CARVED OUT OF WOOD:
EXPLOITING THE FORESTS IN THE ANGLO-ATLANTIC
AND THE SPLINTERS THAT FOLLOWED, 1583-1776

A Thesis

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by

Timothy A. Tadlock, Jr.

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by

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Abstract

of

CARVED OUT OF WOOD:
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This work demonstrates the consequences of conflict over timber between the British imperial government and Anglo-Atlantic colonies. English colonists in the North Atlantic quickly turned to the available forestlands to meet their needs for survival and desire for profit, but later commercial growth in the empire placed at odds the colonists’ immediate intentions for the forests and the strategic purposes outlined by the English government. This study divides timber use into three broadly defined categories: domestic, commercial, and strategic. Expanding upon related historical scholarship, this thesis compares these uses in a way that most current historical literature does not, allowing analysis of conflict over timber in the early modern Anglo-Atlantic. Using government documents and contemporary accounts of explorers, colonial leaders, and travelers in the Anglo-Atlantic, the perception, utilization, and consequences of timber harvesting to the political economy and environment of the colonial Anglo-Atlantic are traced. This thesis shows that many colonists and merchants operated with veritable economic impunity for over a century despite British policies that should have restricted
their actions. However, British attempts to control the use and sale of timber contributed to mainland colonists’ feelings of oppression. Timber exploited from North American forests laid the foundations for the early Anglo-Atlantic economy, and the strategic demands on these forests created tensions within the empire that contributed to the American Revolution.

____________________ , Committee Chair
Jeffrey Wilson, Ph.D.

____________________
Date
DEDICATION

For Stephanie, Gabriel, and Anastasia

Thank you for making this entire endeavor possible.
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Chapter 1

INTRODUCTION

No other economic or geographical factor has so profoundly affected the development of the country as the forest. It forms the background of our early history….it enters into the everyday life of every American citizen.  
—Raphael Zon, “The Vanishing Heritage”

In the spring of 1772, a sheriff was dispatched to Weare, New Hampshire, to collect fines from mill owners charged with illegally cutting white pines and who had already refused to pay an agent of the Surveyor of the King’s Woods. Instead of yielding to law enforcement, several men from the town set upon the sheriff and his assistant while in their rooms at a local inn and “proceeded to make their marks upon the naked back of the sheriff more to their own satisfaction than for his comfort and delight,” after which they “settled substantially in like manner with his assistant.” The rioters further humiliated the sheriff and his assistant sending them off on their horses “with their manes, tails and ears closely cropped.” The sheriff returned with militia and arrested the offenders. Although word of this small act of sedition is thought by some to have inspired the later, and better known, Boston Tea Party, the riot offers insight into a broad conflict between the British government and the America colonists over the use of


3 Ibid., 123
available timber that has roots reaching back to the first settlements and England’s own struggles with maintaining sufficient wood to meet the country’s strategic needs.

Natural resource management has often led to conflict when unmet needs occur. When supply of a resource is appropriated for specific needs, leaving less to meet all other conceived demands, conflict is bound to arise. During the sixteenth century, as western European nations probed the coasts and islands of the Americas and traversed the world, descriptions of natural resources—both perceived and actual, from precious metals to soil—filled the journals, letters, and other contemporary accounts that returned to Europe. When the English joined the race to stake claims in the Americas, their explorers, officials, and colonists gave witness to the potential bounty across the Atlantic Ocean. With regard to the most ubiquitous resource of all, timber, they conceived of a wide array of uses without any forethought of potential for conflict, perhaps awed by the sheer volume of available wood compared to the thinning forests of England. This thesis illustrates this evolving perception and the ultimate role of trees in the political economy of the colonial Anglo-Atlantic, beginning with English plans for settlement and culminating in two examples which trace the conflicting values placed upon the productive use of trees by the British government, colonial settlers, and merchants. Richard Grove explains that “it is clearly important, therefore, to try to understand current environmental concerns in the light of a much longer historical perspective of social responses to the impact of capital-intensive western and non-western economic
The resource conflict depicted in my thesis divides the use of timber into three broadly defined categories: domestic, commercial, and strategic. Doing so provides a mechanism for understanding more than just the conflict and consequences that arose from the competition to meet the demands placed upon timber; it also offers some insight into the broader nature and conflict of resource competition.

By building upon the widely used concept of “triangular trade,” connecting together Europe, Africa, and the Americas at the height of colonial expansion in the Atlantic, this work identifies a new source of conflict within the British Empire between the government in England and the colonists in North America through a comparison of three competing productive uses of timber resources. Timber usage was described by men exploring the coasts and islands of the North Atlantic and West Indies, carved new settlements from the dense stands of pine, built ships and traded available timber for supplies, and instituted efforts to both conserve trees important for the growing Royal Navy and control the trade in wood fueling the sugar plantations in the West Indies. For purposes of analysis throughout this work, I have categorized the array of timber uses into domestic, commercial, and strategic intentions. Domestic use of timber describes the creation of products intended to meet the immediate needs of a settler or the greater good of an individual community. This includes clearing land, creating potash, cutting boards for construction of homes and outbuildings, fencing, and the like. Commercial uses place the greatest value on seeing a return on investment. There is crossover between the productive uses made of timber resources for domestic purposes and commercial

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purposes. The distinction lies in the purpose, and commercial uses generally prevailed. An example of commercial uses might be to cut timber and saw logs into lumber, then export the lumber away from the immediate area where it might see domestic use for sale elsewhere, such as the vast quantities of wood exported to the West Indies to fuel the sugar economy expanding there. For the sake of simplicity, no distinction is made between wood sold to neighbors for their benefit and that cut and consumed by the individual. Both cases are classified as domestic for purposes of this work, while commercial uses include wood exported for trade and material gain. Strategic uses are those sought by the metropole, in this case England, for the perceived greater good of the entire nation or Empire. This includes controlled uses of timber that predetermine its use in a nationally or imperially significant pursuit. Strategic objectives for timber resources are identified by an often distant governing body and were disconnected from the domestic intentions, which preponderate in the immediate vicinity of colonial settlements. Taken together, these three uses form the triad of resource consumption. This is not to say that each of these categories inherently compete with one another or were mutually exclusive. Indeed, it was not uncommon to see timber resources dominated by two, and in rare cases, all three uses in a symbiotic fashion. Although in nearly every observable case, commercial uses tended to partner with strategic and domestic goals, while strategic and domestic supplies of the resource tended to remain at odds in the colonial landscape. This thesis will show that conflict arose where the restrictive nature of strategic uses ran contrary to the desired goals of the individuals interacting with the wood.
The importance of wood in the colonial periods does not go unrecognized by modern historians, yet few have made timber or trees the focus of their work. This thesis adds to the historical dialogue that considers the importance of timber products to national and imperial development as well as some of the environmental and economic consequences befalling overuse of arboreal resources. Richard Grove’s *Green Imperialism* addresses the argument of growing conservation measures resulting from imperial expansion, but does so by more broadly addressing the whole of the natural environment in the early modern world, rather than attempting to focus exclusively upon timber or the Anglo-Atlantic. One early history that does focus entirely upon the question of timber in the early modern era, and a major source for the history of timber use in the period, is that of Robert Albion’s *Forests and Sea Power: The Timber Problem of the Royal Navy 1652-1862*. The majority of Albion’s authoritative treatment of the role of timber in the development of the Royal Navy describes the naval timber acquisition and use for the early modern British Navy and offers tremendous insight into the policies that affected colonial ship timbers, from masts to naval stores. Published in 1926, his work is the definitive history of naval timber used by the Royal Navy and is referenced in numerous later works on naval history and has yet to see an update to his research. While ship timber remained an important strategic resource, it is one of several recognized uses identified by historians. Most references to timber appear not in whole works devoted to the subject, but rather as one of several commodities supporting a larger enterprise. One of the greatest such enterprises in the early modern Anglo-Atlantic was the development

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of the sugar economy. Many works of history describing the seventeenth and eighteenth century Caribbean sugar economy offer some suggestion of wood’s role in buttressing the system, but rarely do these works really call attention the critical importance of imported wood in perpetuating the sugar economy.⁶

Many authors have explored the importance of trees and the development of timber as a resource within the history of the United States, but only a couple offer more than a cursory portrayal of the colonial period and instead describe the period prior to the nineteenth century as the standard against which future change is measured. Works of this nature instead tend to focus upon the contribution, conservation, and preservation of forestlands within the growing nation, rather than its place in the politics and economics in advance of the American Revolution. In This Well-Wooded Land: Americans and Their Forests from Colonial Times to the Present, Thomas R. Cox compiled the first attempt to illustrate that “the American and his society were, above all else, products of the continent’s forested plenty.”⁷ While he devoted nearly a fifth of the work to the colonial period, the bulk is concerned with the nineteenth and twentieth centuries.

Writing more than twenty five years later, Eric Rutkow expanded upon Cox’s arboreal

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overview in *American Canopy: Trees, Forests, and the Making of a Nation* without seeking to “flatten trees into a single dimension” by discussing them exclusively as commodities.\(^8\) Instead, Rutkow enriched the subject by exploring the additional dimension found in the beauty and ideological value of trees and forestlands. Rutkow, like Cox, condensed the entire history of American forests into the history of the United States, showing “how trees changed from enemy, to friend, to potential savior.”\(^9\) Rutkow took a preservationist stance and traced the evolution of the social perception of trees through American history, but offered a shallower glimpse into the colonial period than Cox and did not highlight the ultimate political connections between the trees and the British Atlantic Empire. This thesis expands upon both of these works by exploring the role of trees in the colonial Anglo-Atlantic and tracing the conflicting values placed upon their productive uses.

While works that focus exclusively upon timber in the early modern Atlantic might be rare, there certainly exists numerous primary sources from the period accounting for the perception and role of timber. Perhaps the most valuable for the earliest period is the collection of letters and descriptions compiled by Richard Hakluyt at the end of the sixteenth century in *The Principal Navigations, Voyages, Traffiques and Discoveries of the English Nation*.\(^10\) Contemporary accounts depict an England facing the end of a reliable domestic supply of timber and a new potential source across the

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9 Ibid., 7.

Atlantic. The English described the New World as a land teeming with woods that might meet the needs of both potential settlers and the aspirations of a young empire, identifying timber as an early commodity of importance, if not particularly lucrative, and sometimes only as an afterthought. The English certainly did not charge across the Atlantic based solely on assertions of a vast forest. Early English justifications for colonizing the coasts and islands of the North America suggested both economic and religious motivations, but seventeenth century accounts demonstrate that commerce, rather than religion, guided policy and decision.

As the commercial potential of the American colonies rose during the seventeenth century and England found itself in direct competition with the Dutch in the North Sea, Baltic Sea, and the North Atlantic, the English turned toward policies which restricted direct trade, especially between its colonies and the colonies and nations of Europe for the purpose of assuring England’s continued access to the exclusion of competitors. The early English colonists used available timber largely for the domestic and commercial benefit of settlers, but by the middle of the seventeenth century, the English government began implementing policies controlling the use and export of timber. Those policies subordinated the traditional domestic and commercial uses of certain types of wood to the evolving strategic needs of a new English, and later British, Empire and drove a wedge between the imperial government and the timber-laden colonies they sought to control. The implementation of mercantile policies, such as the Navigation Acts, limited the sale
of specific colonial goods to England, and later, Great Britain. These “enumerated commodities” also included lumber for a time, and when the restrictions eased in 1766, trade remained limited “to the countries that lie south of Cape Finisterre,” in northwest Spain, which continued to bar northern Europe from trade and therefore did little to open a market in the true areas of demand in Europe or foreign colonies. This thesis explores the role of wood in support of English colonial development in the North Atlantic to illustrate that an awareness existed of the different needs that timber products would serve, yet prioritized the perceived strategic needs of the empire over competing intentions within the colonies. This led to fractures within the Anglo-Atlantic and helped to alienate the American colonists of the North American mainland.

A study of the efforts by colonists to make use of forests lands and products provides an opportunity to trace one line of the fissure that divided the American colonies from the British Empire. What began with Thomas Cox’s efforts to account for the role of trees in American history and followed with Eric Rutkow’s contribution to the historiography twenty five years later, is expanded in this work with an accounting of the conflicting values placed upon the trees themselves in the centuries preceding American Independence. It provides for a case study in colonial resource management and the

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14 For a thorough overview of the role of trees in the development of the United States, see Thomas R. Cox, Robert S. Maxwell, Phillip Drennon Thomas, and Joseph J. Malone, *This Well-Wooded*
consequences of centralized resource control. While the origins of the War for American Independence remains debated and this work does not weigh in on the debate directly, the consideration of environmental and resource factors influencing the colonial development and internal conflicts of British America remains under-considered in the historiography of the era. The primary focus of this work examines the consequences of timber interdependence and conflicting demands upon the resource by the British government and among the British Atlantic colonies, especially its effect upon the politics and economics between Great Britain, the colonies of the British Caribbean, and those of coastal North America. This precludes a discussion of some of the other Caribbean powers in this period, except insofar as they contributed to the conflicting values placed upon wood.

In laying out an approach to forest policy in 1951 and the recognition of continued forest depletion, Luther Halsey Gulick opens with an introduction to the historical use of the American forests. Gulick classifies the “endless forests” as “so spectacular to the first European settlers,” while observing that trees proved the “greatest of all struggles” for the settlers. Confronted with solving what Gulick terms the “forest problem,” the American people witnessed an apparent end to their “endless forest” and feared that controls were necessary to prevent a collapse of woodlands sufficient to


\[\text{15Luther Halsey Gulick, American Forest Policy: A Study of Government Administration and Economic Control (New York: Duell, Sloan, and Pearce, 1951), 11.}\]
sustain economic needs. This is not unlike what the British government did during the seventeenth and eighteenth century in America, but by the time that Gulick was writing in the middle of the twentieth century, timber was not nearly as accessible to the average American as it had been two hundred years before, eliminating much of the conflict with domestic uses that plagued British policy. Gulick’s *American Forest Policy* depicts a history of the American forests following a century of heavy use. Just as he sought an answer to the forest problem using government policy, the armchair imperialists and government officials of the English, and later British, Empire took a strategic view of potential timber resources that differed markedly from the more immediate purposes colonists made of the wood.

The American forest came to fill a strategic role by facilitating economic linkages with other Atlantic colonies, within and beyond the British Empire, especially the West Indies. In this way, the great American woodlot became the primary source of land, fuel, and material for the empire. This enabled the growth of an export-based plantation economy, provided construction material and fuel for colonial settlements, and supplemented the timber reserves needed for the creation and maintenance of a mercantile and armed naval fleet. No other natural resource bound together more of the colonial economy and no other place along the Atlantic-facing coast of the Americas provided a comparable temperate climate with easy access to vast timber reserves and fertile soil. Those settling the coast and exploiting the timber supply had an economic advantage over other colonies, and even England, which allowed the mainland colonists

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16 Ibid., 14.
to operate and benefit outside of the economic bounds established by mercantile policy without feeling the pinch in the same way as colonies dependent on imports, especially timber imports, for survival. It could be argued that such power manifested as an independent spirit within the mainland colonists that caused them to chafe at imperial controls. That spirit is evident in the actions of the merchants and smugglers who defied the Navigation Acts to trade with the French Caribbean and the New Hampshire lumberjacks who violently opposed enforcement of the Broad Arrow Policy, but this thesis only suggests agreement with such an argument and does not take a position on it directly. The American settlers used their forest to meet domestic needs and expand their own commercial ventures. It is established across the literature of American history that only when the American colonists felt sufficiently oppressed by British economic policies did they decide to seek a political independence. This thesis shows that many colonists and merchants operated with veritable economic impunity for over a century despite policies that existed which should have restricted their actions and that attempts to control the use and sale of natural resources, timber among them, by a distant imperial government contributed to the feelings of oppression. Indeed, Richard Grove argues that “resistance to colonial conservation structures became a central element in the formation of many early anti-imperialist nationalist movements.”\textsuperscript{17} In this way, the woodlands drove the early American economy, which potentially contributed to a growing entrepreneurial and independent-minded colonist, and may have foreshadowed an independent American nation.

\textsuperscript{17} Grove, \textit{Green Imperialism}, 12.
The sentiment of American independence and resourcefulness is perhaps best captured in a statement attributed to Benjamin Franklin, “To be thrown upon one’s own resources, is to be cast into the very lap of fortune; for our faculties then undergo a development and display an energy of which they were previously unsusceptible.”

Surrounded by the vast forests hugging the coasts and filling the islands of coastal North America, his observation captures the ingenuity displayed by the settlers who built colonies on the remote and often unforgiving land and carved out of wood the foundation for a powerful economy and new nation. Gulick offers more to Franklin’s assertion. He claims that those who peopled America came from an environment where caution was necessary to preserve limited resources, or what Gulick terms, a “love of soil,” but quickly took for granted the vast and seemingly limitless supply. As a result, the character of the American people developed the attributes of “freedom, initiative, and self-reliance,” but also “ruthless competition, a get-rich-quick morality, and a wasteful destruction of natural resources.”

This is one explanation of how the American colonists came to favor their own domestic interests and economic development over the strategic needs of empire. The notions of self-sufficiency, or economic independence, fill volumes of literature describing the opening sequence that ultimately led to the American Revolution. Much of that literature assigns cause to British mercantile policies instituted by a distant government following the Seven Years War. The attitudes toward national independence and war rested with a desire for economic self-determination.

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The study of the environment through the commodification of natural resources, flora, and fauna offers a new way to view the historical terrain. Environmental histories bring human interactions with the land to the forefront of historical inquiry. In 2002, Ted Steinberg published a comprehensive environmental history of the United States with *Down to Earth: Nature’s Role in American History*. In it, Steinberg asserts that “it is quite simply wrong to view the natural world as an unchanging backdrop to the past.”

In an effort to correct the view of the “unchanging backdrop,” *Down to Earth* presents United States history “from the ground up.” Published in 2001, Alan Taylor’s *American Colonies: The Settling of North America* integrates the environment into a more thorough telling of the history of colonial North America by examining the “transatlantic flows of goods, people, plants, animals, capital, and ideas” and incorporated an environmental history that “considers the transformative impact of those flows on the landscape and life of North America.” While Taylor’s colonial history is not itself an environmental history, it indicates the growing importance of environmental history as a field by specifically highlighting its inclusion within the narrative of colonial America. When looking beyond an anthropocentric viewpoint to consider the environment as an actor upon the stage of human history, it becomes clear that man and the environment act upon one another, each often with observable consequence for the other. In this way, considering timber as a valuable and abundant commodity that contributed to the

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21 Ibid., vi.

economic vision of colonial America will uncover just such a mutually consequential relationship between man and the early modern environment of the colonial Anglo-Atlantic.

This thesis is organized into four chapters following the Introduction that explore the development and conflict of timber consumption in the early modern Anglo-Atlantic. The first chapter narrowly focuses upon the 1580s when the English made their first attempts at justifying, describing, and settling in North America. Within the context of that decade, the chapter examines the emerging triad of resource consumption as applied to American timber resources. It begins with an analysis of the broadly inclusive strategic vision of colonial settlement presented by Richard Hakluyt and his eponymous cousin. The chapter compares this with the observed goals of explorers, whose focus remained largely upon commercial values, and settlers, who also saw the commercial value of trees, but placed some emphasis upon domestic uses. The second chapter opens with seventeenth century settlement and describes the more obvious domestic value placed upon trees immediately following settlement compared with later establishment of the colonies when commercial values arise. This chapter also outlines the origins of mercantilism governing the growing commercial motivations of the colonists to demonstrate the rise of some forms of commerce to a strategic level of importance to the empire. The third chapter builds upon the foundation of mercantilism by tracing the progressive role of timber in the vast sugar trade of the late seventeenth and eighteenth centuries British Empire. The British sugar plantations of the West Indies did more to unite the economies of the Caribbean and the mainland colonies of the Anglo-Atlantic
through extensive importation of timber and victuals than any other agricultural commodity. The revenue from the commercial success of sugar made its continued production of strategic value to the state, and thus imperial legislation subordinated the commercial timber trade to strategic commercial interests. The fourth chapter also builds upon the foundation of chapter two. Rather than follow the conflict between strategic and commercial uses of timber, it looks to the shipbuilding and naval stores industries to illustrate not only the importance of shipping, but also naval defense. This chapter captures some of the social ramifications of elevating through legislative action the white pine tree to strategic importance for the maintenance of the British Navy over existing domestic pursuits.
Chapter 2


That which makes the worke more admirable in the Eyes of all beholders, mens habitations are cut out of the Woods and Bushes, neither can this place be entered by our English Nation, but by passing through a dreadfull and terrible Ocean.23

—Edward Johnson, Johnson’s Wonder Working Providence

During the sixteenth century, England experienced dramatic political and economic changes. At the beginning of that century, England occupied a place on the distant fringe of continental Europe, geographically and politically. The English rarely became involved in the politics of nations beyond its immediate neighbors to the north, Scotland, and the south across the English Channel, France. The support in England for the explorations made by John Cabot at the end of the fifteenth century suggests an interest in expanding beyond the edge of the European world. By the middle third of the century, under the guidance of King Henry VIII, England embarked on a journey that unmoored it from papal authority. This action instantly placed the newly Protestant nation at odds with Catholic Europe and necessitated a demand for defense in a way that England had never known before. Except for the brief reign of Henry VIII’s Catholic daughter, Mary, England continued a course that further divided it from the Catholic

powers, especially the standard-bearer of papal authority, Spain, under King Philip II.24 During this same period, the English expanded their influence across the Atlantic and into the politics of continental Europe. Following England’s break from Rome, the English made designs on exploiting Spanish wealth extracted from the lands and peoples throughout their Central and South American possessions; be it through raiding coastal communities or attacking the shipping returning to Europe with American spoils.25 Those seeking to justify an English presence in North America needed also to provide a financial incentive to make worthwhile supporting an endeavor to colonize North America.

