important for settlement, transportation, and food throughout prehistoric and historic times.

The Vegetation

Like soils, the natural vegetation of northeast Florida can be mapped and studied at different levels of detail. A classification is required that can be mapped accurately at the scale selected for this study and has a sufficient number of categories to distinguish broad regional patterns of vegetation. Map 1.11 presents natural vegetation (vegetation that would be expected without severe human intervention), which is divided into eight categories. Following the patterns already recognized in physiography and soils, the region is seen to comprise a coastal strip characterized mainly by coastal strand, coastal marshes, and small areas of cabbage palm hammock and sand pine. The broad interior between the coast and the St. Johns River is characterized simply as an expanse of pine flatwoods interior interrupted by hardwood swamp forests and cypress swamps. Along the St. Johns River, which interrupts the pine flatwoods continuing to the west, are large areas of longleaf pine forest; these occur on the high terraces east of Lake George as well as near the mouth of the river. West of Lake George, on the sandy soils of Ocala National Forest, is a sand pine forest formed on well-drained relict dunes. Table 1.3 presents Davis's (1967) vegetation descriptions as depicted in map 1.11. Because the original soil mapping was completed at small scale, finer detail of drainage patterns is available from the soils map (1.6).

Modern vegetation in northeast Florida is a reflection of many centuries of land use as well as the introduction of a broad variety of exotic species.

Table 1.3. Classification of natural vegetation

1. Coastal Strand. A zoned vegetation on sand dunes and rock, composed of pioneer herbs and shrubs near the shore with scrub and forest zone more near the interior.

2. Pine Flatwoods. Open woodlands of one to three species of pine: longleaf, slash, and pond pines. Many herbs, saw palmetto, shrubs and small trees form an understory. Included in general flatwoods areas are small hardwood forests, many kinds of cypress swamps, prairies, marshes, and bay tree swamps.

3. Sand Pine, *Pinus clausa*, Scrub Forests. These occur mostly on excessively drained deep sandy soils, especially on old dunes of the coastal strand and old dunes or dry sands in the interior.

4. Forests of Longleaf Pine, *Pinus palustris*, and Xerophytic (dry site) Oaks. Mostly on well-drained uplands. The turkey oak, *Quercus laevis*, and wiregrass, *Aristida stricta*, are common.

5. Cypress Swamp Forests. These are found mostly in depressions and bordering rivers and lakes. Forests of many shapes, as round domes and long strands. Some have hardwood species associated.