The 1580s heralded numerous works that both described and encouraged English steps toward the establishment of their own American colony. Sir Humphrey Gilbert’s description of the bay claimed for the English colony of St. John’s in Newfoundland offers the first hints of an English understanding for the potential of timber.26 In the years that followed, Richard Hakluyt and his elder cousin each wrote pamphlets encouraging English settlement in America, in which they list both justification and the potential commodities that might enrich England.27 For most of the numerous potential timber

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products listed, Gilbert primarily identified strategic uses that might benefit an English maritime presence, but offered some potential commercial endeavors as well. Both Gilbert and the Hakluys expressed interest in the potential for ship timber and naval stores among the trees of coastal North America. Although none of them foresaw the coming of the Armada a few years later, such use of the wood could meet England’s future strategic needs—needs greatly expanded by the consideration of colonization due to the requirements of protecting nascent settlements and shipping and servicing the shipping infrastructure necessary to bring goods to England. They paired commercial objectives of settlement with the strategic needs of England in the initial justifications for colonization. By the middle of the decade, the English made their first attempts at colonization on Roanoke Island. Thomas Hariot wrote an account from his time living in the colony and makes clear the importance of timber to the survival and expansion of the colony, but his experiences in an active colony impressed upon him the value of domestic timber uses that are mentioned only briefly or are entirely absent from the works of the Hakluys and Gilbert. The different perspectives offered by these works also illustrate that divergent uses for timber were known and understood from the outset, yet none raised any concern for placing such an array of demands upon a single resource.


The English had worked through much of their easily accessible forests and required direct intervention by the government to ensure continued supply. During the time of the Roman Empire, forests covered most of England, but by the seventeenth century, estimates suggest that only about one eighth of England remained wooded, and the counties containing the majority of timber sources were reduced by more than half of their coverage during the Roman era.\(^\text{29}\) The roots of England’s emerging timber crisis originate in actions undertaken by King Henry VIII. In 1535, Henry VIII began the policy of stripping the Catholic Church of monastery lands throughout England, upon which grew extensive forests.\(^\text{30}\) The Tudor monarchs employed numerous policies affecting timber availability through the middle of the sixteenth century, varying from destructive to conservationist. Beginning with the marketing and sometimes slashing of oak forest to open new lands under Henry VIII, policies shifted under his children. Edward VI required timber harvesters to leave a minimum of twelve trees on any acre where cutting occurred. Queen Elizabeth I attempted to preserve trees valuable for ship timber near the coast, demonstrating foresight of the strategic needs of the navy, but also liberally granted rights to cut oak in other areas of the kingdom. By the time that the Spanish Armada arrived in the English Channel, substantial portions of England’s timber had already been destroyed. Timber harvesting reduced the Dunffield Forest from more than 100,000 oak trees in 1560 to just short of six thousand by 1587, one year before the Spanish Armada appeared in the English Channel. Royal licenses account for another

\(^{29}\) Albion, *Forests and Sea Power*, 97.

twenty thousand in St. Leonard’s Forest in Sussex.\textsuperscript{31} By 1580, Elizabeth I’s advisor William Cecil, First Baron Burghley, sought to curb the extensive consumption of timber. Following the defeat of the Spanish Armada, Lord Howard of Effingham, commander of the Queen’s Navy, reflected on the timber situation in 1591. He said of the crisis that he was “grieved to think of the state her woods are now in, and what want there is for building and repairing her ships which are the jewels of her kingdom.”\textsuperscript{32} The acute circumstances that followed the Spanish Armada provided a glimpse of what was to befall England in the following century, but it did not drive any new or drastic changes in policy or encourage renewed efforts at settlement to meet demand for timber.

Timber use, whether potential or actual, varied notably depending upon who did the telling. The explorers that crossed the Atlantic seeking locales for settlement tended to notice the commercial potential among the available trees, and to a lesser extent, the strategic value inherent in supporting shipbuilding and maintenance with naval stores. The first settlers, by comparison, concerned themselves with survival as much or more than commercial viability of timber. As one might expect, the writings of settlers with first-hand experience living on a distant Atlantic shore offer the greatest descriptions of domestic uses of timber. Those who concerned themselves with justifying colonization of North America cast a far greater light toward the strategic value such timber might offer a nation then facing a potential shortage after decades squandering excess. These observations offer only generalities, as each of the accounts included a cross-section of

\textsuperscript{31} Albion, \textit{Forests and Sea Power}, 123.

\textsuperscript{32} Lord Howard Effingham, quoted in ibid., 124.
the potential uses of timber, but all must have believed in or deliberately refrained from offering a dissenting opinion on the limitless forest availability compared to England since none made mention of any issue that might arise by burdening the forests so.

England’s First Colonial Claim: St. John’s Bay, Newfoundland

Following quickly on the heels of initial Spanish discovery and exploration of the Americas, the English turned their attention to the lands across the Atlantic Ocean. There existed among the English privateers and their financial sponsors a desire to expand English control into North America, which created an incentive to support colonization. Wood does not appear among the original motivations for colonization. The English instead justified colonization as a means to spread Christianity. In 1496, the English commissioned Venetian explorer John Cabot “to sail to all parts, regions and coasts of the eastern, western and northern sea… to find, discover and investigate whatsoever islands, countries, regions or provinces of heathens and infidels, in whatsoever part of the world placed, which before this time were unknown to all Christians” and “have given licence to set up our aforesaid banners and ensigns in any town, city, castle, island or mainland whatsoever, newly found by them.”

Although the English did not act on this claim for ninety years, Cabot’s journey forged the path and provided the justification for settlement that the English later seized upon for their timber resources.

In the summer of 1583, Sir Humphrey Gilbert and Sir Walter Raleigh led an expedition across the Atlantic in four ships, spending several months exploring the coast.

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of Newfoundland before returning to England. The location was not entirely original as
the English claimed a lengthy presence there. John Cabot, and later his son Sebastian,
explored much of the same coast for England beginning in the late fifteenth and early
sixteenth centuries and subsequently claimed it for England for future settlement.\(^\text{34}\)
Gilbert’s voyage intended to make good on that claim. Elizabeth I commissioned Gilbert
“to inhabit and possess at his choice all remote and heathen lands not in the actual
possession of any Christian prince.”\(^\text{35}\) In the “harbour called St. John’s,” they declared to
the merchants and fisher fleets therein their intention “to take possession of those lands to
the behalf of the crown of England” and effectively established the first English colony in
North America.\(^\text{36}\)

Beyond the abundant fishery within the Grand Banks southeast of St. John’s, well
known to the English by this time, Gilbert identified “the island commodities…to be
drawn from this land, as from the exceeding large countries adjoining: there is resin,
pitch, tar, soapashes, deal board, masts for ships, hides, furs, flax, corn, cables, cordage,
linen-cloth, metals, and many more,” immediately adding that “the trees for the most are
fir trees, pine and cypress, all yielding gum and turpentine.”\(^\text{37}\) They found interest in their
discovery of iron, lead, and copper ore, lamenting that they did not find silver and
continued the hope of reproducing the Spanish experience earlier in the century. They left

\(^{34}\) Haye, “A report of the voyage,” 231.

\(^{35}\) Ibid., 232.

\(^{36}\) Ibid., 234.

\(^{37}\) Ibid., 236. Soapash is a term describing the ash from burning wood, which could then be further
purified into potash or pearl ash for fertilizer and providing lye for the manufacture of soap.
St. John’s at the end of August 1583, after only a month of explorations. Wood products topped Gilbert’s list of potential commodities and he called attention to the value of certain tree species. That these men were mariners likely contributed to their keen awareness of the value of timber and the wood commodities for the construction and maintenance of ships and wood products available from local trees. Additionally, each would have been aware of the England’s festering relationship with Spain and recognized the strategic importance of maintaining a navy for both national and maritime defense. The list of identified commodities included several marketable goods requiring differing levels of additional processing for production, but the wood products listed are for commercial or strategic benefit, with soapash as perhaps the only commodity that might have domestic value for future colonists. Likely thinking only of the potential of the colony, and not the practicalities of carving a living from the Newfoundland shore, Gilbert’s report is silent regarding any deficiencies the colony might have in meeting the demands of the potential he assigned. It is not surprising that most of the potential wood products listed by Gilbert’s report suggest strategic uses of wood for maritime use or commercial uses designed to meet needs of the metropole. Such commercial uses can quickly become strategic in value once a nation turns from trade for monetary gain to dependence upon imports.

**Imagining the American Forest from England**

As the English interest in lands across the Atlantic grew, some sought to present justifications for the acquisition and settlement of North America. The potential in the
trees of North America was not unknown to observers in England hoping to capitalize on the experiences of Spain, but those who made it their business to present such matters, and offer justification for establishing colonies across the Atlantic, did not bring to the fore the vast forest wealth of the North American mainland. Instead they buried it in promises of commercial wealth wrapped in a veneer of religious platitudes. As religious conflict with Spain simmered, Elizabethan England sought an “increase of the force of the Christians” and “the glory of God by planting of religion among those infidels.”

Faith remained at the front of early justifications, but did not fill the volumes encouraging settlement. Commerce, not religion, formed the greatest bulk of the reasons provided. Writing at the height of the reign of Queen Elizabeth I, prominent lawyer and advocate of transatlantic colonization Richard Hakluyt outlined in 1585 a lengthy set of points justifying English settlement in North America. Like his previous works written in support of his colleague Sir Humphrey Gilbert’s recent expeditions, Hakluyt drafted this attempt to persuade interest in American colonization concurrent with Sir Walter Raleigh’s attempt on the mid-Atlantic coast of North America. Of the thirty one points he described, only the first two support a religious premise for colonization and two more—appearing nearly two thirds of the way though his list—address Hakluyt’s concern for the fortification and defense of future colonies, while the remainder specifically identify potential opportunities for commerce. Hakluyt’s descriptive outline of the numerous

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38 Hakluyt (the elder), “Inducements,” 34.


40 Hakluyt (the elder), “Inducements,” 34-38.
commercial benefits of colonization suggests that his religious reasons may have been subordinate to his true vision. He certainly recognized the importance of appealing to the religious sentiment to counter the perceived dominance of Catholic Spain, but explained colonization instead as a means to establish a source of raw material wealth “and a vent also of sundry our commodities upon the tract of that firme land.” This explanation suggests something of a proto-mercantile system where the colonies would provide an outlet for the products of England. It also clearly states his commercial justifications as in nation’s best strategic interest.

Hakluyt presented the forest of mainland North America as nearly an afterthought among the reasons to establish American colonies, but leans upon the forest to furnish early trade opportunities. His twenty-seventh point of thirty-one opened with the dismissive language, “since great waste Woods be there,” demonstrating a view that much of the vast woodland is likely of little specific value. His use of the term ‘waste’ to describe the wood of America implies excess, rubbish, or something to be removed, as if the trees were a burden or impediment to settlement—and indeed, they may have been from the perspective of the early English colonist in America. Despite the comparatively low placement in his list of his discussion of the trees, Hakluyt’s description of the initial trade carried by English merchants between the new colonies and England suggests an intent to rely heavily upon products of the forest. “Be it Flaxe, Hempe, Pitch, Tarre,

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41 Ibid., 34.

42 Ibid., 38.
Masts, Clap-boord, Wainscot, or such like,”\textsuperscript{43} suggested Hakluyt, “the like good we may receive…in returne for our course Woollen clothes, Flanels and Rugges.”\textsuperscript{44} It is worth noting that of the seven items specifically identified by Hakluyt as potential commodities for trade by new colonists, pitch, tar, masts, clapboard, and wainscot derive from the trees.

Much of Hakluyt’s visions for the use of American soil involved the displacement of forests. He imagined many potential uses for the land and the wood and produced a list of the “sorts of men which are to be passed in this voyage.”\textsuperscript{45} Hakluyt portrayed Virginia as a veritable land of milk and honey given the range of possible goods he described, the planting of specific agricultural commodities, and suggested products available from a newly hewn forest. His suggested plantings include olive and fig trees, wine grapes, sugar cane, woad, corn, and presumably flax, as he opined that “imploying the English women and the others in making of Linnen, you shal raise a wonderfull trade of benefit.”\textsuperscript{46} In many cases, accommodating the production of each of these products would require clearance of existing forest, but Hakluyt identified a few specific uses to be made of American trees. Despite the importance of timber in establishing a colonial foothold in North America and its distance from the primary set of reasons outlined, Richard Hakluyt

\textsuperscript{43} According to the footnotes in Envisioning America: English Plans for the Colonization of North America, 1580-1640, Peter C. Mancall defines “clap-boord” as “a narrow board of split oak, imported into England from northern Germany and used for making barrel staves” and “wainscot” as “a superior quality of foreign oak imported into England from Russia, Germany, and Holland and chiefly used for fine paneling.”

\textsuperscript{44} Hakluyt (the elder), “Inducements,” 35.

\textsuperscript{45} Ibid., 42.

\textsuperscript{46} Ibid., 42-43.
evidently considered the role of timber in supporting an established colonial economy, which suggests a passing recognition of the domestic value placed upon wood, but a clear favor for commercial benefit. According to Hakluyt, “sawed boords of Sassafras and Cedar, to be turned into small boxes for ladies and gentlewomen, would become a present trade” and asked of future colonists to “sell your woods and the labor of your cooper” for the making of barrels to transport salted hogs back to England, where they might be recycled “to serve for our home Herring-fishing.”47 Additionally, he imagined a growing industry of shipwrights and naval stores employing “waste people” for the “making of Ships, Hoies, Busses and Boats; and in making Rozen, Pitch and Tarre.”48 Hakluyt also categorized the fields of labor which would benefit an establishing colony. Nearly half of those identified involved a profession making direct use of timber and timber products, such as the “men cunning in the art of fortification” or the more obvious “shipwrights, to make barges and boats, and bigger vessels,” or indirect use, such as the “smithes, to forge the yrons of the shovels and spades,…and to mend many things” consuming large quantities of wood keeping the forge hot in so doing.49 Hakluyt’s depiction of colonization is thorough from the armchair perspective of one without the experience of carving a living directly from the land. His outline touched upon broad strategic and domestic uses of wood, but he expressed much more interest in developing a strategic level of commerce and the infrastructure to support it for the benefit of England than in

47 Ibid., 42-43.
48 Ibid., 38.
49 Ibid., 42-44.
reserving wood for the localized use of the colonists or for their own commercial interests.

In addition to finding work for England’s then rapidly growing population, Hakluyt’s purpose in encouraging the settlement of North America was to assert English economic independence through strategic control of its own economy. He hoped American colonies would help to shift the balance of trade such that continental Europe, specifically France, Spain, and Italy, called upon the English for goods rather than the reverse, even hinting at the deliberate neglect and exposure to hazard for foreign merchants. “For the more quiet exercise of our manurance of the soiles where we shall seat, and of our manuall occupations,” offered Hakluyt,

it is to be wished that some ancient captaines of milde disposition and great judgement be sent thither with men most skillfull in the arte of fortification; and that direction be taken that the mouthes of great rivers, and the Islands in the same (as things of great moment) be taken, manned, and fortified; and that havens be cut out for safetie of the Navie, that we may be lords of the gates and entries, to goe out and come in at pleasure, and to lie in safetie, and be able to command and to controle all within, and to force all forren navigation to lie out in open rode subject to all weathers, to be dispersed by tempests and flawes, if the force within be not able to give them the encounter abroad.

Hakluyt’s treatise reads like a blueprint for colonization and amounts to an early mercantile policy placing commercial control in English hands and a navy to enforce it. He took for granted the vast timber resources upon the shores of mainland North America, but did recognize somewhat the importance of trees to early colonization through his identification of both products and laborers intended to make use of the


51 Hakluyt (the elder), “Inducements,” 40-41.
forest. He foresaw future colonies threatened by European powers. Though writing before the coming Spanish Armada approached the English Channel, Hakluyt demonstrated a preference for strategic uses of timber in his awareness of the importance of a navy in protecting a merchant marine that would disseminate future colonial goods as well as the construction of fortifications and safe harbors, all of which would require prodigious use of available timber. Hakluyt firmly subordinated his strong support for commercial use of the woods to a strategic vision that benefits England, whether such uses ultimately saw a tree cut as a product for sale, cast into a fire to support manufacture, or cleared to make way for a new commodity. He offered little in support of domestic uses, such as new construction or heating, but it may be that he took such uses for granted within a land burdened by a resource of such remarkable versatility and abundance.

Richard Hakluyt’s interest in the world at the periphery of known geography inspired his better-known younger cousin of the same name to compile accounts of English explorations in an effort to demonstrate England’s maritime heritage and support the assertion of the country’s expanded presence abroad, especially in North America. The younger Hakluyt’s work caught the attention of Sir Francis Walsingham and Sir Robert Cecil, son of Elizabeth I’s advisor Lord Burghley, both of whom were close to Queen Elizabeth I and received Hakluyt’s dedication in his later work, *The Principal*


Navigations Voyages, Traffiques and Discoveries of the English Nation.\textsuperscript{54} Written in the mid-1580s like the later work of the elder Hakluyt, the younger Hakluyt’s Discourse of Western Planting generated a list of twenty-one reasons to pursue settlement in North America. Much like his cousin, Richard Hakluyt the younger identified “thinlargement [sic] of the gospell of Christe” as the first point, while the hope of countering Spain’s religious hegemony upon the sea and in America is clearly stated in the second point and is found scattered throughout many of the subsequent points.\textsuperscript{55} Also like his cousin, he revealed his expectation of economic independence in the third point, which states “that this western voyadge will yielde unto us all the commodities of Europe, Affrica, and Asia, as far as wee were wonte to travel, and supply the wants of all our decayed trades.”\textsuperscript{56} Such an appeal sounds nearly utopian in promise, implying its purpose as a tool to market the settlement of America to the monarch and potential investors in much the same way his cousin pursued. It is difficult to know the genuineness of either Hakluyt’s support of English religious fervor against Catholic Spain. Given the extent to which both describe the value of colonization as a commercial venture, it is fair to conclude that their real aspirations were in encouraging the development of the English economy reliant upon its own internal trade and the creation of commodities for export—the birth of English mercantilism.

\textsuperscript{54} Hakluyt (the younger), Voyages, Traffiques and Discoveries, 34, 36.

\textsuperscript{55} Hakluyt (the younger), “Discourse of Western Planting,” 46-48.

\textsuperscript{56} Ibid., 46.
Timber and England’s First Settlement: Roanoke Island

Although St. John’s holds the distinction of being the first colony claimed by the English, the first known English settlement intended as a permanent hold in North America arrived in 1585 with the establishment of colonists on an island off the mid-Atlantic coast of North America. Commissioned by Sir Walter Raleigh, an expedition led by Philip Amadas and Arthur Barlowe traversed a passage between the islands forming the Outer Banks of present-day North Carolina, entering in July of 1584 what was later known as Pamlico Sound. The account of Barlowe’s journey survives among Richard Hakluyt the younger’s *The Principal Navigations Voyages, Traffiques and Discoveries* as a letter to Raleigh detailing their discoveries in America. In it, he described encounters with the natives, trade, and the diverse assortment of foods available, but began with a practical description of the length of the island and approximate height of its hills, concluding with the observation of “valleys replenished with goodly cedar trees,” adding that they are “the highest and reddest cedars in the world.” Barlowe followed with a description of his experiences upon England’s future colony—an island on the north end of Pamlico Sound “which they call Roanoke.” Only after detailing his experience among the natives of the island does Barlowe make an attempt to describe the features of the island, starting with the “fertile ground, replenished with goodly cedars, and divers

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57 Arthur Barlowe, “The first voyage made to the coasts of America, with two barks, captains Mr Philip Amadas, and Mr Arthur Barlowe, who discovered part of the country now called Virginia, An 1584,” in Hakluyt (the younger), *Voyages, Traffiques and Discoveries*, 270-71.

58 Ibid., 271.

59 Ibid., 273.
other sweet woods,” which he speculated were full of “many other notable commodities,” but did not linger long enough to discover.\(^6^0\)

Barlowe’s account provided a location to realize Raleigh’s colonial aspirations. Potentially valuable commodities must have been chief among the interests of Barlowe and Amadas, though it is not known what incentive they may have had to encourage settlement in Pamlico Sound. It is possible that Barlowe’s account is sincere and honest in presentation as it fell to Raleigh to market the colony should he choose the site of their expedition for settlement. That he chose it over his own experience with St. John’s suggests a pragmatic approach rather than grasping at the first opportunity. Barlowe did not make any observations of Roanoke and its surroundings that would be of strategic interest to England, such as its control of important waterways or supply of timber for the English market. Instead, his descriptions suggest a predominately domestic use of the land and trees supported by commercial potential by hinting at a land which might achieve self-sufficiency with abundant sustenance, rich soil for establishing crops, valuable cedar, and a forest from which the colonists could draw the raw materials for construction. These reasons certainly informed and may have persuaded Raleigh’s decision to settle on Roanoke. If Raleigh’s values aligned differently than Barlowe, it is likely that Raleigh appreciated a location where future colonists might successfully support themselves in addition to contributing to the growing vision of a transatlantic English economy.

\(^{60}\) Ibid., 274-75.
Thomas Hariot, better known for the mathematical and scientific skills he demonstrated later in life, wrote of his experience and of the resources of Roanoke as one of the island’s initial settlers as a young man in 1585. Upon his return to England a year later, he offered his own assessment of the potential for the new colony. He described an island and surrounding environment with abundant potential in the language of a naturalist by attempting to catalog and categorize the flora and fauna he saw around him. Hariot expanded on the colony’s known commodities to illustrate its commercial value. Topping the list were grass silk and worm silk, both of which help to legitimize Richard Hakluyt the younger’s claim of replacing imports from Asia. Among the numerous marketable products available, he suggested the naval stores of “Pitch, Tarre, Rozen, and Turpentine” because “there are those kindes of trees which yeelede them abundantly and great store.” This foreshadowed the future value placed upon the great quantity of naval stores amongst the trees of the coastal mainland of North America. Hariot also considered the potential commodification of walnut oil “because there are infinite store” and suggested the export of the very cedar timber Barlowe enthused over for manufacture into fine goods such as furniture and musical instruments.

Marketable goods, nature, and ethnography were not the only purpose of Hariot’s report. He wrote an entire section devoted to the “commodities for building,” wherein he described the “divers sortes of trees for house & ship timber” in addition to the available

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63 Ibid., 11.
64 Ibid., 12.
“lime, stone, and brick.”

This section provides the most thorough description of available uses of native wood, accounting for thirteen different tree species and, according to Hariot, “many other strange trees whose names I knowe not but in the Virginian language.”

Hariot’s observation of the value of timber for construction of buildings and ships might be completely practical in appraisal, but is prescient in the future role trees and their timber played in the future development of English, and later British, colonies in North America and the Caribbean. Hariot’s account is the most detailed of all the sixteenth century English descriptions of colonial resources. Regarding timber, Hariot included the most thorough description of domestic use of native woods, likely owing to his direct experience as a colonists and the importance of wood to daily survival. While he certainly demonstrated an awareness of commercial and strategic uses, possibly brought about during the return voyage to England in 1586 aboard Sir Francis Drake’s ships returning from harrying the Spanish in the Caribbean, Hariot lacked an accounting of the extent of the forest to meet in any lasting way his array of potential commodities, much less any potential conflict between competing uses for the wood.

Although the first year of settlement on Roanoke proved unsuccessful and the colonists returned to England in 1586 with Drake’s expedition, Raleigh dispatched another attempt at colonization in 1587 intending the Chesapeake Bay as the

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65 Ibid., 31.

66 Ibid., 32.

destination.\textsuperscript{68} The new colonists, under the direction of Governor John White, reestablished at Roanoke due to navigational errors rather than pushing onward. In the fall of that year, White returned to England to secure a resupply ship for the new colony. He understood the need to grant flexibility to the colonists to see to their needs. Should the colonists need to depart the island, they agreed to carve their intended destination into wooden objects and trees.\textsuperscript{69} White arrived in England only to find the country scrambling to assemble a naval defense against a vast and newly constructed fleet of Spanish ships they called the Armada, with which Philip II of Spain intended to conquer England and realize his designs on the English crown. Weather had stymied the English attempts to bring the forthcoming naval battle to Spanish waters. Amidst the chaos, White managed to dispatch a ship to Roanoke only to have the crew turn to privateering and prey upon the defenseless Spanish merchantmen rather than see to the needs of the fledgling colonists.\textsuperscript{70} The defense of England galvanized the nation and better illustrated the need for a proper naval defense than at any time before and every English proponent of colonization writing before the Armada had mentioned ship timbers among the valuable uses of the American forests. Lord Howard of Effingham’s observations in 1591 of the sad state of England’s forests suggested the importance of timber for the Royal Navy


\textsuperscript{70} Herman, \textit{To Rule the Waves}, 152.
subsequent to the Spanish Armada in 1588 and became a firmly entrenched aspect of the
colonial policy governing North America by the end of the seventeenth century.\textsuperscript{71}

In 1590, John White finally returned to his colony to assess the state of affairs. What he found astonished him and his crew. The entire colony appeared vacated and the letters CROATOAN carved into a post and a tree provided the only evidence of their whereabouts, suggesting removal to nearby Croatoan Island\textsuperscript{72} and an interesting use of local trees. Construction uses and heating fuel presumably occupied the primary purpose of wood found in the area around Roanoke, as White described the empty houses he found, and it is unknown whether wood for any of the uses described by Hariot ever saw export to England.\textsuperscript{73} What is clear is that trees formed the literal foundation of the colony, framing houses, providing fencing, warmth, and a source of naval stores for the supply ships destined to visit the colony. The reason for the colonial exodus remains conjecture, but does provide an opportunity understand the way in which future colonies made use of available timber at their foundation.

**Conclusion**

In each case, from Richard Hakluyt the elder to Hariot’s report, the value of trees was recognized, but the value inherent in the uses described varied markedly. The two


\textsuperscript{72} Kupperman, *Roanoke*, 139. Croatoan Island is a long, narrow strip of land known today as Hatteras Island and forms a significant portion of North Carolina’s Outer Banks.

\textsuperscript{73} Ibid., 131.
Richard Hakluyts outlined a justification for colonial settlement based upon religious fervor and supported by commercial activity with a strong pragmatic recognition for the strategic value of colonial resources for England. The explorers who sought a place for England’s first colonies did not dwell overmuch upon the opportunities for expanding the domains of the faithful, but instead found themselves interested in the newfound land as a venue of raw materials for commercial purposes and support of the ships that would transport the goods. Raleigh used Thomas Hariot’s scientific and ethnographic catalog of Roanoke to emphasize the commercial value found in the colony and serve as an incentive to encourage additional colonists, though it might have been written of Hariot’s own accord to capture the colony as he genuinely saw it, regardless of how optimistic his vision of the colony’s potential. What remains clear is that wood is identified as a commodity with potential commercial and strategic value by those looking upon it from across the Atlantic and from the deck of a ship plying the coast, but as a vital and life-sustaining domestic resource for those carving a life from the shores of North America, as did the Roanoke colonists. The Hakluyts privileged status in England removed them from daily interaction with timber and left them with a purely academic understanding of its importance succinctly captured in their strategic and commercial plans for American wood. While both Sir Humphrey Gilbert and Thomas Hariot identify numerous commercial uses for the trees they saw, Hariot’s direct experience with a fledgling colony and John White’s casual observations of the ghost town left by vacated colonists stresses the critical importance of timber’s domestic practicality, rather than as a high-demand export commodity or strategic resource necessary to ensure the protection and demand of
the England. While all have in common an understanding of the value of wood from different perspectives, many of which overlap, none drew attention to the potential conflict inherent in placing multiple demands upon the same resource. They assumed either that sufficient wood existed to meet all possible needs, or each believed their particular accounting of timber use would be preferred, thus obviating any real conflict. Had the early explorers, settlers, and administrators the foresight to forestall an attitude in which the colonists looked upon the timber resources as endless, without concern for the limits and consequences of unconstrained cutting, they might have facilitated planning for such a contingency, but instead they may have inadvertently helped to create such an environment.
Chapter 3

BRANCHING OUT: CARVING AN EMPIRE AND ECONOMY

FROM THE ENGLISH ATLANTIC FORESTS

In a very little space, every thing in the country proved a staple-commodity, wheat, rye, oats, peas, barley, beef, pork, fish, butter, cheese, timber, mast, tar, sope, plankboard, frames of houses, clabboard, and pipestaves, iron and lead is like to be also …that this Wilderness should turn a mart for Merchants in so short a space, Holland, France, Spain, and Portugal coming hither for trade, shipping going on gallantly, till the Seas became so troublesome, and England restrain’d our trade.  

—Edward Johnson, Wonder-Working Providence

The seventeenth century dawned on an England without empire, but by the end of the century, the Atlantic veritably teemed with English colonies. During the sixteenth century, the English claimed St. John’s Bay in Newfoundland and made two failed attempts on the island of Roanoke, but did not successfully plant a permanent colony in North America. Instead of making another attempt, Sir Walter Raleigh abandoned the notions of settlement and pursued the promised riches attested in the legend of El Dorado. Only scattered seasonal settlements along the Newfoundland coast suggested an English presence at all. Attempts at settlement began anew when English explorer Bartholemew Gosnold obtained an exclusive charter for his twin Virginia Companies to settle the coast of mainland North America. While Gosnold never knew due to an early
death, Jamestown, under the Virginia Company of London charter, became England’s first successful permanent settlement in the New World. Jamestown led the vanguard of an English colonial empire hugging the eastern coast of North America and scattered islands of the eastern Caribbean from which sprang a timber dependent mercantile economy spanning the breadth of the north Atlantic.

Following England’s first furtive steps toward colonization in the sixteenth century, great strides were taken to establish a foothold across the Atlantic and accessible timber resources contributed to the early success of those colonies, but led to conflict. For some of the early settlers, trees provided the means of defense through the construction of fortifications. Trees also provided for ships, which granted an immediate freedom of movement, including the ability to evacuate if the need arose, as occurred with the Popham Colony and Bermuda. In most colonies, trees provided the bulk of the domestic colonial needs, from fuel to construction material, and what timber colonists used for

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defense and ship construction, they did for their own benefit and protection, rather than seeing themselves as an imperial investment of strategic importance. While the early colonies of the Virginia Companies remained beholden to produce a profit for the companies that funded them, it was not until the colonies became firmly established during the second half of the seventeenth century that the new imperial government began making policy that had an effect on colonial imports. The Anglo-Dutch Wars, which interfered with England’s access to Baltic timber, prompted passage of the Navigation Acts, the first of several rules established governing the use and trade of several specific “enumerated commodities,” among them timber. From English imperialism grew mercantilism, and the origin of the timber conflict in the Anglo-Atlantic as the strategic value of both the mercantilist economy and the growth of a Royal Navy to protect it became utmost in importance to the imperial government over commercial and domestic uses the colonists sought to make of competing supplies.

The Virginia Companies and Tree Consumption in the Early Colonies

The last decade of the seventeenth century did not witness an immediate return to colonization efforts, but the new century brought renewed interest in colonial endeavors. In the 1590s, Sir Walter Raleigh, perhaps England’s strongest advocate and sponsor of colonial development during the late sixteenth century, found himself lured into “Guiana and of the riches thereof” in search of the Spanish legend of El Dorado “for the greatness,


79 Ibid., 47; Adam Smith, Wealth of Nations, 466.
for the riches, and for the excellent seat” following the unsuccessful attempts on Roanoke.\textsuperscript{80} The birth of England’s Atlantic empire awaited Bartholomew Gosnold’s efforts in the first decade of the seventeenth century with the establishment of the twin Virginia Companies. Bartholomew Gosnold and Bartholomew Gilbert, son of Sir Humphrey Gilbert, resurrected colonization efforts in 1602 with the scouting of the New England coast where they established a small, temporary outpost on Cuttyhunk Island, located south of present-day Massachusetts, before returning to England with bounty from the coastal forests that included sassafras for market.\textsuperscript{81} A friend of Richard Hakluyt the younger and colleague of Raleigh, Gosnold hailed from a generation of colonial advocates and explorers whose attempts and justifications nearly brought about England’s first transatlantic settlement. Gosnold first financed an exploration of the New England coast, which John Brereton later popularized in his account of the voyage published in 1602.\textsuperscript{82} Within a few years, Gosnold acquired an exclusive charter from King James I to settle Virginia.

The new charter for settlement brought with it a revised method of financially supporting new colonial endeavors by leveraging the relatively new economic concept of the joint stock company then coming into vogue. Capitalizing on the model of the recently established East India Company in 1600, Gosnold established England’s third

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\textsuperscript{80} Walter Raleigh, “The discovery of the large, rich, and beautiful Empire of Guiana, with a relation of the great and golden city of Manoa (which the Spaniards call El Dorado),” (1595), in Hakluyt (the younger), \textit{Voyages, Traffiques and Discoveries}, 387, 389.
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\textsuperscript{82} Brereton, “Discoverie of the North Part of Virginia,” 327-28.
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joint stock company to raise the necessary funds for permanent settlement of Virginia.\textsuperscript{83} The twin companies, the Virginia Company of London and the Virginia Company of Plymouth, formed the governing institutions of initial settlement in English North America with geographic responsibility along the south and north coast, respectively.\textsuperscript{84} This made commerce the governor of new colonial settlements. Not until near the end of the century did the commercial interests between the colonists and the metropole diverge. The conflicting commercial and domestic uses of timber increasingly drew political attention and protection of strategic uses of timber, which set the stage for turmoil.

Jamestown serves as the traditional opening for a discussion of permanent English settlement in North America, bearing the burden of being the first to achieve sufficient permanence to serve as a foothold for further colonial expansion; however, it is not the first colonial location to foreshadow the timber-dependent colonial economy. Following by little more than half a year the expedition under the Virginia Company of London which established the Jamestown settlement, the Virginia Company of Plymouth embarked on a separate colonization effort in North America. In June of 1607, the ships \textit{Gift of God} and \textit{Mary and John} departed Plymouth, England “to settle a plantacion in the river of Sachadehoc,” known better as the Kennebec River in the present-day state of


\textsuperscript{84} McCusker, \textit{The Economy of British America}, 45.
Maine. The “northerne colony upon the river Sachadehoc” now bears the name of its patron and benefactor, Sir John Popham. By August, the settlers of the newly established Popham Colony identified a location for their settlement on the west bank of the Sachadehoc estuary. In a region that the native people called Sabino, the colonists took immediately to the trees to lay the foundation for a fort, storehouse, and “a small pinnace” by the end of the month. The colonists thought first to ensure their survival against a potential foreign power, while also seeing that there was a place to lay up their provisions for the winter and a means to explore or vacate the colony, if necessary. None of these uses quite captures a strategic or commercial benefit from the woods, but more of a domestic use for self-sufficiency and self-preservation. While the story of the Popham Colony ends only a year later in the summer of 1608 with the return of remaining inhabitants aboard a resupply ship and the newly constructed pinnace, its historical significance is not merely the failed sister settlement of the Jamestown. The “pretty Pynnace of about some thirty tonne, which they called the Virginia” that bore many of the colonists home is the first recorded ocean-going vessel constructed in English colonies and the first of many vessels with timbers cut from the New England trees.

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86 Ibid., 180.

87 Ibid., 172-73.


89 Strachey, *Historie and Travaile into Virginia Brittania*, 179.
A few years later, the unspoiled timber resources of an Atlantic island provided the means for one hundred and fifty stranded colonists, including women and children, to survive and escape to the newly settled Jamestown colony. William Strachey, the author of “A True Declaration of the Estate of the Colonie in Virginia” and whose account provides insight into the Popham Colony, survived the shipwreck which granted him the opportunity to witness and capture the incident in a letter addressed to an unnamed “excellent lady” and titled “A True Reportory of the Wracke and Redemption of Sir Thomas Gates, Knight.”

Writing as an observer, Strachey recounted the devastating storm and subsequent efforts to lighten and drain their leaking ship over a four-day period, whereupon they encountered Bermuda. Called “The Devils Ilands,” they found that “all the Divels that haunted the woods, were but heards of swine,” giving credence to Strachey’s assertion that the Spanish previously visited the island and left upon it their pigs to roam wild. In addition to all manner of sustenance enabling them to survive without suffering from want of food for ten months, their company found a “diversity of woods,” including “goodly Cedar.” They stripped their wrecked vessel of all valuables,

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91 Ibid., 276-80.


including unspoiled victuals and usable timber, and set about constructing necessary structures. “According to the direction of the three provident Governours,” Strachey reported, the trees “ministered materials for the building of two Pinnaces.”94 Ultimately, the stranded settlers were able to make their way to Jamestown, leaving in their wake the foundation of an English colony on Bermuda that remains in British possession to the present.95 The first accounting of extended settlement in Bermuda, even if less than a year, mirrors very closely the experience of the Popham colonists. Consistent with the accounts given by both Thomas Hariot and John White of Roanoke, many colonies, temporary or permanent, first cut trees for domestic uses primarily and foremost, which includes ship construction in this case as in Popham. Though both unintentional, Bermuda’s first exported product, like the Popham Colony before it, were ships carved from the native woods, though in neither case were the ships built for the direct commercial benefit of the sponsoring Virginia Company or for strategic benefit of the nascent English Empire.

The brief stories of the Popham Colony and the shipwreck upon Bermuda illustrate the productive capacity of the native woodlands and the utility offered by such an advantage. Unlike the subsequent decades, these early colonies remained unfettered by the commercial interests and government regulation that later controlled the destiny of American wood, leaving it free for the immediate uses deemed necessary by the colonists. These accounts show that colonists had the means to construct ships at least as


large as a pinnace with the standard tools available aboard ships bound for North America for colonization purposes. Additionally, there existed, at least in the two locations from which accounts survive, sufficient natural resources to support the construction of these vessels, as only specific woods are suitable for ship construction. That the colonists constructed ships, for both convenience and necessity in each respective case, provides evidence for one of the significant hypothesized uses proposed for the trees of North America and a major colonial industry—shipbuilding. Arguably, the construction of the Virginia in the Popham Colony foreshadowed the foundation of the first real industry to take root in England’s mainland colonies, which supported the merchant marine and mercantile economy of New England and Great Britain.

**Deforestation and the Timber Problem**

The vast woodland wealth captivated many early explorers and settlers of North America. John Smith of the Virginia Company of London was taken with the seemingly endless forest, yet he may have sensed the possible winds of change that might bring to the fore the future importance of the trees in America, observing:

> Of woods, seeing there is such plenty of all sorts, if those that build ships and boats, buy wood at so great a price, as it is in England, Spaine, France and Holland, and all other provisions for the nourishment of mans life, live well by their trade; when labour is all required to take these necessaries without any other tax, what hazard will be here but to do much better, and what Commoditie in Europe doth more decay than wood.  

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While hinting at the inadequacy of the English woods to sustain the demands placed upon them, Smith encouraged those making their living by wood to seek a new life in America. He also demonstrated more optimism than realism. Smith failed to follow his logic to the natural conclusion, which would have led him to understand that transplanting the woodcutting practices in Europe to America could have no other consequence than to bring about the same localized deforestation, scarcity, and dependence upon distant sources that was then befalling England.97

By the middle of the seventeenth century, England’s failing timberlands and the rising “timber problem” forced the country to look beyond to distant shores for new supplies to meet its needs with increasing fervor in the seventeenth century. An early example of England’s arboreal subjugation is found in *Ireland’s Natural History*. Written by Gerard Boate in 1652, he described how quickly the Irish forests fell over the preceding half century, stating that the “felling [of] so many thousands of trees every year … made [Ireland] so bare of woods in many parts, that the inhabitants do not only want wood for firing…but even for building,” adding that “you may travel for whole days without seeing any woods or trees.”98 Boate did not expand upon the uses made of Ireland’s woodland, leaving only speculation regarding the reason for the rapid deforestation. Boate did clearly illustrate the conflict immediately apparent in the likely commercial or strategic uses made of Ireland’s trees and the domestic uses sought by the inhabitants. Certainly the newly settled North American coast contained many times the

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tree resources of Ireland, and thus would play out far slower, but a few English colonies would share Ireland’s fate and alter the political and economic dynamics of the Anglo-Atlantic colonial world.

In present parlance, deforestation conjures images of vast swaths of forest cleared through mechanized harvesting or raging infernos resulting in denuded hillsides and parched ground. To be sure, deforestation occurred extensively in Europe and began throughout the Atlantic river valleys and islands of North America during the seventeenth and eighteenth centuries, but in few cases were these examples of deforestation as stark or complete as those created by modern techniques. In the period before about 1800, deforestation usually remained localized to easily accessible and transportable timber. This meant that woods often receded as agricultural growth expanded into the hinterlands. Often, this occurred first along the coastlines and riverbanks where access made the logs easy to cut and transport to a mill or port for transshipment elsewhere.99

While not as devastating as modern forms of deforestation, localized deforestation created a host of additional problems in the Anglo-Atlantic colonies during the seventeenth and eighteenth centuries. This is not to imply that the English colonies were the exclusive province of deforestation in the Americas. Some of the same factors that contributed to localized deforestation in the English colonies also affected other European colonies.

The Growing Timber Economy of North America

“Before we present to you the matters of fact,” opens John Smith in his *Generall Historie of the Bermudas*, “it is fit to offer to your view the Stage whereupon they are acted: for as Geography without History seemeth a carkasse without motion; so History without Geography, wandreth as a Vagrant without a certaine habitation.”\(^{100}\) Smith’s observation is especially apt when discussing the range of the English Atlantic colonies established in the decades following Jamestown. Permanent settlement in the early seventeenth century spanned across an ocean and from the island of Barbados deep in the tropics to St. John’s in Newfoundland at the southern extent of the arctic sea ice. Such a wide array of settlement from the tropics to the subarctic meant that the fledgling English colonies were commercially diverse. Such specialization drew some of the colonies together where one produced commodities lacking in another. Despite the wide latitude separating the early colonies, they all shared the potential offered by their abundant woodlands. Early explorers “found a wooded coast from the Strait of Belle Isle, 52 degrees north latitude, to the mouth of the Rio de la Plata, 35 degrees south latitude, practically without break.”\(^{101}\) William Strachey described the perceived endlessness of the American forest, stating that “there are pines infinite, especially by the sea coast, and many other sortes.”\(^{102}\) Such an account provides some insight into perhaps one reason for

\(^{100}\) John Smith, *The Generall Historie*, vol. 2, 331.


\(^{102}\) Strachey, *Historie and Travaile into Virginia Brittania*, 130.
the wanton use and sometimes outright destruction of vast timber supplies in early America.

In the tradition of Barlowe and Hariot, many early descriptions of English settlements in America reference the vast woodland resources and often catalog the potential economic benefits of the land beneath them or the wood within them. As Hariot described of his year in Roanoke, trees served a domestic purpose in providing basic infrastructure needs. During this period, colonists used wood as the predominant source of fuel and building material, allowing warmth, shelter, and food. John Smith, reflecting on his time in Jamestown and exploring the Chesapeake during the first decades of the seventeenth century, wrote of the Jamestown settlers that “the greatest labour they take, is in planting their corne, for the Country naturally is overgrowne with wood.” Smith added that the best land for cultivation is identified by its “greatnesse of trees.” As Smith observed, trees often grew where other uses were desired, making them as much of a hindrance to other economic pursuits as they were an engine of economic growth. For new settlements, particularly agricultural settlements, colonists frequently removed trees to allow for a new land uses. Tree removal sustained agricultural development, since colonists used the timber harvested for construction material, both structural and naval, the potential for firewood, and the potash created by burning the remaining trees, which enriched the soil. In Virginia, John Smith noticed that “near their habitations is little small wood or old trees on the ground by reason of their

103 Hariot, *the New Found Land of Virginia*, 31-33.

104 John Smith, *The Generall Historie*, vol. 1, 126.

105 Ibid., 46.
burning of them for fire.”\textsuperscript{106} In this way, trees provided the fuel and material for the new (frequently agricultural) enterprises then taking root on the recently denuded land.