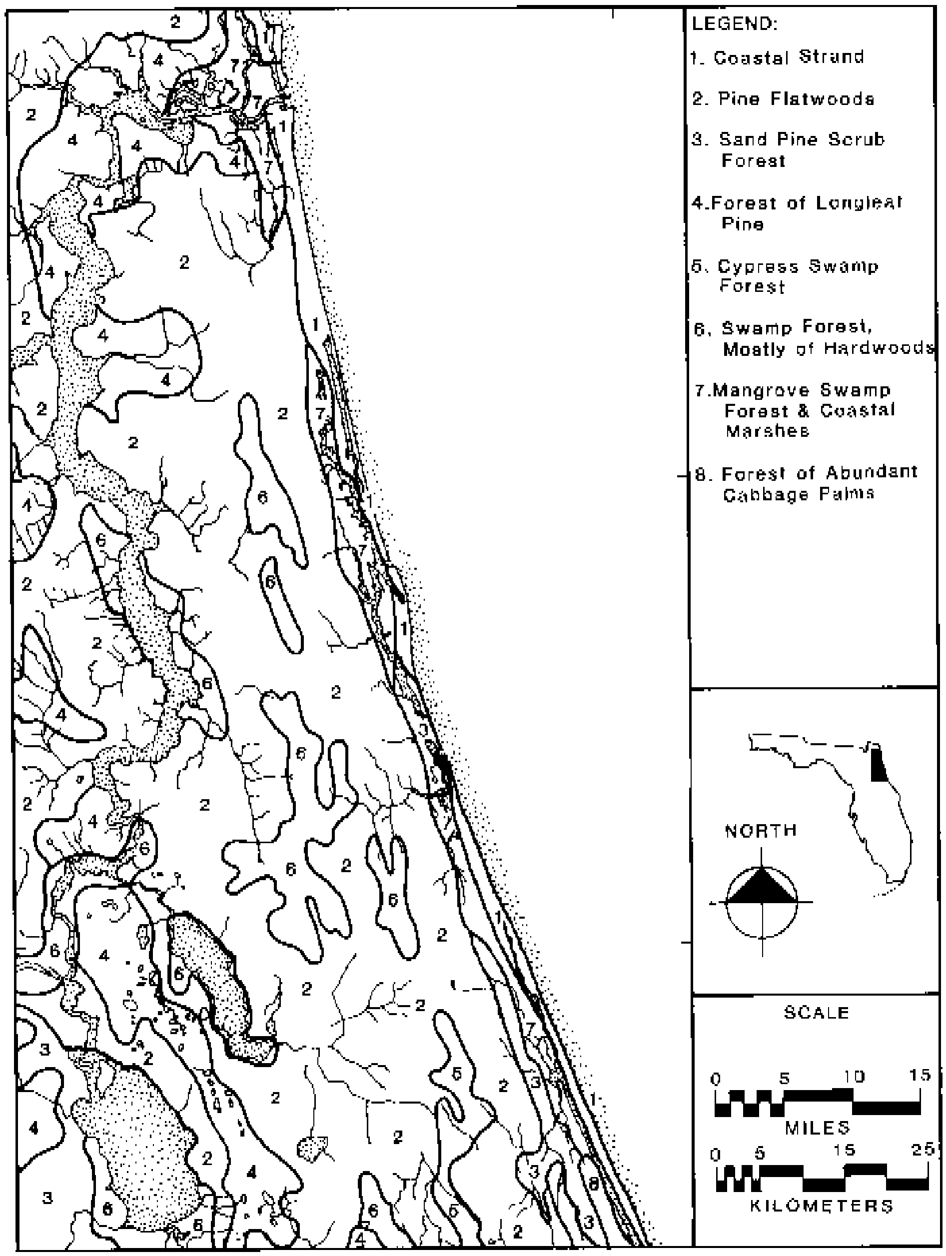
6. Swamp Forests. Comprised mostly of several kinds of hardwoods bordering most rivers and growing in basins. Some Bay Tree, Gum, Nyssa, Titi, and cypress zones occur in many of these hardwood swamps.

7. Mangrove Swamp Forests and Coastal Marshes. Usually there are tidal conditions which vary from saline to brackish. Grass, sedge, and rush marshes along more temperate coasts.

8. Forests of Abundant Cabbage Palms, *Sabal palmetto*. Vary from scattered palms to groves of palms and oaks in hammocks.

Source: After Davis (1967); number refers to map symbol.

Virtually all virgin forest in the region has been cut; in fact most timberlands have been cut over several times. According to surveys conducted between 1908 and 1910 by Roland M. Harper approximately 95 percent of the pine flatwoods in the region remained uncultivated at the beginning of the century, and 99 percent of the coastal strand retained its natural vegetation (Harper 1914:395). Since that time, considerably more land has been cleared of vegetation for agricultural use, and, as agricultural land requirements change, many previously cleared areas have reverted to forest. The greatest change in vegetation, however, is that associated with residential and commercial development. With few exceptions, the result of



Map 1.11. Natural vegetation. After Davis (1967)

residential development is to replace a naturally occurring landscape with an intensively managed one composed primarily of exotic species and impermeable surfaces.

The Fauna

Many animal species have been important to people in northeast Florida. The principal land animals historically used for food have been white-tailed deer, black bears, gray and fox squirrels, raccoons, opossum, marsh and cottontail rabbits, red and gray foxes, gopher tortoises, several kinds of snake, and perhaps cougars, bobcats, and weasels. Of aquatic and marine animals, the most important have been fish and shellfish, but otters, porpoises, manatees, several types of freshwater turtles, alligators, sea turtles, and bullfrogs also provided sources of meat (fig. 1.4). The principal shellfish have been oysters, quahogs, and donax along the coast, and apple snails and *Viviparus,* a gastropod, along the St. Johns River. Subsistence, sport, and commercial fishing have had long histories on the St. Johns, in the coastal bays and estuaries, and offshore. Shrimping has been the most important regional fishery on a commercial scale.