Jamestown quickly expanded to incorporate much of the surrounding area, first establishing a subsistence agricultural economy based upon a domestic use of available trees followed by a tobacco export economy based upon land cleared of trees. Likely, trees bearing valuable wood were cut and used first with the remainder burned in the fashion described by Smith. Smith also wrote of the trees among the rivers of the Chesapeake Bay and “the commodities in Virginia… that may be had by Industrie.”\textsuperscript{107} In the early years following the establishment of the Jamestown settlement, colonists constructed several small vessels to transport tobacco from the outlying plantations to Jamestown for transshipment.\textsuperscript{108} Additionally, they built at least one shallop.\textsuperscript{109} Certainly, a wide array of timber was useful for the construction or maintenance of naval vessels, both merchant and military. England’s own timber problem created a natural outlet for the mainland colonies to export their most abundant natural resource.\textsuperscript{110} Strachey captured this succinctly in his description of exports from early Jamestown in 1609. Strachey wrote of the wood that:

\begin{quote}
the use of which are commodious for shipping, pipe-staves, clapboard, yards and masts for shipping, and those here are so faire and large, as a ship of three
\end{quote}

\textsuperscript{106} Ibid., 131.

\textsuperscript{107} Ibid., 60.

\textsuperscript{108} Ibid., 299.

\textsuperscript{109} Shallops were small boats with a single mast that could be rowed and were usually carried aboard larger ships in pieces, from which it could be easily reassembled. They were used for light transport and fishing.

\textsuperscript{110} Defebaugh, \textit{The Lumber Industry}, 274, 294.
hundred tonne burthen, called the Starre (sent thither the last yeare upon purpose fitted and prepared with scupperholes to take in masts), was not able to stowe forty of the fower score, unles they should cut them shorter, which is a commoditie, rightly understood, of such moment for this kingdome (all the easterly contrys from whence we have hitherto had them, so ympoverished and wasted as they are not able to furnish his majesty’s navie, witness how hardly were obteyned those which we had last from thence, and those upon his majesty’s private and particular letter to the king of Denmark) as were ynough (yt may be boldy sayd) to make good the whole charge of our plantation.\textsuperscript{111}

Strachey, as well as John Smith, recognized the timber problem brewing in England and its potential effect upon the Royal Navy, as well as shipping in general. While Richard Hakluyt a quarter century before suggested that timber might serve among the valuable reasons to seek plantation in America, Strachey’s personal experience in Jamestown supports Hakluyt’s assertion and goes further to imply that timber exportation could be the primary purpose of the colony.

After the unsuccessful gambit with the Popham Colony as the Virginia Company of Plymouth, the newly reformed Plymouth Council for New England found purchase in North America with the establishment of Plymouth in 1620. Established on a subsistence economy like Jamestown, Plymouth struggled to find an export commodity to support itself and ultimately settled on fishing, but the first export return shipment of commodities to England included, in addition to “three hogs-heads of Bever skinnes,” a load of “Clap-boord, Wainscot and Wallnut.”\textsuperscript{112} Colonists in Plymouth consumed trees in domestic endeavors in a manner similar to that described by Hariot of the colonists in Roanoke, and similar to Hariot’s suggestions, commoditized the seemingly endless forest

\textsuperscript{111} Strachey, \textit{Historie and Travaile into Virginia Brittan}, 130.

\textsuperscript{112} John Smith, \textit{The Generall Historie}, vol. 2, 65.
around them. The first two years saw the colonists living off the land. John Smith noted that “it is a wonder how they should subsist, much lesse so to resist the Salvages, forfitie themselves, plant sixtie acres of Core, besides their Gardens that were well replenished with many usuall fruits.”\(^{113}\) Without wood for housing, fuel, and fortifications, much less for repairs of fishing vessels and the materials for fishing equipment, the colony may have failed altogether. Within just a few years, the wood exports of the Plymouth colony continued to expand. By 1623, Plymouth exported clapboards\(^{114}\) aboard the ship *Anne*. The colony also turned to ship construction as a means to enhance their fishing and export industry. The early ships constructed in the Plymouth colony were shallops used for fishing and to transport beaver fur from Maine in 1625. Not until the 1630s did New England set upon the path of building larger vessels.\(^{115}\) The first was the thirty-ton bark, *Blessing of the Bay*, launched into the Mystic River at Medford in the Massachusetts Bay Colony on July 4, 1631.\(^{116}\) This was followed in 1633 by the sixty ton *Rebecca* at Medford and the one hundred twenty ton *Desire* in 1636 at Marblehead.\(^{117}\)

Just as John Smith’s writing does for the early Chesapeake Bay, John Winthrop’s journal provides insight into the first ships and external economy of Massachusetts. Winthrop’s evidence of early shipbuilding and shipping in the Massachusetts colonies

\(^{113}\) Ibid., 70.

\(^{114}\) Clapboards are boards from which barrels are manufactured by coopers.


\(^{117}\) Ibid., 111, 187.
supports the conclusion that the need for inclusion in the growing mercantile order of the Anglo-Atlantic thrust them into a position of dependence upon the forest. While they managed to survive off the forest, sea, and natives for two years without resupply, the colonists sought more than subsistence. Exporting timber, fish, and provisions required ships, which in turn required the forest surrounding the New England colonies. Many colonial-built ships were marketed for overseas trade, particularly for moving goods across the Atlantic from southern mainland of North America or the Caribbean to Great Britain. Of all of the colonies, Massachusetts reigned as the greatest source of colonial ships and the New England colonies provided the majority of the carrying capacity among English colonies. The authority on shipbuilding in the American colonies, Joseph Goldenberg, argues that cost may have been a significant factor explaining the prevalence of New England ships during the eighteenth century. Additionally, New England merchants were willing to accommodate payments in product instead of cash. They developed a trade relationship with the West Indies quickly, evidenced by Winthrop’s mention of the Desire’s return in 1638 “from the West Indies after seven months,” from which it came bearing “some cotton, and tobacco, and negroes, etc. …and salt from Tertugos” and of a “a small bark from the West Indies” which “sold his indico and sugar here for £1400, wherewith he furnished himself with commodities, and departed again for the West Indies.” As governor of the Massachusetts Bay Colony in

118 McCusker, The Economy of British America, 94.
119 Goldenberg, Shipbuilding in Colonial America, 30.
120 Ibid., 96-97.
1641, John Winthrop observed that the only valuable commodities produced within his colony for export were “fish, clapboards, plank, etc.” and that his people ought “to look out to the West Indies for a trade.”\textsuperscript{122} This account suggests a very early commercial demand for wood in the West Indies and at least an indirect tie to the primitive sugar plantations within less than two decades of colonial founding. From the early efforts by New England merchants to find a market for a readily available resource sprang a long history of trade between New England and the English West Indies.\textsuperscript{123} The West Indies as an outlet for New England’s wood also helped lay the foundation for a dependence upon imported wood in the West Indies to sustain the vigorous appetite for wood created by the increasing population and demand for commodities produced there. Starting as a commercial venture, the importance of wood to the West Indies with the growth of the sugar economy in the late seventeenth and eighteenth centuries made the desire for unrestricted commerce counter-productive to the strategic demands of the growing mercantile economy. It also took a toll on the mainland forests, although opportunity for export may have simply provided an outlet for much of the timber produced from clearances in New England.

The seventeenth century witnessed tremendous expansion of English presence in North America and the Caribbean. Beginning with Jamestown in 1607, the English established a flurry of new and successful colonies along the western coast of the Atlantic

\textsuperscript{121} Hosmer, \textit{Winthrop’s Journal}, 260, 309-10.


\textsuperscript{123} McCusker, \textit{The Economy of British America}, 94.
Ocean in the following decades. In nearly every instance, the motivation for colonization rested on the potential for commerce, as nearly every colony established owed its origin to a proprietor or joint stock company seeking a positive return on their investment. As already explored, the Virginia Company of Plymouth—newly reminted as the Plymouth Council for New England under the Charter of New England—successfully settled Plymouth in Massachusetts Bay in 1620 and established the Province of Maine two years later.124 The London and Bristol Company established Ferryland in Newfoundland in 1621.125 By the middle of the decade, the English established a presence in the West Indies. Refugees from the failed settlement of Guiana on the South American coast permanently settled the island of St. Kitts among the Lesser Antilles in 1623 and the neighboring island of Nevis five years later. By 1627, the English colonized the island of Barbados, the easternmost of the Windward Islands of the West Indies, under conflicting claims of proprietorship.126 The decade closed with new colonies in Massachusetts Bay at Salem in 1628, which merged the following year with the newly founded Massachusetts Bay Colony governed by the Massachusetts Bay Company.127 Trade emerged between

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the colonies in Massachusetts and those in the Caribbean within the following decade with timber among the earliest products exported from Massachusetts Bay, demonstrating a rapid movement toward commercial use of timber after the colony’s initial domestic needs were met. Additional English colonies expanded throughout the Atlantic during the middle of the seventeenth century. New island colonies in the Caribbean Sea at Montserrat, Antigua, and Anguilla were supplemented with the settlement of the Bahamas by settlers from the English colony on Bermuda and the occupation and acquisition of Jamaica and the Cayman Islands. Colons on the coasts of mainland North America swelled inland and new colonies filled the spaces between until the English acquisition of Dutch territory coupled with more than a dozen new colonies created a contiguous English presence from St. John’s in Newfoundland to Spanish Florida by the end of the century, interrupted only by the French settlements in Acadia.

The circumstances governing settlement of the mainland colonies after the 1620s varied, including ideological reasons among some of the New England settlements, strategic reasons as in the case of Maryland and the conquest of Dutch territory, and reward, such as the Carolinas to the Lords Proprietors. In the case of the Caribbean colonies, settlement of Montserrat and Antigua generally followed from the English islands of St. Kitts and Nevis, while the successful attack on Jamaica came only after

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129 Taylor, American Colonies, 136-37, 223; Koot, Empire at the Periphery, 106-9.
English designs on the Spanish-controlled island of Hispaniola failed to bear the fruit of Oliver Cromwell’s “Western Design” to disrupt Spanish trade and expand English mercantile hegemony in the West Indies.\(^{130}\) In every case, both mainland and West Indian, the new English colonies established economies based upon the trading goods produced locally for those produced elsewhere. In the case of wood, the mainland colonies, and especially New England, exported timber and wood products from their plentiful forests to the islands of the Caribbean to meet the increasing needs of planters among the islands.

**Clearing Barbados**

The development of the Caribbean followed a quick pace mirroring the rapid transition from domestic use of native woodlands to commercial uses. The initial presence in the Caribbean was more about survival than profit, but profit remained the driving motivation for continued settlement. Of the many accounts left by explorers and historians from this period, they are all in accord on the immense potential for wealth locked in the vegetation and soil of the region. Every account provides a list of the existing commodities ripe for harvest or those that they thought could be grown once the land was sufficiently cleared. Some of them account for specific tree species, such as mahogany, or speak of the woodland wealth generally. Richard Ligon, for example, who lived in Barbados from 1647 to 1650, devoted eighteen pages of his history, *A True and Exact History Of the Island of Barbados*, to the description of the “beauty and use” of

those trees providing the “most and greatest esteem in the island.”\textsuperscript{131} Given the agricultural nature of the colonies, the profit motivation could not have been realized until sufficient clearances were made and the agricultural development grew beyond a subsistence level.

The Lesser Antilles did not immediately host sugar cultivation, instead focusing on matters of subsistence early on, but kept an eye toward profit. After the English decision to colonize Barbados, in 1627 “…Ships were sent, with men provisions, and working tooles, to cut down Woods, and clear the ground, so as they might plant provisions to keep them alive, which, till then, they found but straglingly amongst the Woods.”\textsuperscript{132} Inspired by the difficulties and changes taking place and writing nearly a century later, Daniel Defoe captured those struggles in microcosm in his famous work \textit{Robinson Crusoe}. In it, Defoe addresses the themes of survival and isolation against the natural world, examining the “minutiae of society reduced to its bare essentials.”\textsuperscript{133} As played out in the colonies of Roanoke, Popham, Bermuda, and Jamestown, the settlement of Barbados turned to the native forest for domestic use, first for immediate survival, and then cleared it in the way described by Smith in Jamestown. Ligon wrote that “the Woods were so thick and most of the Trees so large and massive, as they were not to be falne with so few hands; and when they were laid along, the branches were so thick and

\begin{footnotesize}
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\item \textsuperscript{131} Richard Ligon, \textit{A True and Exact History Of the Island of Barbados}, (London: Peter parker, 1673) Internet Archive, \url{https://archive.org/details/mobot31753000818390} (accessed October 6, 2012), 75.
\item \textsuperscript{132} Ibid., 24.
\item \textsuperscript{133} Grove, \textit{Green Imperialism}, 228.
\end{itemize}
\end{footnotesize}
boysterous, as required more help.”\textsuperscript{134} In the same work, Ligon expressed the extent to which some trees awed observers with their majesty, claiming of the palmetto royal that there was “not a more royal or magnificent tree growing on earth, for beauty and largeness not to be paralleled,” adding, “if you had ever seen her, you could not but have fallen in love with her.”\textsuperscript{135} His account provides a rare example of trees depicted merely for their appearance rather than commercial use, but also foretells of the coming market in exotic plants among the wealthy where beauty or unique appearance became commoditized. Major John Scott, an English officer serving in Barbados wrote in 1667 of the “Abundance and Quality of [Trinidad’s] Woods and Trees, the most excellent in all the World….The very Mountaines Covered with Large Cedars, White wood & Excellent Timber for building, or Sheathing of Ships…”\textsuperscript{136} By the time the English firmly held a presence in the Caribbean, the valuable uses of wood—domestic, commercial, and strategic—become apparent.

The rapid clearance of Caribbean trees did not come without consequence. Barbados provides one of the earliest examples of extensive deforestation and the resulting shift toward timber imports. Once completely forested, sugar plantations quickly covered the island of Barbados so thoroughly that most of its natural tree resources were exhausted within a single lifetime. Settled by the English in 1627,

\textsuperscript{134} Ligon, \textit{History Of the Island of Barbados}, 24.

\textsuperscript{135} Ibid., 75.

Barbados had little space for new plantations by the 1680s. Richard Ligon, who had no trouble finding trees and gushing over their greatness, expressed also how scattered they became by the time of his experience in Barbados less than a quarter century after settlement began. Using maps produced by geographer David Watts of the vegetation of Barbados between 1627 and 1800 and supplemented with evidence written by Ligon, J.R. McNiell concludes that only an estimated sixty percent of the original forest lands remained after only twenty years of settlement. McNiell is unable to identify any other sources mentioning the forests of Barbados after 1665, stating that the Barbadians began looking beyond their island for timber supplies by 1666. As the easily accessible timber became scarce, leaving the small woodland of Turners Hall Wood as the islands last significant stand, inhabitants turned to other colonies to provide timber, especially from New England and the nearby island of Tobago.

Such widespread clearance of Barbados’ forests could have only occurred if the inhabitants either perceived the trees as endless or valued short-term profit over long-term sustainability. Surely many inhabitants subscribed to one or both of these possibilities, or more likely, little thought was given to the consequences of their rash actions, and instead the inhabitants chose to confront the problem of scarcity when it arrived. Much as Luther Gulick surmised, the development of a culture of exploitation

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138 Ligon, *A True and Exact History Of the Island of Barbados*, 72-79.

139 McNiell, *Mosquito Empires*, 27; Grove, *Green Imperialism*, 68-69. Grove argues on 277 of *Green Imperialism* that the descriptions of Tobago during this period are thought to have influenced the writing of Defoe’s *Robinson Crusoe* in 1719.
based upon the initial observation of vast timber resources provides the most likely explanation. As the trees receded, the culture remained, chasing the trees further afield. Local councils upon the island made some efforts to restrict cutting, resulting in nearly all plantations setting aside woodlots, but these measures did little to slow the progress in motion.\textsuperscript{140} By the time Barbados needed to look beyond its shores for wood, the perpetuation of profit became the motive. Moderation, therefore, had no place where the pursuit of money was concerned and the consumption of wood for the commercial benefit of the lucrative sugar industry trumped domestic use and the strategic benefits of timber security. Since sugar had not yet taken its place in the hierarchy of commodities critical to the imperial economy, policies governing the acquisition and distribution of timber within the colonies had not arisen, leaving the colonists free to trade without imperial constraint.

The Rise of Mercantilism

Mercantilism, or the mercantile system, dominated European and colonial economics from the sixteenth through the eighteenth centuries. Adam Smith, perhaps mercantilism’s greatest critic, described it as being based upon two principles: “that wealth consisted in gold and silver, and that those metals could be brought into a country which had no mines only by the balance of trade, or by exporting to a greater value than it imported.”\textsuperscript{141} To accomplish this, it fell on governments of the time to “diminish as

\textsuperscript{140} McNeill, \textit{Mosquito Empires}, 27.

\textsuperscript{141} Adam Smith, \textit{Wealth of Nations}, 330.
much as possible the importation of foreign goods for home consumption, and to increase as much as possible the exportation of the produce of domestic industry.” Given this outline of mercantilist principles, Smith concluded that the “two great engines for enriching the country, therefore, were restraints upon importation, and encouragements to exportation.” As Smith noted, mercantilist nations accomplished this by improving the value of imported commodities, usually through the production of manufactured goods from raw material or unimproved resources. The cheapest source of raw material is usually the natural resources of unexploited lands, which helped to drive colonial settlement and development. Such a system led to the notion that any nation increasing its wealth does so at the expense of a trade partner. In England, trade restrictions were routinely applied to the colonies to ensure maximum profit for the imperial core.

In the excellent survey of the Anglo-Atlantic economy, John McCusker and Russel Menard summarize the advent of mercantilism as “little more than a shared perception among those who controlled northern and western Europe from the sixteenth to the eighteenth century that foreign trade could be made to serve the interests of government—and vice versa.” While the term mercantilism is actually anachronistic since it was unknown until economic reformers provided the label, the explanation offered by Adam Smith serves well enough to convey the nature of the mercantile

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142 Ibid.

143 Ibid.

144 McCusker, *The Economy of British America*, 35.

system. Mercantilism sprang from the idea that wealth was measured in accumulated precious metal, which differed markedly from the feudal society that dominated Europe during much of the preceding millennium where acquisition of land proved greater in importance. Interestingly, land proved the key element in the procurement of the vital natural resources, such as timber, necessary to sustain a market economy. A nation’s best option in a mercantile system rested in finding a way to obtain new sources of natural resources without relying upon acquisition from another nation. The solution seems obvious in retrospect: colonization. Under mercantilism, colonies provided more than a source of precious metals and raw materials for manufacturing. They provided a destination for goods manufactured in Europe. Daniel Defoe, who wrote numerous works about economics in addition to his better-known work *Robinson Crusoe*, made an apt observation in *The Complete English Tradesman*. While describing what he called “the dignity of trade in England more than in other countries,” Defoe argues for mercantilist trade with the analogy that “an estate's a pond, but a trade's a spring: the first, if it keeps full, and the water wholesome, by the ordinary supplies and drains from the neighbouring grounds, it is well, and it is all that is expected; but the other is an inexhausted current, which not only fills the pond, and keeps it full, but is continually running over, and fills all the lower ponds and places about it.”

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England’s rise to commercial prominence relied upon three crucial developments: the creation of new companies organized along new economic principles; the rise of the shipping industry; and the protection offered to English vessels by government regulation. The English developed an industrial base at home for their growing textile production, established a strong colonial presence ensuring a reliable source of raw materials, and, much more important in later years, a captive consumer market. English colonial growth led to an increase in the number of commercial vessels needed to carry trade and a growing professional navy to protect it. This made access to the Baltic Sea an important part of the English strategy to secure timber for naval and other purposes. The King of Denmark controlled both sides of Kattegat Sound, the narrow body of water between Jutland and the Scandinavian Peninsula that connected the North Sea to the Baltic Sea, collecting dues from all vessels traversing the waterway. The English did not feel threatened by the Danes’ control of Kattegat Sound so long as they remained neutral with regard to commercial affairs. During the rule of Oliver Cromwell in the 1650s, the English developed the policy of armed conflict in the Baltic should it appear that access might become restricted or closed to English merchants.

The best quality timber in Europe lay in the Mediterranean, but a wide choice of markets precluded many of the western European nations from acquiring it at a competitive rate, leading some of those nations to purchase wood from the Baltic region.