Fig. 1.4. *Killing Alligators*, de Bry engraving, 26 years after the painting by Le-Moyne; published in 1591. Florida Photographic Archives.

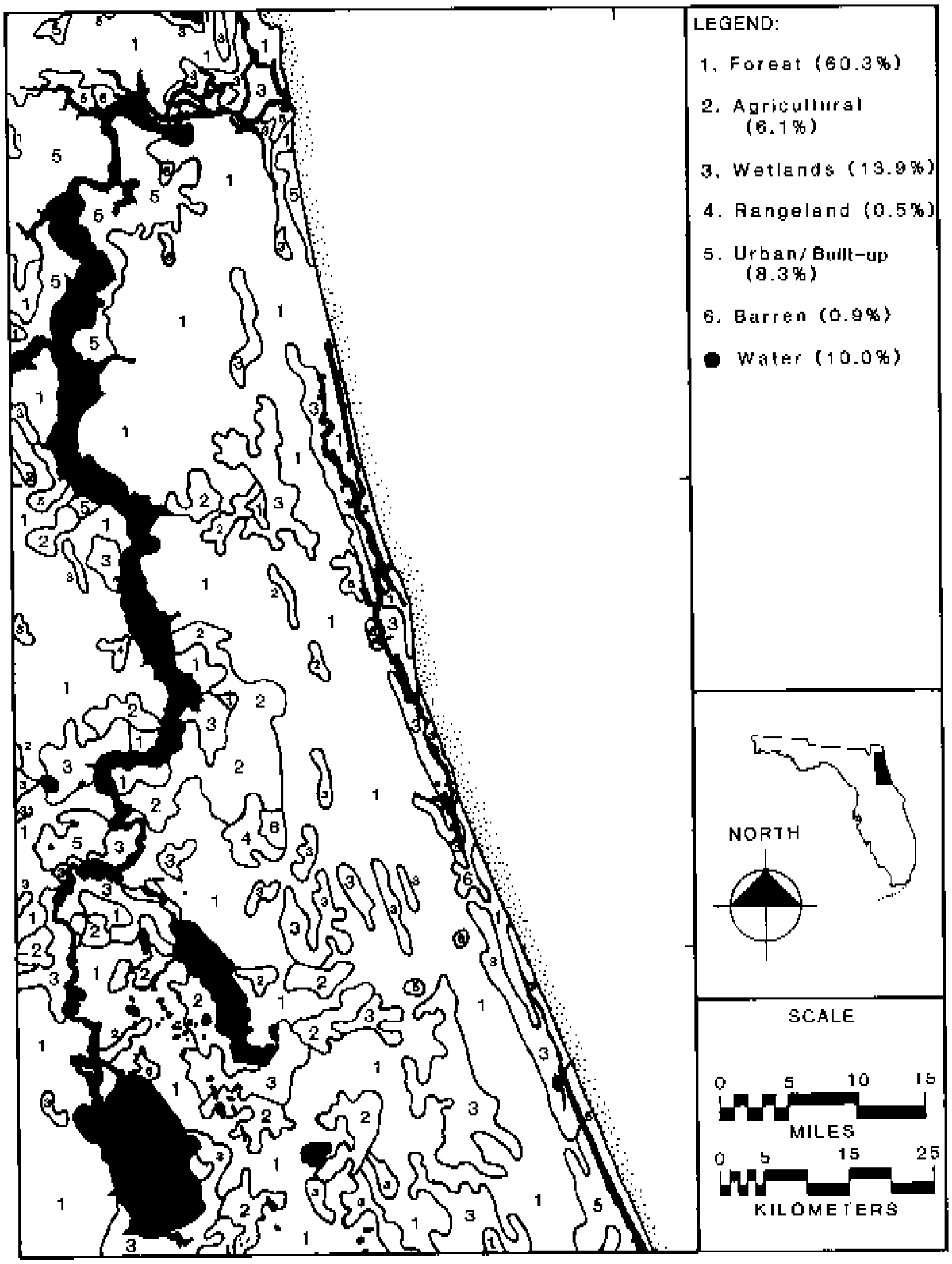
Modern Land Use

Modern land use based on 1973 United States Geological Survey satellite data is shown in map 1.12. Forest lands account for slightly more than 60 percent of the total acreage and are almost all in private ownership, as there are no national or state forests in the region shown. Most forest land, when suitable, is managed by large paper companies for pulpwood production. Nearly 14 percent of the region is mapped as wetlands, which include both freshwater and saltwater wetlands. They occur directly along the coast and the St. Johns River, as well as scattered throughout the intervening pine flatwoods of the terraces in a pattern generally parallel with the coast. Ten percent of the region is mapped as water: coastal estuaries, the St. Johns River, and associated large lakes. Urban and built-up land comprises 8.3 percent of the total and includes Jacksonville and its suburbs, and Green Cove Springs and Palatka along the St. Johns River, as well as Jacksonville Beach, St. Augustine, Ormond Beach, and Daytona Beach along the coast. Not represented in the 1973 imagery on which the analysis is based is the planned community of Palm Coast in Flagler County, now one of the fastest growing counties, in terms of population increase, in the United States. Some 100 square miles will be under development over the next several decades, and this particular land-use conversion would account for approximately 2 percent of the region being removed from forest land use and added to urban or built-up use.

The Regional History

The development of the northeast Florida environment will be traced within this context of natural and cultural factors. The study will begin with a discussion of environment as it can be reconstructed before the arrival of people, which occurred sometime around 12,000 years ago. Prehistoric Indian occupations of northeast Florida will be summarized with reference to their particular modes of adaptation to local environments and the resulting settlement patterns during several periods of very different environmental conditions (table 1.4). The arrival of Europeans in the early sixteenth century begins the longest documented written history in the United States (table 1.5).

The starting point for understanding environmental dynamics is before human occupation—not in search of pristine nonhuman environments against which later environments might be compared but rather because the relationship between people and environment is continuous. The study begins with a reconstruction of conditions during the Late Pleistocene some 18,000 years ago when climate was cooler, sea level was much lower,



Map 1.12. Modern land use. Based on 1973 data after Fernald and Patton (1984: 163)

Table 1.4. Archaeological chronology

Years ago	*Archaeological period*		*Geological epoch*	*Glacial stage*
0	Historic			
1000	St. Johns	II		
2000		I		
3000	Late Archaic	Transitional Orange		
4000			Holocene or Recent	Postglacial
5000		Mt. Taylor		
6000	Middle Archaic			
7000				
8000	Early Archaic			
9000				
10,000				
11,000				
12,000				
13,000	Paleo Indian		Late Pleistocene	Late glacial transition
14,000	???			
15,000				
16,000	Prehuman environments			Full glacial
17,000				
18,000				

and the last Wisconsin glaciation was at its maximum. As global climate warmed and environments responded accordingly, terrain, drainage, fauna, and flora were all different from the present. The first inhabitants of northeast Florida adapted to Late Glacial conditions with a technology and settlement pattern suited to the hunting of scarce and large animals in a dry environment. Even at quite low population densities the environmental influence of these Paleo Indians may have included hunting to extinction a number of vertebrate species.

The most fundamental environmental changes between 10,000 and 5,000 years ago, however, were natural in origin and of such magnitude as to require different patterns of settlement, subsistence, and technology. As sea level rose to its present position, water sources, small game, and plant resources became more accessible with increased sedentism as the result.

Table 1.5. Historical chronology

Date A.D.	*Historic period*	*Historic event*
1975		
1950	Twentieth century	World War II
1925	World War I	
1900		
1875	Civil War and Reconstr.	Civil War
1850	Early statehood	Statehood, 1845
1825	Territorial period	Adams-Onis Treaty, 1821
1800	Second Spanish period	Treaty of Paris, 1783
1775	British period	American Revolution
1750		Treaty of Paris, 1763
1725		
1700	First Spanish period	
1675		
1650		
1625		
1600		
1575		St. Augustine founded, 1565
1550	Exploration and discovery	Ft. Caroline, 1562
1525	Protohistoric	
1500	Precontact	Ponce de León landing, 1513

Social organization likely increased in complexity as groups became larger, and new tool technologies were developed.