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150 Ibid., 166.
instead. Many ports in Norway and on the Baltic Sea offered for sale timber harvested from the interior of the continent. While American timber was cheaper and sometimes higher quality, shipping rates across the Atlantic made the entire venture more expensive than wood harvested in the Baltic.\textsuperscript{151} Due to relatively easy access and lower shipping rates, the English turned to Nordic and Russian timber imports to meet the demand that exceeded what the domestic timber supply produced. In 1579, preceding the advent of the joint stock company, the Fellowship of Eastland Merchants formed as a regulated company in eastern England and became the primary sources of Baltic naval products for nearly a hundred years.\textsuperscript{152} Yet, England was not the only western European nation looking to the Baltic Sea ports to meet their needs. France, Spain, and Holland also looked to the Baltic for naval products.\textsuperscript{153} The Royal Navy used “brackers” to assess the quality of timber in a port before it was exported for use. A preference for wood imported from the eastern Baltic port of Riga developed because of their regular use of brackers, where bureaucracy and carelessness produced unreliability in many other ports.\textsuperscript{154}

\textbf{Timber and the Anglo-Dutch Wars}

The mercantile system impacted timber acquisition directly. A brief look at the Anglo-Dutch Wars will help to explain the role of timber in England’s developing mercantile system. The Dutch, another timber-poor naval power, were the greatest

\textsuperscript{151} Ibid., 152.
\textsuperscript{152} Ibid., 150.
\textsuperscript{153} Ibid., 140.
\textsuperscript{154} Ibid., 148-49.
commercial rival of the English in the middle of the seventeenth century and the rivalry extended to access and control of timber resources. The Dutch attributed their trade successes to relative peace and open trade between maritime nations. They “abhorred war at sea” and “feared the development of economic nationalism, as defined by import and export tariffs and the closing of foreign ports to nonnative shipping.”155 During the first half of the seventeenth century, the Dutch made every effort to secure a dominant role in the carrying trade of nearly every lucrative commodity in Europe, including timber. As early as 1600, Sir Walter Raleigh noted the inroads the Dutch had made in the timber trade in a long letter to Queen Elizabeth, observing that “the exceeding Groves of Wood are in the East Kingdoms, but the huge piles of Wainscot, Clapboard, Fir-deal, Masts, and Timber, is in the Low Countries, where none grows.”156 He cites Dutch maritime dominance as the reason, stating that “they have Five or Six Hundred great long Ships continually using that Trade, and we none in that course,” adding, “Notwithstanding the Low Countries have as many Ships and Vessels as Eleven Kingdoms of Christiandom have, let England be one, and build every Year near one Thousand Ships, and not a timber tree growing in their own Country.”157 By 1626, the Dutch in New Amsterdam were harvesting and shipping timber across the Atlantic and into the West Indies in a manner suggestive of New England’s timber trade in the following decades. While timber provides one example of the manner in which the Dutch directly competed with the

155 Birn, Crisis, Absolutism, Revolution, 40-41.
English, the Dutch successfully carried a wide array of goods from the colonies to Europe and between English colonies themselves.\textsuperscript{158}

The growing conflict between the English and Dutch came to a head in 1651. That year, the Dutch negotiated a treaty with Denmark to close Kattegat Sound to English shipping in the event the Dutch went to war with England, and the English Commonwealth under Cromwell passed the first of a series of Navigation Acts in response, limiting trade between English colonies and England to English ships. A purely punitive measure, Cromwell sought to secure and expand English commerce while punishing the Dutch, who supported the rule of his rival, the English King Charles I.\textsuperscript{159} English privateers began attacking Dutch merchant ships and over the next two years, the English and Dutch fought a series of naval skirmishes that became the First Anglo-Dutch War. During the conflict, the Danes closed Kattegat Sound to the English per their treaty with the Dutch, realizing English fears. Although the English made an effort to secure the Sound, numerous factors conspired to prevent any fleet action from taking place there during the war. The closure did have clear and immediate consequences for the English naval access to timber.\textsuperscript{160} Due to the tactics of naval combat employed by the Dutch, the English tended to lose masts and spars, which were much more difficult to replace at the time than the still relatively accessible English oak.\textsuperscript{161}

\textsuperscript{158} Koot, \textit{Empire at the Periphery}, 4-5.

\textsuperscript{159} Albion, \textit{Forests and Sea Power}, 166.

\textsuperscript{160} Ibid., 166-67.

\textsuperscript{161} Ibid., 205-6.
Ultimately, the First Anglo-Dutch War failed to address the underlying commercial conflict between the two contesting maritime powers and put timber at the top of the Royal Navy’s list of concerns. The war concluded in 1654 with a Dutch recognition of the Navigation Acts at the cost of the English having to abandon their Swedish allies in their planned invasion of Denmark, which the Dutch helped to repel. The English and Dutch put to sea once more in 1659 over control of Kattegat Sound, which was once again being contested by Denmark and Sweden, but conflict became unnecessary once the two Nordic belligerents reached a settlement. In 1665, hostilities renewed between the growing English and Dutch merchant powers. Masts and naval timber for repairs were in short supply when the entire English fleet came into port twice during the war for repairs before the brief war’s end in 1667. The Great Fire of London in 1666 created an additional demand for boards and other construction timber that competed with the needs of the Royal Navy, leading to an easing of the Navigation Acts temporarily to acquire as much timber as possible for the reconstruction of London. England’s third engagement with the Dutch between 1672 and 1674 proved more harrowing for the navy than the preceding wars. While the war arose out of treaty obligations rather than commercial conflict, it illustrates better than at any time before the importance of securing a source of naval timbers. According to Robert Albion, “The Third Dutch War saw the timber problem at its worst during that whole period. The possibilities of disaster from want of masts had been grave enough in the previous

162 Ibid., 174-75.

163 Ibid., 215-18.
contest, but that was looked upon as a time of comparative plenty.”

The Third Anglo-Dutch War was perhaps the greatest impetus for English policy governing the strategic use of wood in their American colonies, where such uses were previously left for the colonists to decide, paving the way for a direct conflict between the growing imperial economy and the self-interested Atlantic colonies.

**Applied Mercantilism: The Navigation Acts**

The Navigation Acts were the embodiment of mercantilist thought. They directly contributed to some of the strife between the metropole and the colonies, governing which goods the colonies could trade and making outlaws of colonials who violated them. In time, this included a host of timber products. The removal of Dutch competition also opened the English Empire to colonial traders from throughout the Anglo-Atlantic. Over the same period, during which the English employed the Navigation Acts, Great Britain rose to prominence in world trade and built an unmatched navy to protect its vast merchant marine. The merchant marine and, to a lesser extent, the navy which protected it, relied heavily upon wood cut from American forests, whether in the construction of whole ships as happened in many mainland colonies, or critical components, such as the masts drawn from the white pines of New England.

There is some conflict over whether the Navigation Acts served to bolster national defense within Britain, or were an extension of mercantilist policies designed to protect

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164 Ibid., 218.


166 Ibid., 50.
domestic industry, but whichever purpose the acts served, the wood put to service in support of the trade and defense outlined by the acts filled a strategic role within the growing Empire.\textsuperscript{167} Threatened by Dutch success and desiring to secure vital resources and their own intercolonial commerce, the English adopted protectionist policies epitomized by the Navigation Acts, which created the terrain of mercantilism as experienced by the colonists. Some historians and economists have pointed to the Navigation Acts as the quintessential economic protectionist policies employed by the British during the mercantile period. T.H. Breen, author of \textit{The Marketplace of Revolution: How Consumer Politics Shaped American Independence}, argues that the Navigation Acts “reflected the kind of mercantile—or more precisely, in this case, protectionist—thinking that Adam Smith excoriated.”\textsuperscript{168} Others argue that the Navigation Acts were much more than an act of national defense. J.A. Williamson, author of the \textit{Cambridge History of the British Empire}, states that “the Act belongs solely to the economics of defence, and to judge it from any other standpoint is to misjudge it.”\textsuperscript{169} Mercantilism, and the policies that drove it, became a strategic method to protect the economic interests of the metropole, in effect subordinating all commerce, including the commercial uses of wood, to strategic goal of maximizing revenue for the Empire. Later Navigation Acts increasingly limited direct trade between colonies, instead requiring that an evolving list commodities, called “enumerated goods” in the Acts, pass through

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\begin{enumerate}
\setcounter{enumi}{166}
\item\textsuperscript{167} Ibid.
\item\textsuperscript{169} Charles Wilson, \textit{Profit and Power: A Study of England and the Dutch Wars} (London: Longmans, Green, 1957), 53.
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England enroute to a colonial or foreign destination. While the Navigation Acts may have done well to protect English shipping by restricting or banning foreign merchants from moving goods to England or between England and its colonies, the English territorial possessions, such as Scotland, Ireland, or the American colonies did not obtain the right to ship goods directly to a foreign market. On the island of Great Britain itself, the English used that aspect of the Navigation Acts to entice Scotland into a “voluntary” Act of Union with England, which ultimately passed Parliament in 1707. 170

The American colonies experienced some conflict with the Navigation Acts. The New England colonists, viewed by the English for some time as heading toward independence, became perceived by the English as business competitors rather than obedient servants of the crown because of their numerous violations of the Navigation Acts in support of maritime ventures predominately to the West Indies.171 During the English commonwealth period under Oliver Cromwell, New England favored the royalist cause and in retribution, Cromwell led parliament to ban “trade with Antigua, the Bermudas, and Virginia” in October, 1650.172 In response to the accusations of violations following the Stuart restoration in the early 1660s, the Massachusetts government informed the Crown that it did not believe that it was beholden to English law because it lacked representation in Parliament, but was willing to follow the Navigation Acts in


hope of eventual “liberty of trade.”\textsuperscript{173} The representatives in Massachusetts further argued that because the colonial charters of the New England colonies (issued well in advance of the Navigation Acts) did not specifically outline enforcement of the Acts, New England merchants were not obligated to the law. Despite this, English merchants did not vocally object to oversight in enforcement because New England purchased ten times more goods from English merchants than they sold to foreign merchants.\textsuperscript{174} Sporadic enforcement of the Navigation Acts coupled with the support of English merchants encouraged New England traders, and the other Anglo-Atlantic merchants, to pursue economic endeavors that flagrantly violated the Navigation Acts, the most egregious among them trading with colonies of or directly with a foreign power, regardless of any perceived misalignment with the strategic goals of England’s economy. Colonial merchants grew accustomed to operating independent of the economic restrictions established in England.\textsuperscript{175} Weak enforcement and access to timber resources enabled them to carry trade into and across the Atlantic in their own ships. Even so, this loophole was closed in 1684 when Charles II of England revoked the charters of the New England colonies and, along with New York and New Jersey, formed the Dominion of New England, which had power vested in a crown-appointed governor and council and a renewed enforcement of the Navigation Acts.\textsuperscript{176}

\textsuperscript{173} Dorfman, \textit{The Economic Mind in American Civilization}, 50.

\textsuperscript{174} Ibid., 53.

\textsuperscript{175} McCusker, \textit{The Economy of British America}, 48.

\textsuperscript{176} Dorfman, \textit{The Economic Mind of American Civilization}, 53-54.
Conclusion

The importance of timber as a vital resource for the economy and empire grew through the seventeenth century. Successful settlement of new colonies in areas lacking the infrastructure required to sustain English culture required prodigious use of available wood supplies that one might hardly call judicious. New English settlements demanded sufficient land for agricultural produce to sustain the colonial population without need of supply ships and the planting of marketable commodities. The tree removal that followed provided wood for an array of domestic uses, from potash for fertilizer to construction material and heating fuel. In New England, certain trees also provided a means to engage in the emerging Atlantic economy through the construction of ocean vessels of increasing size and the ability to meet the demand for timber in colonies such as Barbados, where the local supplies proved insufficient to the task of sustaining the nascent sugar economy. In the first decades of settlement, domestic uses gave way to increasing commercial uses of timber in the northern colonies, following parallel tracks that did not conflict with one another. By contrast, the sugar colonies used wood to support sugar production to the detriment of their sustainable domestic supply and use. This coincided with England’s own difficulties with the Dutch over colonial trade and Baltic timber.

By the middle of the seventeenth century, timber, especially for naval purposes, had reached a critical point in England where military conflict with the Dutch and political policies enforcing trade, like the Navigation Acts, became the course for English control of their economy. The Navigation Acts were designed to wrest control of colonial trade from the Dutch and touched off three wars. As the expansion of the sugar industry
continued apace and generated significant income for English investors, the Caribbean colonies transitioned from exclusively commercial ventures to strategically important elements of the imperial economy, folding their export trade firmly under the umbrella of mercantilism. Establishment of enumerated goods and restrictions on trade with foreign nations and colonies placed outside the law a significant amount of intercolonial trade, specifically the lucrative trade between the northern colonies and the foreign West Indies, and bringing into conflict the commercial endeavors of the colonies with the strategic interests of the Empire. The first in a series of efforts by the English, and later British, government to exert control over imperial commerce, the strategic concerns addressed by the Navigation Acts foreshadowed future imperial interference with both commerce and natural resource consumption in the colonies. Later parliamentary acts sought to control the consumption of specific trees growing in New England for use by the Royal Navy, after their disastrous experiences fighting a naval war against the Dutch. The Broad Arrow Policy, as it came to be known, created a direct point of conflict between the domestic uses of timber in New England and the strategic needs of defense. As the source of one of the world’s most vital resources, trees were at the center of a growing conflict in the Anglo-Atlantic colonies between the strategic goals of timber resources for the imperial core, the commercial goals of both the northern colonies and West Indies, and the domestic goals of New England colonists, and arguably, the West Indies as well.

The two examples described in the following chapters clearly illustrate the emerging conflict. The first explores the development of the sugar plantations in the English West Indies through their growing dependence upon imported wood from the
northern colonies. Governed by the mercantile system and supported by a government with a strategic interest in the revenue generated through the sale of imported sugar, the West Indies turned to the British government for assistance when merchants from the northern colonies increasingly violated the tenets of mercantilism by trading for sugar products with foreign powers, especially the French West Indies. The second example moves into the forests of New England where the white pine tree flourished and provided a significant source of timber for the masts of new ships in the years following the Anglo-Dutch Wars. Explorers, settlers, and ultimately the English government recognized the value of the white pine in ship construction. As the difficulty of importing quality masts from the Baltic Sea ports mounted, the English imposed, and the British perpetuated, increasingly stringent protections upon the cutting and use of white pines through the Broad Arrow Policy. Both examples demonstrate the use of governmental authority to protect strategic state interests to the detriment of commercial and domestic timber uses among the mainland colonies. The mercantilist actions taken by the British government to protect the economy of the sugar islands led indirectly to colonial conflict with Great Britain in the context of other commercial restrictions following the Seven Years War, while the restrictions placed upon the cutting of the white pines conflicted directly with domestic uses of available timber and resulted in violent reprisals against those who sought to enforce the Broad Arrow Policy.
Chapter 4

THE BOUNTY OF THE WOODLOT: TIMBER AND THE POLITICS OF SUGAR

The planters still needed wood, however, for fuel, buildings, and fences, and for hogsheads to ship the crop. And they needed livestock to power the mills. The demands of the sugar planters proved central to the economic development of the mainland colonies. Traders were able to operate independently of the major metropolitan merchants.\textsuperscript{177}

—John McCusker and Russell Menard, \textit{The Economy of British America}

Just as descriptions of the potential value of timber can be traced through the accounts of the early attempts at settlement like grains in a cedar board, so too can examples of the uses of colonial trees make clear the growing burden then befalling forests in America. Much has been written of the early economy of the Atlantic world. Many equate this period with ships and silver, or sugar and slaves, and this is an accurate, if general, description of the economic state of the seventeenth and eighteenth century Caribbean. The previous chapters demonstrate the importance of trees as a source of timber for domestic and commercial use in the early English colonies and strategic use in England, but what has remained less so is an examination of the role of timber in the politics and economics of the period arising from the competing uses perceived for the trees in North America. Timber harvesting may have made few rich, but it formed the foundation on which the Anglo-Atlantic colonies were built. As localized deforestation took hold on several Caribbean islands, many, such as Barbados and Jamaica turned to the mainland colonies to meet the shortfall. The settlements of mainland North America increasingly viewed the available timber as their own resource separate from the whims

\textsuperscript{177} McCusker, \textit{The Economy of British America}, 155.
of a distant government, making wood a factor contributing to the changing economics, politics, and rebellion through the eighteenth century.

Rise of Sugar

The history of timber dependence in the Anglo-Caribbean lies in the efforts of early English colonists to carve a profit from newly-discovered North America. Early English involvement in the Americas primarily involved fishing, harrying the Spanish settlements, providing illegal trade for the communities suppressed by the Spanish Crown, and occasionally attacking Spanish ships hoping to acquire the much sought Spanish gold. When the English set out to establish colonies of their own in North America, quick wealth with minimal effort was the goal. They hoped to follow the Spanish model, assuming that wealth would veritably leap into their lap if they managed to secure land in North America.178 Failing to mirror the early Spanish success, the economy of the Anglo-Atlantic turned to any commodities that could be easily caught, grown, or cut near the new settlements. Those founded upon some form of extractive agricultural economy or specialized produce varied depending upon the climate and soil available and required a substantial initial investment in labor to clear lands for production. Settlers used cleared wood for all manner of purposes, including construction material and fuel for cooking and processing. Just as often, settlers burned the woods to

create clearances.\textsuperscript{179} In the English Caribbean colonies, sugar became the product of choice.

Perhaps nowhere else in the Anglo-Atlantic did trees seem to fall faster than they did among the islands of the Caribbean. Significant differences existed between the vast sugar plantations of the tropical West Indies, rice in the subtropical Carolinas, the early tobacco farms of the Virginia and Chesapeake lowlands, and the subsistence farms of the more temperate New England colonies. Among them also lay differing rates of tree consumption. In the case of the Anglo-Caribbean, after the initial supply was exhausted, no easily accessible timber sources remained. Before the end of the seventeenth century, there were some efforts in Barbados to conserve woodland resources by protecting 120 acres out of every 500 to allow trees to mature.\textsuperscript{180} Yet by the eighteenth century, Barbadians imported the majority of their timber because support of the newly established and rapidly expanding sugar economy consumed wood at a rate far faster than it grew. Eighteenth century historian of Barbados Samuel Frere catalogued the imports of the island, among which he identified “the very considerable importations of timber…from the northern colonies.”\textsuperscript{181}

Once established, sugarcane helped the English Caribbean colonies provide more direct wealth—that is wealth flowing directly to Great Britain—during the seventeenth century.


\textsuperscript{181} Samuel Frere, \textit{A Short History of Barbados From Its First Discovery and Settlement To The End of the Year 1767} (London: Pall-Mall, 1767), Internet Archive, \url{https://archive.org/details/shorthistoryofba00john} (accessed October 6, 2012), 113.
and eighteenth centuries than the American mainland colonies to the north, but at the cost of a profound loss of tree cover. Plantations and the contemporary belief that forests were the source of miasmas causing ill health, led to wide clearances in the native Caribbean forests. Montserrat, which also hosted early settlement, had clearings thought to contain healthy air. This was the inspiration for the English governor of the Leeward Islands to employ four thousand slaves on the more heavily wooded Antigua in 1677 to make clearings for health reasons.\textsuperscript{182} The reduction of tree canopies made the islands warmer, thereby reducing moisture. Laborers used local rivers to move long distances those trees saved from burning. Reduced moisture meant lower flows, which increased the difficulty of harvesting timber.\textsuperscript{183} J.R. McNeill, in his study of the effect of mosquito-borne diseases on the Caribbean populations during this period, found that standing water preserved “for the dry season in cisterns, barrels, kegs, or buckets” contributed to the rapid incidence of the mosquito as a vector for malaria and yellow fever, both of which, along with the mosquito species that caries them, were imported from Africa.\textsuperscript{184} In this case, the very containers used to preserve needed water supplies consumed wood as well.

Processing and exporting sugar came burdened with a variety of challenges. Cane sugar comes from a tropical grass and only grows well in regions free of frost, with plenty of precipitation and healthy soil.\textsuperscript{185} The real constraint on sugar exports came with

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\textsuperscript{183} Perlin, \textit{A Forest Journey}, 259.
\textsuperscript{184} McNeill, \textit{Mosquito Empires}, 48.
\textsuperscript{185} Philip D. Curtin, \textit{The Rise and Fall of the Plantation Complex: Essays in Atlantic History}, 2nd ed. (1990; repr., Cambridge, UK: Cambridge University Press, 2010), 75-76.
\end{flushright}
the time-sensitive process of converting it from a heavy and bulky reed into molasses, sugar, or rum. Creating these products required that laborers roll and boil the cane within hours of harvesting. This single aspect of raising cane made the lucrative grass extraordinarily labor and energy consumptive. For that reason, sugar plantations developed close to the coast to minimize the distance laborers, often African slaves, needed to haul the fully loaded barrels. Many locations in tropical America supported these requirements, but the English preferred the smaller islands of the Lesser Antilles because they had maximum access to the sea and were geographically closer to England, reducing the duration of trips. Processing sugar also required far more energy than the processing of other agricultural commodities. Gonzalo Fernandez de Oviedo lived in the Spanish Caribbean for several years during their early attempt at growing sugarcane. He witnessed the profound consumption of wood, stating, “You cannot believe the quantities of wood they burn without seeing it yourself.” Historians specializing in Caribbean sugar production posit that six or more slaves may have been involved in the harvesting of timber to feed a single sugar mill boiler and cleared as much as ninety acres a year in the process. Such deforestation created soil erosion problems, which led to reduced soil fertility and made waterways more erratic, and thus, more dangerous. As a

186 Ibid., 4.
187 Ibid., 75.
188 Gonzalo Fernandez de Oviedo, Historia General y Natural de las Indias, quoted in Perlin, A Forest Journey, 258.
189 Perlin, A Forest Journey, 258.
190 Ibid., 260.
consequence, the increased incidence of deforestation led many planters to simply clear more land and move further inland.  

The Caribbean plantations turned north for their wood, perhaps perceiving the woods of North America as inexhaustible as they once were among the islands of the Caribbean. In Frere’s history of Barbados written in 1766, he described a hurricane in August of 1675 that decimated portions of Barbados and nearly destroyed the entire economy of the island. The island descended into debt due to the loss of whole sugar crops because “New England was not in a condition at this time to send hither the usual supplies of provisions and timber.” While Frere does not explain why New England was unable to supply vital timber, his statement suggests New England timber supported the domestic needs of the island, which included material for construction, cooking fuel, and furniture, as well as the more obvious commercial uses, such as barrels, ships, and boiler fuel, which directly support the sugar plantations.

Jamaica also became dependent upon wood shipments from the mainland colonies. Since sugar was not among Jamaica’s earliest crops, it is difficult to determine precisely when timber imports began, or whether deforestation played an initial role. It is known that Jamaica imported wood from the northern colonies as early as 1714. Late in the eighteenth century, Jamaica may have still had ample timber resources upon its slopes, but minimal available timber among the accessible lowlands. Bryan Edwards, in


his 1793 history of the British West Indies, observed that “the mountains [of Jamaica] are in general covered with extensive woods, containing excellent timbers, some of which are of prodigious growth and solidity,” but in the more accessible lands, “having been long cultivated, are nearly cleared of contiguous woods.” Though farmers among the coastal lowlands could see the trees on the hills above, the wood proved difficult to access economically, owing to the likelihood that Jamaica suffered localized deforestation across the areas suitable for sugarcane production throughout the eighteenth century.