By about 5,000 years ago the environment of Florida and much of the southeast United States had become essentially like that of today. The sea had reached more or less its present level, barrier islands had formed on the coasts, stream gradients had become reduced and stabilized, vegetative complexes and their associated fauna were essentially modern, and the climate and landscape were much wetter than before. Indians living on the coast and along the St. Johns River were able to take advantage of stable and abundant fish and shellfish, an important source of protein, and as populations became more sedentary in response to more stable conditions, opportunities for specialized collection and domestication of plants increased.

With the introduction of agriculture about 3,000 years ago, environmental effects increased in some areas, particularly respecting vegetative cover and the use of fire for clearing (Larson 1980, Pyne 1982). Freshwater and estuarine locales continued to be favored for settlement; however, inland regions with fertile soils were also utilized and modified. By the time of first European contact, complex social and political organizations had developed based on a broad variety of wild foods as well as some crops (Deagan 1978).

The first permanent colony in North America, Fort Caroline at the mouth of the St. Johns River, was established by the French in 1564 and occupied by them until 1565. The French accounts provide the first detailed historical descriptions of the rich environment of northeast Florida and its native populations. Subsequent Spanish settlement at St. Augustine beginning in 1565, along with the destruction of the French force, began two centuries of Indian-European relations dominated by the Spanish and resulting in the eventual decimation of nearly all Indians in northeast Florida. During the First Spanish Period (1513–1763) the Florida settlement, primarily military and missionary, remained centered around St. Augustine and was dependent upon outside support from Spain and other New Spain settlements.

English occupation of Florida for the next 20 years was more productive and intensive. The accounts of De Brahm (1773), Romans (1775), and the Bartrams (J. Bartram 1769, W. Bartram 1791) provide a detailed environmental and social picture of northeast Florida around the time of the American Revolution. In contrast to their Spanish predecessors, British officials supported the development rather than the mere survival of the Florida colony. Large tracts of land were granted for the establishment of plantations devoted to export agriculture, new crops were introduced and marketed, and during this period timber was exported for the first time. When Spain reacquired control of Florida in 1783 under terms of the Second Treaty of Paris, many agricultural settlements were abandoned by the British, and much of the previously cleared and cultivated land reverted to secondary growth; Spanish attempts to turn East Florida into a self-sufficient and prosperous enterprise were not entirely successful, although a number of plantations were established, often continuing at the locations of the earlier British settlements.

The historical environmental record of the region was enriched considerably in the 1820s as the U.S. government attempted to assess its new territory (Simmons 1822, Vignoles 1823). Federal survey of township and section lines resulted in a rich historical landscape record, and a number of travelers described the region over the next several decades (Proby 1974, Williams 1837b). The Seminole Indian Wars that followed led to white abandonment of the interior in the 1830s (Cohen 1836), and the region was only slowly resettled after the passage of the Armed Occupation Act in 1842. Following the Civil War, the United States again encouraged settlement by deeding "swamp and overflowed lands" to the state, which in turn distributed huge tracts to railroad and development companies at very low cost. The famous railroad development of Henry M. Flagler opened Florida's east coast during the late nineteenth and early twentieth centuries and swelled the population of St. Augustine for a short time, yet much of northeast Florida remained either rural or unsettled (Barbour 1882, Hawks 1887). Citrus, vegetable, and timber production dominated the region's rural economy throughout the early twentieth century (Hanna and Hanna 1950).

Following World War II and the development of an adequate regional highway system, the coast and interior were opened for settlement in Florida's second period of intense residential development. Although much of the region remains forested and agricultural, coastal development pressure is now intense. Contemporary technology and seemingly abundant energy have combined to overcome the once intimate relationship between humans and environment, allowing land-use decisions to be based primarily on economic rather than ecological factors. Whether this is a viable strategy over the long term, or whether future adaptations must rely more directly and more benignly on local natural systems, is a question that environmental history may help answer.