Sugar and Wood

The eighteenth century opened with a maturing connection between the British Caribbean and the mainland colonies. As the plantation economies became established in the Caribbean and the settlements of coastal North America developed, a thriving interdependent trade grew between these geographic regions. According to research conducted by Frank Wesley Pitman, the Colonial Office Records of America and the West Indies listed 921 vessels departing the city of New York for the West Indies (British and foreign) between the years of 1705 and 1716, compared with only 224 vessels reporting a European destination over the same period. Similarly, the city of Boston recorded 495 vessels identifying a British West Indian destination between 1714 and 1717, while only 23 declared for a port in Europe. By 1730, the North American colonies dominated sugar and rum imports from the British West Indies. In the five years between 1726 and 1730, the northern colonies imported 3.72 million gallons of rum, 2.72 million

gallons of which arrived from Barbados alone, much of it then transshipped to Great Britain and elsewhere. During the same period, England imported directly from the West Indies approximately 750,000 gallons of rum. These figures demonstrate the strong carrying trade passing between the two important Atlantic colonial regions during the early eighteenth century. While numbers do not portray the entire picture, since many goods traveling between the northern colonies and Europe were less bulky and of higher value than many of the commodities destined for the West Indies, the records present a clear connection between the colonies in the British West Indies and their northern cousins. The connection became a vital link in the commercial dynamic of the sugar trade. As the wealth generated by sugar increased, sugar rose in prominence within in the imperial mercantile scheme. This led toward a slow transition that subordinated the sugar economy and its component dependencies to the strategic economy and goals of the empire.

During the first couple of decades of the eighteenth century, the northern colonies expanded their Caribbean trade to include the French West Indies. Violating the Navigation Acts, this trade was not well received among the British colonies in the Caribbean. The most important reason for the northern colonies to diverge from the mercantile model lay in the trade deficit they carried with Great Britain. By this time, fur was in decline among New England’s high value exports, and fur often required trade

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195 Pitman, *The Development of the British West Indies*. Pitman has compiled data from a variety of documents from the Colonial Records Office into tables among the appendices of his book, providing a useful source for these statistics. For the compilation of the shipping records for New York, see page 397; for Boston, see page 398; for the compilation of British West Indies imports to the northern colonies, see page 394; and for the value of rum imported into England during the same period, see Chart X.
with the natives.\textsuperscript{196} The deficit impaired the ability of New England merchants to purchase the finished goods they desired from Great Britain for resale in the American colonies. More money flowed from these colonies to Great Britain than they received directly for their own goods, which forced them to turn to other colonies to market their more abundant, but perhaps less immediately valuable, timber. The British West Indies refused to trade with the northern colonies for specie (hard currency, usually in the form of silver coins) and instead wanted only to exchange their product for the imported goods. While this still proved a worthwhile exchange for many colonial merchants seeking to transship the sugar products to Europe, the French sold their sugar cheaper and offered specie in exchange for goods. In 1714, rum from the French Caribbean sold for 3d-4d compared with 11d-12d for rum manufactured in Barbados at the same time.\textsuperscript{197} While likely only a contributing factor, the greater availability of timber resources in the French West Indies gave the French a competitive advantage over British sugar and sugar products during the eighteenth century and made production cheaper among the French islands because of a reduced need to pay for imported wood.\textsuperscript{198} Despite this, the French found enough demand for wood to pay the American merchants for it rather than just bartering for goods. At the same time, the French navy increased patrols of the West Indies to protect the lucrative trade growing in the French Caribbean colonies.\textsuperscript{199} When

\textsuperscript{196} Cronon, \textit{Changes in the Land}, 91, 99.

\textsuperscript{197} Pitman, \textit{The Development of the British West Indies}, 353. The “d” is the symbol for “pence,” a British currency equal to 1/240 of a British pound sterling.

\textsuperscript{198} Ibid., 204.

\textsuperscript{199} Rodger, \textit{The Command of the Ocean}, 249.
the growing expense of imported wood among the British West Indies counted as an additional factor, the cost of production begins to favor the French. A full accounting of the factors may not be known, but the ongoing war between the British and the French in the War of the Spanish Succession certainly exacerbated the situation and under the principles of mercantilism, made the northern colonies traitorous in their dealings with an enemy belligerent during an ongoing war.

Regulation and the Timber Trade

The growing need among the British West Indies for northern wood products indicates that these islands became a victim of their own success and thereby gestated the conflict between the commercial interest of the mainland colonies and the strategic interests of the imperial government. A 1721 report to the Lords Commissioners for Trade and Plantations observed and expanded upon this concern. The report identifies the trade deficit between Great Britain and the mainland colonies while taking note of the growing trade between the northern colonies and the British West Indies. This report concluded that the northern colonies “might still be rendered much more useful, if sufficient encouragement were given to induce them to turn their industry to the production of…such commodities as our necessities require.” The British government was not only aware, but was also concerned and thinking proactively about the attachment between the northern colonies and the British West Indies as well as actively

thinking about trying to entice, rather than force, the mainland colonies to trade within
the imperial mercantile system. Such direct trade violated the tenants of mercantilism,
which demands that money flow through the imperial core rather than between outlying
colonies. British politician and plantation owner Sir William Young believed that the
northern colonies developed their agriculture and industry specifically to fill the gap left
by the English when it proved too costly for England to continue supplying the Caribbean
plantations from across the Atlantic.\(^\text{201}\) Young’s insight sheds light on the heart of the
conflict. Expanded further, it might suggest that the Americans meant only to focus on
domestic development or find a commercial outlet for their abundant resources, but
instead evolved a commercial interest where pursuit of profit superseded the mercantile
concept of trading entirely within the constraints of empire. Such an attitude conflicted
with the British government’s interest in securing the strategic economy and bringing to
heel the loose ends which failed to conform to the system.

By 1730, several representatives of the British West Indies issued statements
against the ongoing trade between the northern colonies and the French West Indies. The
representatives of the British West Indies cited among their grievances the high cost of
lumber from the northern colonies and the competitively low cost of French sugar and
sugar products.\(^\text{202}\) The governor of Jamaica, not entirely convinced that deforestation was
the sole cause for the need of wood imports, claimed in 1731 that plantation owners
preferred to use their slaves to work the fields rather than harvest wood.\(^\text{203}\) This

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\(^{201}\) Sheridan, *Sugar and Slavery*, 315.

\(^{202}\) Ibid., 353.
preference might have been the case, but it does not fully explain the cause of rising sugar prices among the British Caribbean islands, which was part of the reason for the northern colonies’ continued trade with the French West Indies. In 1731, Francis Hall published a work directed to Sir Robert Walpole, a representative in King George’s Privy Council, on the value of the British colonies, but more importantly, it expands upon how the colonies might be improved. On several occasions throughout the work, he wrote of the timber export among the northern colonies, and “all the Money they get by trading with the Dutch, French or Spaniards, or any others, which are not inconsiderable Sums.” Whether or not this specific work influenced the Privy Council or the King regarding the circumstances of the Caribbean trade, two years later Parliament passed the Molasses Act of 1733, which permitted the continued trade with foreign ports, but placed an import duty of “9d per gallon on rum, and 6d per gallon on molasses.”

Extensive timber harvesting in the northern colonies to meet the demand of the West Indies did not occur without consequences. By the 1740s, lumber was such a valuable commodity that it changed the order of trade. A Mr. Maitland, one of the many who testified to the Board of Trade of the ongoing struggles in the British West Indies, conveyed the explanation given him by a “Captain in the North American Trade” for the growing price of lumber. According to Maitland, the captain explained “that Lumber was double what it was Twenty Years ago; That the Price is now from 20 to 30s Currency per

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203 Pitman, The Development of the British West Indies 1700-1763, 220.

204 Francis Hall, The Importance Of The British Plantations In America To This Kingdom With The State of their Trade, and Methods for Improving it; As Also A Description of the several Colonies there (London, 1731), Internet Archive, https://archive.org/details/cihm_20089 (accessed October 7, 2012), 94.

205 Sheridan, Sugar and Slavery, 354.
1000. Boards or Staves; which could be bought 10 Years ago for half the first Price, the
Reason for which he conceived to be the Quantities of Timber that have been cut down
by the new Settlers."206 Such a claim implies that accessible wood grew scarcer among
the northern colonies by the middle of the eighteenth century. The captain who Mr.
Maitland referenced clearly believed the cause was excessive cutting by newly arrived
settlers. Such a conclusion is consistent with the priority toward domestic uses of wood
among new settlements on the colonial fringe, a consistent use of wood reaching back to
the first colonies. The massive efforts underway clearing timber in the northern colonies
to supply the great demand of the West Indies presents another possibility contributing to
the explanation of increasing deforestation and the expense of timber among the
mainland colonies. Likely, a combination of these factors was at play.

The region around South Carolina’s primary settlement of Charles Town offers an
example of the observable deforestation. In South Carolina’s case, extraction to sustain
the growing rice and indigo economy proved as much of a reason as timber exports.
Firewood became a valuable commodity in Charles Town’s hinterland; as a result,
demand for this most basic of domestic commodities could not be met by easily reached
local sources as it had been for much of the previous century.207 The deforestation had an
observable effect on South Carolina’s available timber supplies by the 1760s. Henry

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206 “All the Proceedings had and the State of the viva voce Evidence taken before the Commission
of Trade and Plantations in the Year 1750 relating to the Trade carried on by the British Northern Colonies
with the French Sugar Colonies,” (Board of Trade Journal, C.O. 391:57, 1751), in Pitman, The
Development of the British West Indies, 423-24.

207 S. Max Edelson, “Clearing Swamps, Harvesting Forests: Trees and the Making of the
Plantation Landscape in the Colonial South Carolina Lowcountry,” Agricultural History 81 (Summer,
2007), 390-91, 393-94.
Lauren, who would later serve as President of the Second Continental Congress, owned a plantation in South Carolina. His surviving records allow a glimpse into the economic life of South Carolina’s plantation history. In his work *The Plantation Enterprise in Colonial South Carolina*, Max Edelson explores this history extensively and identifies Lauren’s Mepkin plantation near Charles Town as a local source of firewood. Among the seven commodities listed in production at Mepkin between 1766 and 1773, firewood and lumber combined account for nearly half of the value of the plantation’s products and made more for the plantation than rice and indigo. Edelson claims the lucrative wood trade resulted from localized deforestation among the South Carolina lowlands around Charles Town, making a premium of a simple, but necessary, commodity like firewood.

The British West Indies continued to struggle through the middle of the eighteenth century, unable to compete with French sugar products. Limited enforcement of the Molasses Act largely contributed to the continued trade. In 1750, the British Board of Trade investigated the illicit commerce between the British North American colonies and the French West Indies in violation of the Molasses Act of 1733. A contemporary history written in 1741 captured the issue in the succinct observation that “the French and Dutch have now lately supplied the Northern British Colonies with very

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209 Ibid., 213-14.

large Quantities of Molasses…to the vast Prejudice of your Majesty’s Sugar Colonies.”

The investigation revealed the continuing problem the British Caribbean faced attempting to acquire wood. According to the report, “Mr. Philip Pinner said there was no Wood in Jamaica of which Hogsheads and Puncheons could be made, and that the wood of Hispaniola was of the same Species and Qualities as that of Jamaica.” The plantation owners must have actively sought wood from sources nearer and cheaper than the northern colonies. Their failure and increasing frustration with continued trade between the northern colonies and the foreign West Indies is captured in this report. These observations imply a lack of readily accessible wood on or near the islands of the West Indies and a realization of their dependence upon imports of this vital resource.

The Seven Years War between Great Britain and France changed the political landscape in the Americas, bringing new rules and vigorous enforcement of the Molasses Act—a policy that affected merchants from the northern colonies the most among British subjects. In his pamphlet entitled *War in Disguise or the Frauds of the Neutral Flags*, James Stephen analyzed the Rule of the War 1756, also referred to as the Rule of 1756. A British naval policy stemming from the Seven Years War with France, the Rule forbade, among other things, trade outside the British Empire. The Rule of 1756 codified an aspect of mercantilist policy to prevent the violation of a naval blockade by moving goods from

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213 O’Shaughnessy, *An Empire Divided*, 64.
a foreign colony to its imperial core under a neutral flag that would otherwise not be subject to the blockade.\textsuperscript{214} Many merchants from the northern colonies travelled between the mainland coast and the Caribbean and engaged in illicit trade with the French West Indies throughout the Seven Years War. The newly implemented import rules changed the dynamic between the northern colonies, Great Britain, and the British West Indies. British economic policy supported the West Indies and subordinated the commercial endeavors of the northern colonies with the strategic aims of mercantilism.

After the Seven Years War, the British government was heavily in debt and made several changes to colonial policy. Among the many concessions in the Peace of Paris concluding the war, the French ceded to the British control of the Caribbean islands of St. Vincent, Dominica, Grenada, and Tobago, which the British managed as the Grenada Protectorate.\textsuperscript{215} At the same time, after more than a century of timber exploitation throughout the British Caribbean, a growing recognition of the importance of preserving some of the remaining forestlands in the colonies took hold in Great Britain. This manifested as environmental legislation establishing forest reserves and establishing land use policy on the recently acquired islands of St. Vincent and Tobago, but met with some local resistance to its implementation.\textsuperscript{216} Tobago also integrated into the sugar plantation complex, turning over nearly thirty thousand acres to sugar after inclusion in the British Empire and 2.4 million pounds of sugar and 100,000 gallons of rum, in addition to

\textsuperscript{214} James Stephen, \textit{War in Disguise: The Frauds of Neutral Flags} (1805), 13-16.

\textsuperscript{215} Grove, \textit{Green Imperialism}, 269.

\textsuperscript{216} Ibid., 266, 272-73.
150,000 pounds of cotton and 5,000 pounds of indigo. By 1800, some in Britain started to observe that fault for the environmental problems then befalling the plantation islands in the Caribbean might lay with the plantations. Alexander Anderson, an advocate for environmental protection in the British parliament, wrote that the planters acted “the same inconsiderate and imprudent part as the first settlers of Barbados and Antigua ‘by the total extirpation of all natural woods within their bounds.” Anderson opined that such loss “ought to have been a warning to the planters of the windward side of St. Vincent,” then suffering as many islands before it had.

Imported wood continued to prove critical to the economy of both the British and foreign Caribbean throughout the Seven Years War and after. Some specific records survive of the massive quantities of wood arriving in the British West Indies. During the five years between 1757 and 1762, Jamaica imported 7.2 billion staves and headings, 8.6 billion shingles, and 10.7 billion feet of boards. To illustrate the volume of wood that sailed into Jamaica during this single five-year period, consider that a fully loaded modern railcar can carry nearly 100,000 board feet and the average length of such a car is approximately fifty feet. This means that a modern freight train more than a thousand miles long and fully loaded with wood would have been needed just to supply Jamaica’s five-year need for boards! This fact does not even include the billions of shingles, staves, and headings that Jamaica consumed at the same time. Staves were manufactured into hogshead barrels for the storage and shipment of sugar and molasses. One hundred acres

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217 Ibid., 283.

218 Alexander Anderson, quoted in ibid., 301.

219 Pitman, *The Development of the British West Indies 1700-1763*, 400.
of sugar required about eighty hogsheads for the sugar and twenty more for the molasses.\textsuperscript{220} Jamaica was not the only island in need of imported wood, but at this time served as the primary source of sugar exports from the Caribbean. A petition by New York merchants to the British House of Commons in 1767 identifies Dominica and the French islands of Martinique and Guadeloupe as ready markets for the lumber trade.\textsuperscript{221}

The importance of sugar to the overall economy of the British Empire led to the British government placing a premium on protecting it, even if it meant infringing upon actions many merchants, especially those from the mainland colonies, had come to take for granted in an environment of minimal enforcement.\textsuperscript{222} A much more robust set of rules regarding colonial exportation were implemented and the government had a newly constructed fleet from the recent war to assist in enforcement. The Sugar Act of 1764 stands among the earliest of the new proclamations issued and actively enforced in the aftermath of the war by the British Parliament in support mercantilist policy. The Sugar Act attempted to make sugar exports from the British West Indies competitive with the French and to discourage the continued smuggling through the northern colonies of French sugar for export to Great Britain.\textsuperscript{223} Andrew O’Shaughnessy identifies the demand for representation among northern colonists as a cover for their interest in

\textsuperscript{220} Williams, \textit{Americans and Their Forests}, 101.

\textsuperscript{221} John Almon, \textit{A Collection Of Interesting, Authentic Papers Relative To The Dispute Between Great Britain and America; Shewing The Causes And Progress Of That Misunderstanding, From 1764 To 1775} (London, 1777), Internet Archive, \url{https://archive.org/details/collectionofinte00john} (accessed October 7, 2012), 166.

\textsuperscript{222} McCusker, \textit{The Economy of British America}, 48.

\textsuperscript{223} O’Shaughnessy, \textit{An Empire Divided}, 67-68.
continued illicit trade with the French West Indies.\textsuperscript{224} It also demonstrates the extent to which the American colonists were willing to violate the established rules of the transatlantic metropole while the sugar colonies had the wealth necessary to exert influence over a sympathetic parliament. In essence, the Sugar Act only inflamed the northern colonists against an economic institution in which they only nominally participated.

\section*{Conclusion}

Among the commodities in the Early Modern colonial Atlantic, the British government placed a high degree of importance upon sugar, but it was not the only commodity of consequence. The history of sugar traditionally focuses upon its role as an important corner of the much-simplified “triangle trade,” wherein the Europeans used manufactured goods to acquire African slaves, whom they brought to the West Indies for the sugar that they sold in Europe to support additional manufacturing. Another triangle trade existed where the colonists purchased manufactured goods from Great Britain with revenue generated from the sale of sugar acquired from the West Indies from the sale of foodstuffs and lumber.\textsuperscript{225} Yet, due to the infrastructure and labor needs of sugar plantations, much of the money generated from the sale of sugar in the West Indies went to sustaining the sugar industry. The northern colonies, especially New England and the Carolinas, supplemented their meager transatlantic trade with direct exports, a significant

\begin{footnotesize}
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\item \textsuperscript{224} Ibid., 69.
\item \textsuperscript{225} McCusker, \textit{The Economy of British America}, 115.
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portion of which included timber, to the West Indies for the sugar products that they transshipped to Europe or consumed within the colonies.

Wood was not alone among the commodities traded to the West Indies supporting the sugar economy, but it was critically important and affected the entire infrastructure of the enterprise. Historians of sugar and slavery in the early modern Caribbean identify the value and consumption of wood in support of the sugar industry and the lengths to which the plantations sought to employ the British government to protect their trade, but few illustrate the depth to which the West Indies depended upon timber imports. The elevation of the West Indian sugar trade and all associated commercial activity supporting it to a level of strategic importance within the British imperial economy effectively subordinated the commercial efforts of the Americans colonists to the strategic control of the supply chain feeding the hungry sugar machine. The Americans, long accustomed to operating outside mercantile controls due to minimal enforcement of mercantile policy, chaffed under the new restrictions and grew rebellious following enforcement of policies that impeded their intended commercial use of one of the mainland’s most abundant natural resources.
Chapter 5

CATCHING WIND: MAST TREES, SHIPBUILDING, AND THE FIRST TIMBER RIOTS

Nevertheless, these forest-based activities [of naval stores and masts] cannot be neglected…because they had a strategic and political significance, together with a role in the formation of national attitudes, which gave them a prominence (and visibility in the contemporary record) out of all proportion to their economic importance.\(^{226}\)

—Michael Williams, *Americans and Their Forests*

As the English tentatively laid the foundations for an empire on the shores of North America, the importance of ships rose correspondingly. At the end of the sixteenth century in the years preceding serious attempts at settlement, the English relied on ships to move goods between their island-bound nation and the continent of Europe, with the more intrepid financing larger or sturdier ships for transatlantic voyages of discovery or skirmishes with the Spanish in the hope of finding an elusive gold-laden galleon.\(^{227}\) It is at this time the two Richard Hakluys developed their strategic goals for a self-sufficient, but commercial empire designed to enrich England while Sir Henry Gilbert and the Thomas Elliot with their first-hand accounts of the new lands made equal claims to the value of the trees for the growth of maritime ventures. In the midst of the first serious colonization attempt at Roanoke, the importance of ships to the future of England as more than just a vital commercial link, but as the first line of defense as well, made itself abundantly clear with the threat of invasion posed by the Spanish Armada bearing down

\(^{226}\) Williams, *Americans and Their Forests*, 83.

on the English Channel in 1588. In the years that followed, ocean-going vessels served as
the lifeline carrying commercial goods and crucial provisions throughout the English
Empire, but the focus of government turned toward the protection of the growing
maritime trade through projection of force, defense of commercial shipping, and the
enforcement of maritime policy. Trees played a variety of roles in the commercial and
domestic development of the English colonies, but the potential for shipbuilding and
naval stores remains the single consistent use described by the explorers, the men
justifying settlement, and the settlers themselves. The focus upon construction of a Royal
Navy required secure timber resources and the British Parliament issued policy
maintained and enforced throughout the Empire to protect trees of strategic value to the
State. Among the polices, the Broad Arrow Policy created the greatest conflict in the triad
of resource consumption by placing at odds the domestic value of timber among colonists
with the strategic goals of the imperial government and prompting some of the first acts
of unrest against imperial policy.

Shipbuilding and Naval Stores in the Anglo-Atlantic Colonies

Several sources support the importance of the forests to shipbuilding in the early
American colonies. From the very first, the naval commoditization of trees in North
America caught the attention of the earliest explorers and laid the foundation for one of
the most important industries in the colonies. William Strachey’s accounts of the Popham
Colony and the shipwreck on Bermuda provide evidence that the nearly unbroken forest
that reached from the Canadian subarctic to the tropical Caribbean and Atlantic islands
enabled early American settlers to begin building their own ships. John Winthrop’s journal illuminates the rapid expansion of both the size and number of vessels put to sea in New England to carry goods between the English colonies and with Great Britain itself during the decades following colonial settlement in Massachusetts Bay. Nearly all early accounts describing the eastern coastline of North America agree on the value and abundance of trees for a variety of uses, above all ship construction.

Shipping formed the links tying disparate and far-flung reaches of the English Empire together. Without shipping circulating people, provisions, and products throughout the Empire, many colonies would be unable to participate in the merchant economy of the early modern English Atlantic so crucial to the mercantile system and the lifeblood of several English colonies, especially those depending upon the export of sugar and sugar products in the English West Indies. Shipping, though, by necessity depends upon the individual vessels constructed and maintained with timber and naval stores. The ready access to resources, especially timber, coupled with an incentive to participate in the flourishing Atlantic commercial system, allowed American settlers and later colonists to become self-sufficient within a system designed to create and foster dependence upon the metropole. The abundant availability of timber, especially among the North American east coast, played an important role with significant implications for the foundation of New England.

Shipbuilding served a critical need for early settlers in a developing colony, but remained limited. Pinnaces, such as those built at the Popham Colony and in Bermuda, are comparatively small craft by the standards of ships of the time. Pinnaces are large
enough to make a trans-Atlantic journey, as did the Popham Colony’s *Virginia* in the summer of 1608, but are more typically towed behind larger ships and used to reach shore or explore tidal rivers where deeper-draft ships could not venture.\(^{228}\) The limitation in the size of the vessel constructed in these locations is likely due to insufficient facilities necessary to construct larger vessels. There were many ships built in Great Britain and elsewhere that served the carrying trade both with the American colonies and between them. Yet for some American colonists, the frequency of arrival of itinerant ships from across the ocean was far too infrequent to support the growing agricultural economies of the Americas, which often needed to move the goods to market before they rotted.\(^{229}\)

While construction accounts for much of the timber resources ships demand, repairs and maintenance over the life of a ship can use as much as five times the timber consumed at construction, placing additional demands upon trees.\(^{230}\) Early descriptions abound with identified uses for the construction and maintenance of ships. Commonly categorized under the broad term “naval stores”, ship maintenance required such valuable naval commodities as “masts, spars, and planking,” but also, “hemp for ropes, flax for sails, and the many products obtained from sap of the coniferous trees, such as pitch, tar, turpentine, and resins.”\(^{231}\) Sailors of the period used pitch, tar, and resin to caulk and waterproof their wooden ships to extend the life of the wood and cordage exposed to the

\(^{228}\) Strachey, *Historie and Travaile into Virginia Brittania*, 179.


\(^{230}\) Albion, *Forests and Sea Power*, 86.

\(^{231}\) Williams, *Americans and Their Forests*, 83.
extreme elements of ocean travel. Extraction of naval stores proved labor intensive and sometimes killed the trees bled of resin. Pitch and tar required the heating of pinewood in special kilns that caused the viscous substances to drip away, leaving behind a dry wood valuable as charcoal. Strachey, in his early description of Virginia, suggested in a “testimonie of the truth” not to “lett any man suppose that materials of so good a navie as maie be there framed for planckes, masts, pitch, and tarre.” John Smith made similar observations in his exploration of the Chesapeake Bay in 1608. There, Smith’s company found “the shores overgrowne with the greatest Pyne and Firre trees wee ever saw in the Country.”

Starting with the Naval Stores Act of 1705 and proceeding through 1729, the British Parliament passed a series of acts aimed at developing a large-scale industry built upon the extraction of naval stores from the American colonies. The Naval Stores Act placed a bounty on specific items, including masts, spars, hemp, pitch, tar, turpentine, and resin, requiring payment to colonists at prices established in the act for the continued maintenance of the Royal Navy. Largely resulting from the Naval Stores Act, the contribution of colonial plantations to the supply of pitch, tar, and turpentine for the Royal Navy grew from a negligible figure in 1705 when the act began to nearly ninety percent of all imports by 1718. Most of these stores originated from North Carolina, and

233 Rutkow, *American Canopy*, 70.
to a lesser extent, South Carolina and Virginia, and the American colonies retained this level of contribution, with occasional saturations of the market, through 1776.\footnote{Williams, *Americans and Their Forests*, 84-85, 89.} Crucial to the maintenance of both commercial and military vessels, naval stores remained an important, if much less known, industry supporting the bonds of empire.

Shipbuilding is a complicated venture that relies upon the production of numerous subsidiary products and a large space near open water for the construction and launching of a ship. Parts of ship construction require metal and ironworking, tailors for making sailcloth of linen or cotton, and a variety of wood. In addition to the timber, iron, and sails, ship construction employed several smaller industries. These included brick layers for the galley, glaziers supplying the glass aboard the ship, ropemakers, carvers for any required intricacies in the wood, painters, coopers, and tanners. And before a ship left port, it often needed furnishing, upholstering, and provisioning, employing carpenters, brewers, bakers, and butchers.\footnote{Goldenberg, *Shipbuilding in Colonial America*, 89.} Many of these products could be imported from other American colonies or directly from Britain, but most also required wood in some form as well, either as the base material, as in furnishing the ship or supplying it with barrels to contain future shipments, or as fuel for the heat necessary for glazing and cooking. All of these secondary industries supported shipbuilding, and each consumed such a vast quantity and variety of wood that the construction of a ship might be seen as the greatest single investment one could make with wood in the American colonies. All of the secondary services supporting shipbuilding took hold in the American colonies in support
of the burgeoning industry, laying the foundation for the industrial capacity of a new nation.\textsuperscript{239}

Shipbuilding can fit into all three corners of the resource triad. Certainly there is a strategic component, but only insofar as timber is specifically set aside or protected for a perceived greater good, such as national defense. The colonies built very few warships for the Royal Navy, but British policy in the form of the Broad Arrow Policy protected selected white pine trees in New England for future use as masts in the Royal Navy, thereby claiming those trees for strategic use. Some of the earliest ships constructed in the colonies, such as those described by Strachey, provide examples of a domestic use of timber for ship construction. The ships constructed in Popham and Bermuda served an immediate need by the colonists unrelated to any greater national or imperial value or commercial interest the ships might serve. In their case, survival lay at the forefront of reasons stimulating construction. The preponderance of shipbuilding in the colonies ultimately became an extension of the greater commercial system growing in the Atlantic. Merchants commissioned the construction of most ships in the English colonies.\textsuperscript{240} They used the ships in the carrying trade moving staple goods and valuable commodities throughout the Atlantic, but sometimes made the ship a commodity itself by selling it and its cargo in Great Britain or the West Indies.\textsuperscript{241}

The construction of ships during the seventeenth and eighteenth centuries also relied up on a variety of woods serving different purposes. The wood often proved the

\textsuperscript{239} Ibid., 126.

\textsuperscript{240} Ibid., 82.

\textsuperscript{241} Ibid., 106.
most difficult to acquire as specific woods offer different characteristics which affected the performance of newly constructed ships and served different roles within the ship. While many woods might have served as an adequate substitute if the situation demanded, shipwrights typically relied upon a handful of woods to meet the needs of larger ships. Noted naval historian Robert Albion wrote what remains the most thorough account of the “timber problem” affecting the British Royal Navy, and expanded on the process by navy requisitioned and used timber. His work focuses exclusively upon warships and largely upon those constructed in England, but he accounts for the role and contribution of American timber in the process. While the Royal Navy relied upon native woods upon Great Britain to the extent feasible, high demand required that they turn to sources in the Baltic Sea, or at times, North America. The Navigation Acts limited timber shipments to ships of the nation of origin or the nation of destination. Carrying about three hundred loads of timber on average, the English preferred the use of Baltic ships because Baltic ships and crews were cheaper than English. The English ships were usually near the end of their productive lives if they entered the Baltic trade because the comparatively low value of Baltic exports did not make it worthwhile for English merchants to fill the hulls of newer ships, while the Baltic ships were used almost exclusively for hauling wood and grain.\textsuperscript{242}

Oak was perhaps the most important wood to the construction of a new ship and was preferred, though not always available. English shipwrights recognized the superior quality of the live oak, which grew in a narrow band along the coast south from Hampton

\textsuperscript{242} Albion, \textit{Forests and Sea Power}, 149-50.
Roads in Virginia along the Atlantic and coasts of the Gulf of Mexico, with many high quality specimens found on islands off the coasts of Florida and Georgia. Although the Royal Navy never adopted the live oak for use, it remained highly prized by Americans.\textsuperscript{243} The inferior white oak grew in New England and became, along with fish, a staple export for the region due to limited industry and agricultural capability during the seventeenth and early eighteenth centuries. William Cronon identifies the white oak as “the chief wood used for the timber and planking of ships” and the making of barrel staves. The resistance to tropical worms made black oak, which ranged throughout eastern North America, especially useful below the waterline in ships.\textsuperscript{244} Additionally, ships required a variety of timbers ranging from curved to straight to angled, which privileged certain trees over others for specific parts of a ship.

Dry rot contributed to British prejudice against foreign wood, especially oak. The result of a fungal growth from within the wood, dry rot turned the core to a powder while leaving few outward signs of its appearance. It proved equally dangerous because of the fungus’ ability to migrate into surrounding timbers that might have otherwise been sound. Albion identifies the four primary reasons for the prevalence of dry rot to be “unseasoned timber, the use of certain foreign woods, improper construction, and lack of ventilation.”\textsuperscript{245} The cause of British prejudice lay less in a direct comparison of the quality of wood, but rather in the perceived quality which sometimes degraded as a result of the import process. Freshly cut timber, or green wood, is heavy with sap. Different

\textsuperscript{241} Ibid., 23.

\textsuperscript{244} Cronon, \textit{Changes in the Land}, 109.

\textsuperscript{245} Albion, \textit{Forests and Sea Power}, 11-13.
varieties of wood required different seasoning methods with varying lengths of time to complete. As early as 1609, the British Admiralty advised that timber be “seasonse in water to suck out the sappe and after dryed by the ayer and sonne and pyled uppe till thear be fitte use of it”—a process that sometimes took two or three years to complete. Seasoned wood succumbed less often to dry rot and increased its durability. In the case of foreign wood, quantity and haste sometimes dictated that timber be placed green and still wet from its journey down a river into the hold of a timber ship traversing the Atlantic during the warm travelling season. In such cases, some of the green wood often developed dry rot, reducing its effectiveness and resistance to the stresses of naval operation. The Admiralty knew this, observing in the State of the Navy drafted by the Naval Commission of Inquiry in 1609 that “buylding and repaireing Shippes with greene Tymber, Planck and Trennels it is apparent both by demonstration to the Shippes danger and by heate of the Houlde meeting with the greeneesse and sappines thereof doth immediately putrefie the same.” The white oak’s presence as the primary oak exported from the American colonies contributed to the English notion that American timber was inferior to its English counterparts. Yet despite the role of human judgment in contributing to dry rot, there persisted among the English a prejudice against foreign timber in warship construction.

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246 Admiralty Library, MSS, p. 141; State of the Navy, 1609, f. 60 quoted in ibid., 13.
247 Ibid., 14.
248 Admiralty Library, quoted in ibid., 13
The preference for timbers from within England and the need of a navy to protect the island nation as well as their growing commercial fleet forced the country into precarious dependence upon foreign woods, while necessitating a navy to protect their interests. The concern about English timber depletion and its effect on the navy reaches back as early as early as 1635, when Admiral Sir William Monson observed that “all kinds of wood that belongs to the building of ships or other works have relation to timber. For wood is now utterly decayed in England, and begins to be no less in Ireland,” adding that “if our timber be consumed and spend it will require the age of three or four generations before it can grow again for use.”

English bias against American oak included ships constructed in America for use either by the Royal Navy or by English merchants. For this reason, many American merchants used the lower-quality white oak for the construction of ships built for sale while they acquired sturdier live oak from the southern colonies to construct vessels for their own use.

Sawmills were an important component of the timber harvesting process as these facilities provided the site at which most recently hewn timbers were cut into lumber for specified use or transport. As colonies grew and industry developed, mechanized saws used to cut timber into lumber increased the rate and quantity of cut boards. Recently cut logs were hauled to sawmills for cutting unless the log retained greater value whole, such as with white pine logs for masts. Though disputed, the earliest sawmill in America is thought to have been built near York, Maine in 1623, just three years after the first

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250 Ibid., 13-15.

251 *Naval Tracts of Sir William Monson*, quoted in ibid., 95.

252 Ibid., 24.
permanent English settlement in New England.\textsuperscript{253} Rivers, tides, or wind usually powered mill saws resulting in the typical establishment along rivers near stands of valuable trees. Due to the noise of the saw and the need to be near both a source of power and source of timber, sawmills were frequently located some distance from settlements, on the frontier edges, often along rivers to ease transshipment. As shipbuilding became an important industry among the New England colonies, additional selective timber harvesting resulted. The result of identifying and removing specific trees was less a localized deforestation, as more commonly happened in inhabited areas, and more a targeted removal of selected tree species within reach of the primary logging routes. By 1700, loggers often traveled as much as twenty miles inland to obtain a good mast, and had to go a mile or two further every year.\textsuperscript{254} If the distance grew too great, mill operators disassembled and moved the mills closer to the timber.\textsuperscript{255} Lumber became the primary economic feature of New Hampshire and Maine during the seventeenth and eighteenth centuries, with settlements often following the establishment of mills into the frontier.\textsuperscript{256}

With comparatively little to offer in the way of the high-value commodities, New England merchants turned to the abundant woods and bent the boughs of the forest to their commercial needs. The New England colonies used abundant local wood to construct a fishing fleet and a merchant fleet. The cod industry enabled New England to

\textsuperscript{253} Defebaugh, \textit{The Lumber Industry}, ii, 6.

\textsuperscript{254} Albion, \textit{Forests and Sea Power}, 269.

\textsuperscript{255} Williams, \textit{Americans and Their Forests}, 97.

\textsuperscript{256} Defebaugh, \textit{The Lumber Industry}, 8-9, 307; Albion, \textit{Forests and Sea Power}, 233.
supply dried provisions to the labor intensive southern colonies and West Indies.\textsuperscript{257} The merchant fleet constructed throughout New England allowed numerous merchants to become the middlemen that formed the links of the traditional triangle trade. By 1676, the future governor of the Dominion of New England, Edward Randolph, suggested that Massachusetts provide surplus provisions to Virginia and the West Indies while also supplying “all things necessary for shipping and naval furniture,” adding that over four hundred ships between thirty and two hundred and fifty tons “are built in and belong to that jurisdiction.”\textsuperscript{258} Randolph made a keen observation regarding Boston’s role in the early Anglo-American economy, noting that “it is the great care of the merchants to keep their ships in constant employ, which makes them trye all ports to force a trade, whereby they abound with all sorts of commodities, and Boston may be esteemed the mart town of the West Indies.”\textsuperscript{259} According to the research of Joseph Goldenberg, “New England shipyards supplied about half of the American-built tonnage in Great Britain at the end of the colonial period,” with Massachusetts and New Hampshire as the leading producers.\textsuperscript{260} Newly constructed ships did not leave empty. Newly constructed vessels making their maiden commercial voyage often carried timber among their initial cargo. Goldenberg describes a merchant who “purchased new Rhode Island vessels, loaded them with lumber, and consigned the ships and cargoes.”\textsuperscript{261} Similarly, British merchant Elias Bland

\textsuperscript{257} McCusker, \textit{The Economy of British America}, 99-100.

\textsuperscript{258} Edward Randolph in Morison, \textit{The Maritime History of Massachusetts}, 17.

\textsuperscript{259} Ibid.

\textsuperscript{260} Goldenberg, \textit{Shipbuilding in Colonial America}, 99.
of London ordered a ship “destined for the West Indian and London trade” to “collect a lumber cargo for the ship’s first voyage to Jamaica.” In this role, New England, with Boston as its commercial heart, increasingly became the center of mercantile activity in colonial Anglo-America, providing basic provisions, such as timber and dried fish to the southern mainland colonies and the West Indies in return for commercial products that merchants resold to English merchants for cash then used to purchase finished goods.

New England, and especially Massachusetts, figured proximately in the history of colonial shipbuilding, but did not claim a monopoly on the industry. The southern colonies of the Atlantic coast also utilized wood for the commercial benefit of shipping and shipbuilding. In South Carolina, plantations made domestic use of native woodlands, or burned them completely to clear the land, but the colony also supplied wood to the British West Indies. Francis Hall, in his 1731 description of the British colonies in America, depicted South Carolina as “no place more capable or convenient for building ships” because “the Countrey abounds with fine Timber, and has as many fine Rivers as any Part of the known World.” Hall accounted for South Carolina’s timber exports, among which he identified “Cedar Wood, Deal Boards, Pipe Staves, Timber of all Sorts, Masts, Yards, etc. And some few Ships have been built there, and those as good as any

261 Ibid., 100.
262 Ibid., 102-3.
263 Albion, Forests and Sea Power, 264.
265 Hall, The Importance Of The British Plantations, 63.
that ever were built in America.” 266 Colonial shipwrights made judicious use of the longleaf pine growing along the warm southern coasts of North America. Sometimes called the “Pitch pine”, “Georgia pine”, “yellow pine”, and “southern pine”, the longleaf pine did not reach the heights of the white pine, but did prove adequate for masts as well as ship timber and especially naval stores. Albion indicates that “several ships later sent against the Americans were built of this American timber.” 267

Alongside the commercial use of timber for colonial ship construction lay the efforts of the British government to protect their dwindling strategic timber reserves. The British Admiralty competed with more than the American colonies for ship timbers and masts into the eighteenth century. The United Company of Merchants of England Trading to the East Indies, known more commonly as the British East India Company, sought timber for ships to supply the growing East India trade that culminated in a conflict between commercial interests and the Royal Navy’s desire to secure a strategic reserve. The conflict with the East India Company played out in the halls of parliament where the wrangling of politicians and merchants birthed “an act for the more effectually securing a Quantity of Oak Timber for the Use of the Royal Navy” that became the Timber for the Navy Act of 1772. 268 While the primary effect of the legislation banned the construction of East India Company ships with English wood until they reduced their

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266 Ibid. Deal boards refer to boards cut from pine or fir trees.

267 Albion, Forests and Sea Power, 34-35.

fleet size to 45,000 tons “on Pain that the said Company, and every other Person or Persons so offending shall, for every Ship which shall be built,…forfeit and pay the Sum of Five thousand Pounds of lawful Money of Great Britain,” it did not “extend to prohibit the said United Company from building, contracting for, or hiring…any Ship or Ships whatsoever in India, or any of His Majesty’s Colonies in America.”269 The act went on to expressly declare “that all such last mentioned Ships which shall be built in India, or in any of His Majesty’s Colonies in America, shall be, to all Intents and Purposes, considered and deemed to be British-built Ships.”270 This latter provision dramatically increased the value and demand of American-built ships, but equally increased the demand for trees, which in addition to the existing conflict between their use as domestic timber and strategic mast supply, now felt the added burden of commercial shipbuilding supporting trade on the other side of the world. By the time of the American Revolution, the American colonies had constructed almost a third of all ships then registered in Great Britain.271

Mast Trees and the Broad Arrow Policy

The vast fleet of merchant ships constructed in the colonies and the war vessels which drew choice timbers from the King’s Forests in North America had a profound effect upon the commercial development of the British Empire in the Atlantic, but growing importance of some tree species, such as the white pine prominent throughout

269 Ibid., 333.

270 Ibid.

New England, created a direct competition between the strategic goals of empire for the maritime protection and enforcement of trade and the domestic intentions of the colonists living beside and among the trees. As already observed, several early advocates made a case for the value of trees in North America. It took several decades for the English to determine that available supplies in the colonies were worth protecting through parliamentary action, and when they did, the series of acts that followed beginning in the 1680s became collectively known as the Broad Arrow Policy. The policy laid claim to and governed the use of specific trees within New England—a use that conflicted directly with the frequent ongoing use of the trees for domestic construction material.\textsuperscript{272} It also led to several altercations between the colonists and those entrusted with carrying out government policy in the colonies.

The pine served a special role within ship construction. Prized for its elasticity, strength, proportion, and ability to grow straight and tall, pines were sought for use as masts, yards, and spars. The sizes needed varied greatly depending on the size of the ship under construction. A 28 gun Royal Navy frigate, for example, used comparatively small “sticks” seven inches in diameter and twenty-one feet long for its maintopgallant mast, while a 120 gun first rate, slightly larger than the famous \textit{HMS Victory} used in the Battle of Trafalgar during the Napoleonic Wars, required a mainmast forty inches in diameter and one hundred and twenty feet in length. The difficulty of finding pines large enough in the Baltic forests to create “single stick” masts, or masts constructed from a single tree, led to the development of composite, or “made masts,” for many larger vessels. Made

\textsuperscript{272} Cox, \textit{This Well-Wooded Land}, 25.
masts consisted of multiple trees, either cut and fitted to form an adequately wide base for a mainmast or stacked atop one another and bolted together with a large iron ring to achieve sufficient height. In either case, the resulting mast was never as strong or sound as a “single stick” mast.\textsuperscript{273} The mast trade dated back to nearly the beginning of permanent English colonization in North America. Strachey’s 1609 account, written just two years after the settlement of Jamestown, is the earliest mention of mast procurement and shipment in the colonies.\textsuperscript{274} White pines were exported nearly every year after 1652 from Portsmouth and Falmouth in New England, and later from New Brunswick, where they supplied the steady need for masts in England.\textsuperscript{275} Under the leadership of William Gulston, John Henniker, and the firm Durand and Bacon, with the aid of a handful of mast agents, Portsmouth in New Hampshire and Falmouth in southeast Massachusetts retained a near monopoly on colonial export of masts to Great Britain.\textsuperscript{276}

Extraction of masts presented a significant problem. While many felled trees were sent as raw timber or cut lumber to port, it was necessary to transport the pine trees felled for masts both intact and undamaged. That process required an incredible amount of labor and coordination. Pines of adequate size, once located, had to have many of the surrounding trees cut in the direction of the intended fall, both to minimize the likelihood of cracking the pine by hitting another tree and to provide a cushion of logs for the pine to land to minimize cracking on impact. More than ninety-five percent of the pine trees

\textsuperscript{273} Albion, \textit{Forests and Sea Power}, 27-31.

\textsuperscript{274} Strachey, \textit{Historie and Travaile into Virginia Britania}, 130.

\textsuperscript{275} Albion, \textit{Forests and Sea Power}, 31.

\textsuperscript{276} Ibid., 56.
felled were found to contain some inadequacy visible to the loggers only after it had fallen. Those which did not make the grade were sawed into smaller pieces. For those few pines that were deemed worthy of mast timber, there began a laborious process of bringing the log to the mill or shipyard, either for use by a shipwright or for loading and export. This was accomplished by hooking a team of oxen to the felled pine and dragging it across the landscape, sometimes using smaller logs as rollers. Due to the length of the pine timber, which neared two hundred feet in some cases, the oxen could lose their footing as the land dropped away beneath them over undulating terrain, inadvertently hanging themselves in so doing, where they then had to be cut from their harness and the process begun anew.277 The extraction of single-stick masts was among the most arduous tasks involved in the assemblage of timber for ship construction.

By 1652, the Navy Board recognized and began exploiting the vast reserve of virgin pines in New England.278 The Broad Arrow Policy is among the most significant British efforts to identify and preserve timber for naval use. Surveyors of the King’s Woods were commissioned to identify useful trees, on which they made three axe strikes, resembling an arrowhead and shaft. Called the “broad arrow”, use of the mark commenced in earnest in 1691 with the Charter of Massachusetts Bay, which contained a Mast Preservation Clause specifying, in part:

...for the better provideing and furnishing of Masts for Our Royall Navy Wee do hereby reserve to Us...all trees of the Diameter of Twenty Four Inches and upwards of Twelve Inches from the ground growing upon any soyle or Tract of Land within Our said Province or Territory not heretofore granted to any private

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277 Rutkow, American Canopy, 27-28; Cox, This Well-Wooded Land, 25.

278 Albion, Forests and Sea Power, 28-30.
person. Wee...forbid all persons whatsoever from felling cutting or destroying any such Trees without the Royall Lycence of Us...279

Initially England imported its mast trees from the Baltic states, but the superior size of the white pines turned the Admiralty's eye towards the American colonies. Colonists paid little attention to the Charter's Mast Preservation Clause, and tree harvesting increased without regard for Broad Arrow protected trees.

As Baltic imports decreased, the British mast trade increasingly depended on North American trees, and enforcement of Broad Arrow Policy increased. While English oak continued to supply the sturdy timbers of English warships, a market for the white pine masts from New England for the Royal Navy grew at the beginning of the eighteenth century. According to British naval historian Nicholas Rodger, the white pine “came to dominate the small but valuable trade in ‘great masts’, large enough to make lower masts of ships of the line,” since European forests proved unable to supply trees larger than twenty-seven inches in diameter.280 Except for the largest of trees, New England contributed a comparatively small proportion of the overall masts consumed by the Royal Navy. Between 1706 and 1760, New England rarely supplied more than about fifteen percent of all imported masts, comprising something close to thirty percent for trees greater than eighteen inches in diameter.281 Act of the British Parliament issued as a proclamation declared all white pines upon unclaimed property to be the province of the


281 Williams, Americans and Their Forests, 91.
Crown for the construction of the Royal Navy and described them as “fit for the Masting her Majesties Royal Navy.”\textsuperscript{282} Persons appointed to the position of Surveyor-General of His Majesty’s Woods were responsible for selecting, marking and recording trees as well as policing and enforcing the unlicensed cutting of protected trees. This process was open to abuse, and the British monopoly was very unpopular with colonists. Part of the reason was that many protected trees were on either town-owned or privately owned lands.\textsuperscript{283} Colonists could only sell mast trees to the British, but felt undercompensated for the lumber. Even though it was illegal for the colonists to sell to enemies of the crown, both the French and the Spanish bought mast trees from the colonists and paid a much better price. New England colonists frequently sawed large white pines for sale in the West Indies or to the Portuguese wine islands or “for their own shipbuilding and domestic uses.”\textsuperscript{284}

New legislation governing the use of the white pine continued into the eighteenth century that broadened the number of white pines affected by the laws and consequences for cutting them. The legislation also opened the divide between what the colonists perceived as the fair use of unclaimed and available timber and what the British parliament viewed as a strategic resource that they must protect for the defense of the Empire. The British Parliament passed the White Pine Act of 1722, protecting for the


\textsuperscript{283} Albion, \textit{Forests and Sea Power}, 242-43, 254-55.

\textsuperscript{284} Williams, \textit{Americans and Their Forests}, 84, 92.
navy all white pines not included in townships or growing on private land. Resenting such interference, numerous “paper townships” sprang into existence to avoid the law.\textsuperscript{285} In 1722, the New Hampshire General Court made the act of cutting a white pine greater than twelve inches in diameter a penal offense. The new legislation levied a fine of £5 for the smallest twelve-inch trees, rising to £50 for the more precious trees exceeding twenty four inches in diameter.\textsuperscript{286} Put into context, the average laborer or tradesman in 1739 made approximately twelve shillings\textsuperscript{287} a day and a load of timber\textsuperscript{288} in 1741 cost about £13.\textsuperscript{289}

The Pine Tree Revolts

Some of the reports made to the Surveyor of the King’s Woods went unheeded in the first decades, but David Dunbar, appointed surveyor in 1734, took it upon himself to investigate allegations of illegal cutting and sawing of mast-sized white pines near Exeter, New Hampshire and initiated the first major recorded altercation over timber in

\textsuperscript{285} Ibid., 92.


\textsuperscript{287} 20 shillings = 1 pound sterling (£).

\textsuperscript{288} According to R.G. Albion, a “load” of timber equates to about “fifty cubic feet, the equivalent to six hundred American board feet. Roughly, the average oak of timber size contained about a load of timber and….weighed about a ton and a quarter.” Albion, Forests and Sea Power, 9.

the American colonies. The lumberjacks and mill operators knew that Dunbar sought information regarding the white pines, but rather than aid a representative of the imperial government in enforcing a law that persecuted colonial New Englanders for the domestic use of local white pine trees, they instead raised a commotion which included shouting and firing guns into the air and chased Dunbar away from the mill. Dunbar returned some weeks later with hired men on the evening of April 23, 1734. Dressed as Native Americans, approximately thirty local men violently assailed Dunbar and company in what became the Mast Tree Riot. According to the proclamation later made by the New Hampshire legislature,

a great number of ill disposed persons assembled themselves together at Exeter in the Province of New Hampshire…and there in a riotous, tumultuous and most violent manner…did then fall upon beat wound and terribelly abuse a number of men hired and imployed by the Honorable David Dunbar, Esq. as Surveyor General of his Majesties woods, as assistants to him in the execution of said office, many of which were beat and so abused that they very narrowly escaped with their lives (as appears by examinations taken by power of his Majesties Justices of the Peace for said province) all of which is a very great dishonor to this his Majesties province and contrary to all laws and humanity, and ought to be detested and abhorred by all parts of the legislative power.

The Mast Tree Riot is one of the first violent upheavals by the colonists against legislative actions dictated by the British parliament. It illustrates the lengths to which the American colonists would go to exercise self-determination over their perceived right to use local resources and the opening of a rift between the strategic needs of the imperial

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291 Ibid., 73.

government and the domestic uses deemed of greater importance by the local colonists. Their displeasure over the exertion of imperial will upon the white pines rose only with enforcement of the legislation. The colonists appear unconcerned about imperial legislation governing strategic resources, such as the white pine, so long as the laws remain unenforced and give effective consent to self-determined consumption of the trees in any fashion of the colonists devising. The riot also casts in sharp relief the contrasting values placed upon local, available trees by the colonists deriving immediate benefit from the timber and the abstract view of the white pines as a strategic resource necessary for the construction and maintenance of the Royal Navy.

While the Mast Tree Riot provides evidence of a negative colonial reaction to the Broad Arrow Policy, not all potential timber merchants fought the legislation. Some merchants actively sought official licenses to cut the white pines in support of the mast trade and grasped at the chance of a contract to provide masts for the Royal Navy. Local monopolies existed throughout New England where powerful timber merchants acquired legal patents to white pines in a specific geographic area. In a surviving grant from Benning Wentworth, Governor of New Hampshire and Surveyor-General of the Kings Woods, dated December 26, 1744, Wentworth granted “to Peter Staple & Toby & their Workmen, to go into his Majesties [sic] Woods in the Township of Berwick, in the Province of Main, to cut & haul for his Majesties [sic] Use, twenty white Pine Trees.”

In this instance, their range is limited to the Township of Berwick, but a township could

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span dozens of square miles, offering tremendous potential opportunity for the discovery, felling, and hauling of choice white pine trees. The New England colonies did not remain on such an even keel with the Broad Arrow Policy forever, though. By the middle of the eighteenth century, the British began to recognize a timber crisis brewing within the Royal Navy and renewed efforts to enforce the Broad Arrow Policy.

Just as the Seven Years War proved a turning point in the politics of wood supplied to the sugar colonies of the British West Indies, so too did the war turn the poorly enforced Broad Arrow Policy into a matter of strategic importance. At the end of the war in 1763, the Royal Navy consisted of more than 135 ships of the line, which the British Parliament promised to keep on “the most respectable footing.”\textsuperscript{295} The demand for warships during the war led to the adoption of construction techniques that maximized the speed at which a ship would see service rather than the length of time the ship might serve. Such techniques employed timber inadequately seasoned to protect against the ravages of dry rot and resulted in a navy in dire need of repairs by the end of the war.\textsuperscript{296} Repairs proved increasingly impractical since the amount of wood available for new ship construction and maintenance in Great Britain played out at the same time. Ship construction during the Seven Years War exhausted nearly all of the available naval timber in England, leaving many counties with only between ten and twenty-five percent of their total woodland from just forty years before.\textsuperscript{297} As First Lord of the Admiralty,


\textsuperscript{296} Albion, Forests and Sea Power, 313-14.
John Montagu, 4th Earl of Sandwich sought to alert the Parliament to the potential for shortages as early as 1749, but it took more than twenty years before they acted on the information.298

Francis Bernard, Governor of Massachusetts Bay, reiterated the policy of the Broad Arrow as a proclamation in 1761.299 While the Massachusetts Bay government vocally supported the proclamation, some communities made direct reference to it. Goff’s Town, New Hampshire, provides an especially illuminating case. With the incorporation of the town the same year as Bernard’s emphasis upon the restrictions relating to the cutting of white pine trees, the town’s charter included the interesting provision that the community shall “Enjoy always Reserving to us our heirs & Successors all white pine Trees that are or shall be found growing & being on said Tract of Land fit for the use of our Royal Navy.”300 The tract of land referenced in the charter, “Extending seven Miles in Length and five Miles Breadth” equates to a sizeable area of approximately thirty-five square miles and apparently contained a large quantity of white pine trees.301 The mysterious language of the charter leaves unclear the intent of the author. Did the author intend for the community to consume the trees meant to supply the

297 Ibid., 133.

298 Murray, ”The Admiralty, Pan VI,” 330.


301 Ibid.
Royal Navy or did the author mean the community intended to assist in enforcing the protections reinforced by Francis Bernard? Whatever the author’s intent, the outcome is clear, as the vicinity of Goff’s Town became the site of further upheaval against the Broad Arrow Policy early in the next decade.

Surveys of the King’s Woods continued apace throughout New England in the decade following the Seven Years War. Deputies of the Surveyor-General of the King’s Wood surveyed any new land opened to timber harvesting and carved the broad arrow in those destined for the King’s Navy. Failure to have the land surveyed resulted in forfeiture of all harvested timber and the name of the owner posted to the Court of the Admiralty. The deputies also inspected sawmills for white pine logs greater than twelve inches in diameter. When the deputies found unmarked white pine logs at the mills, they marked the wood and required the mill owners to defend themselves in the Court of the Vice-Admiralty to justify their rightful claim to the wood. This state of affairs reigned into the 1770s. Colonists chaffed under the restricted use of available white pines, but generally abided by the rules or paid their fines.

As a timber crisis took hold in England following the Seven Years War, the royal officers under the Surveyor-General of the King’s Woods, increasingly supported by vigorously enforced legislation, strengthened their resolve to ensure a steady supply of masts to the King’s Navy. In 1770, the Surveyor-General of the Kings Woods in North America issued a broadside against cutting white pine trees and made it known “That all White Pine Logs cut and hauled out of the King’s Woods into Connecticut River, or

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elsewhere, will be seized to his Majesty’s Use, and Trespassers dealt with according to Law.”

Having depleted their timber reserves for naval construction during the Seven Years War, the British Admiralty moved in 1771 to require maintenance of a three-year supply.

In 1772, under mounting pressure by the British government then taking an active role in manipulating and enforcing trade policy throughout the Empire and in the American colonies in particular, some colonial mill owners rebelled against the enforcement of the Broad Arrow Policy and refused to submit to fines. During the previous winter, Deputy Surveyors of the King’s Woods made seizures of more than a thousand logs exceeding fifteen inches in diameter from six different mills near the New Hampshire towns of Goff’s Town and Weare. Following procedure, the New Hampshire Gazette published on February 7, 1772 a citation listing the offenders, the quantities of logs seized, and ordered that the mill owners present themselves at the Court of the Vice-Admiralty in Plymouth on February 27. The mill owners sent Samuel Blodget, Esquire as their representative to negotiate a settlement. In an interesting turn of events, New Hampshire Governor John Wentworth made Blodget an Assistant Deputy Surveyor of the Woods. In his new role, Blodget returned to the mills he previously represented and managed to collect fines from the mill owners near Goff’s Town, but those near Weare held out.


304 Albion, Forests and Sea Power, 134-35.

Samuel T. Worcester’s *History of the Town of Hollis, New Hampshire* provides most of what is known of the rebellion at Weare. Written in the late nineteenth century, more than a century after the events in question, the source might be an oral history of the event finally set to paper. The detailed flourishes offered by Worcester might prove unreliable, but the circumstances and general events he describes corroborate other sources. According to Worcester, a Sheriff Whiting was dispatched to Weare to arrest those charged with illegally cutting white pine trees. Whiting and his assistant made an arrest, but the offender offered to post bail if the sheriff waited overnight. Whiting agreed and retired. The offender woke Whiting early the next morning with the claim that the bail lay just outside the sheriff’s door. Without allowing Whiting the opportunity to dress, two men entered the room, held his arms and legs, and “proceeded to make their marks upon the naked back of the sheriff more to their own satisfaction than for his comfort and delight,” after which “they afterwards settled substantially in like manner with his assistant.” The rioters then allowed Whiting to depart on their horses “with their manes, tails and ears closely cropped.” Whiting left town humiliated, but returned with militia to arrest the offenders, who disappeared for a while, but ultimately surrendered. This second known uprising against enforcement of the Broad Arrow Policy became the Pine Tree Riot.

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307 Ibid., 122-23.

308 Ibid., 123.
Preceding the more broadly known Boston Tea Party by a year and a half, the Pine Tree Riot might have influenced those desiring to make a bold stand against British policies. The Pine Tree Riot, like the Mast Tree Riot before it, provides an excellent window into the mindset of the people experiencing a diminished freedom by rules designed to protect an abstract resource that exists across an ocean nominally for the benefit of the British Empire. Worcester wrote that the law responsible for inciting the riot “as it was enforced was more oppressive and offensive to the people of those times than the Stamp tax and Tea tax, and there is little doubt that the attempted execution of it contributed quite as much as either or both of those laws to the remarkable unanimity of New Hampshire yeomanry in their hostility to the British Government in the civil war that soon followed.”

Given the role of New Hampshire’s timber in the triad of resources uses, it is easy to discern why Worcester might assign such importance to the Broad Arrow Policy governing the white pines. That is not to discredit the overall importance of those policies or the conflict they generated, as it placed at odds the colonists seeking immediate and personal benefit from the trees, such as cutting for furniture, construction material, and cabinetry, and a distant government preserving the trees for its general protection without thought or consequence to the people living and thriving by their produce.

309 Ibid., 123.
Conclusion

Ships, shipping, and shipbuilding form one of the economic foundations of the mainland Anglo-Atlantic colonies and trees buttress ships in the most critical way. Trees from New England and the Carolinas provided timber for hull construction, white pines for masts, longleaf pines for most of the naval stores, and a variety of other woods to burn in furnaces to make the array of secondary products necessary for ship construction. While only the largest of the white pine trees might have been crucial to the Royal Navy, the mast trade did provide a substantial portion of the masts acquired. The naval stores extracted from the Carolina lowlands proved even more important to the navy while failing to produce any of the conflict that arose from control of the white pine tree. Regardless of the overall economic or strategic contribution of these resources, both had a lasting impact on the relationship between Great Britain and the mainland Anglo-Atlantic colonies.

The Broad Arrow Policy drove a wedge between the common New Englanders and the British government. With acts of civil disobedience against the government as early as 1734, the competing values inherent in the triad of resources uses contributed to the tearing of the British Empire in the years following the Pine Tree Riot. It is unknown whether the Pine Tree Riot inspired those who participated in the Boston Tea Party, but the importance of the pine tree took root deep in New England’s history. A pine tree appeared on the flags waving over ships of the Massachusetts Navy and upon one of the banners carried into the American Revolution in 1775, and rose at the Battle of Bunker
Hill.\textsuperscript{310} The consequence of the fracture in Empire only exacerbated the mast problem further. At the outbreak of the American Revolution in 1775, the British had three years of supply available, but did not secure a new source once the war ended shipment of masts from New England—the last of which arrived in England on July 31, 1775.\textsuperscript{311} This left the Royal Navy without the capability of constructing new large ships or repairing those that were dismasted at the critical moment that France entered the conflict in 1778.\textsuperscript{312} In effect, one of the most important strategic policies of the British Empire ultimately undermined the security of the very resource the policies were designed to protect and crippled the ability of the British Empire to hold the King’s Woods in America.


\textsuperscript{311} Albion, \textit{Forests and Sea Power}, 45; Rutkow, \textit{American Canopy}, 32.

\textsuperscript{312} Albion, \textit{Forests and Sea Power}, 45.
Chapter 6

CONCLUSION

Wood was one of the most ubiquitous commodities of the early modern period. It was a vital resource for nearly every aspect of life and bound together vastly different needs. From the strategic demands of naval might to the commercial enterprises of a fledgling mercantile economy to the domestic uses for cooking, heating, and construction, there existed few substitutes for wood and no natural resource that matched the diversity of roles served by wood until full utilization of petroleum brought about plastics in the mid-twentieth century. Despite the near universal availability of trees, wood for strategic, commercial, or domestic uses was not always readily available. Abundance and dearth of wood affected the success of settlements and contributed to the machinations of sovereign governments, colonial rebellions, and commercial ventures alike.

Once England righted itself after the defeat of the Spanish Armada and turned again toward the colonization of North America under Bartholomew Gosnold and the Virginia Companies, the first steps toward Empire began with the men and women who set upon the soil of the New World and carved from the forests homes and towns, furniture and firewood, potash for fertilizer, and shallops for transport. Only after the people surviving upon the new land transformed it and took from it their domestic needs could the colonies turn toward commercial pursuits in earnest. From Plymouth to Jamestown to Barbados, every nascent colony first had to survive and in each case, the
trees served as both friend and foe. Only once the colonists vanquished the trees and
cowed the forests to meet their demands did the commercial uses suggested by the men
whose words inspired a generation of colonial settlements in the early seventeenth
century finally reach fruition.

Gold and God provided the initial motivators for settlement and sugar and ships
enabled the economy that grew from it, but trees buttressed that economy by providing
the wood that colonists used to build the infrastructure for the exploration, settlement,
and commercial development in North America, and helped to lay the foundation for the
British Empire. The early stages of colonization held high hopes for the future and the
English were quick to burden the American forests with notions of material desire. By all
accounts, every need ought to have been met by the forest wealth, be they domestic,
commercial, or strategic in nature. There seemed to exist sufficient timber to meet all
needs. Driven by the difficulties of leveraging the accessible and productive timber
resources at home, the English called upon the shores of North America to make of
themselves a match for the Spanish and catapult onto the world scene. Reality held a
different path. It might have been true that coastal North America contained plenty of
wood and sufficient variety to meet all of the demands initially placed upon forests, but
the islands of the English West Indies told a different story. What these early accounts
failed to anticipate and address was human nature.

Early abundance of timber among the coasts of the English colonial Atlantic led
to mismanagement of those resources, inefficient and unsustainable use, and eventually,
localized deforestation. England suffered from more extensive forms of deforestation
throughout much of this period, which led to the establishment of preserves.\footnote{Elton, \textit{England Under the Tudors}, 198; Albion, \textit{Forests and Sea Power}, 123.} Conflict arose over the efforts of the British government to restrict and control the acquisition and distribution of natural resources, especially timber. Among the mainland colonies of North America, conservation measures protected the white pine for eventual naval use, but at the expense of limiting its availability for the domestic uses of New England colonists. Looking upon the effects of excessive timber use for commercial and military gain in England, and throughout Europe during the sixteenth century, could have been a warning to those that came to settle the early English colonies on the other side of the Atlantic, but it was not. Instead, the vast forested wilderness was seen and used as an endless reserve of timber resources. It is unclear whether there was even much thought during the seventeenth century whether the timber supplies could become scarce, as they had in Europe. What is clear is that trees were cut and consumed without much more than token regard for future supplies, forcing the economy of the British West Indies into a dependent relationship with their northern cousins for wood. Gulick argues that the cause of the “forest problem” rests in the change in the American people. He claims that those that peopled America came from an environment where caution was necessary to preserve limited resources, what Gulick calls a “love of the soil,” and instead developed a character of “freedom, initiative, and self-reliance,” but also “ruthless competition, a get-rich-quick morality, and a wasteful destruction of natural resources.”\footnote{Gulick, \textit{American Forest Policy}, 170-71.} Richard Grove argues that environmental degradation befalling many European colonies, coupled with a
growth of scientific interest, motivated governments to implement conservation measures in areas of existing natural wealth. “The absolutist nature of colonial rule,” Grove explains, “encouraged the introduction of interventionist forms of land management that, at the time, would have been very difficult to impose in Europe.”

Perhaps the colonists were unable to see the consequences of their actions upon the landscape in the same way the distant Europeans could. Only by recreating the conditions in America which engendered what Gulick describes of Europeans as a “love of the soil” could human interaction with the natural environment become sustainable, rather than a product to be consumed and discarded after use.

Timber dependence became an unanticipated consequence of the vibrant commercial activity that grew from the colonies. In particular, the British Caribbean’s agricultural economy depended heavily upon timber for fuel, building supplies, containers, and ships. As the British Caribbean consumed all of the easily accessible timber supplies, they turned to imported wood stock, which led to diverse and unforeseen consequences, environmentally, politically, and commercially. Many accounts of this period, from visitors and residents to merchants and appointed government officials, identify the significance of timber resources, and even the commercial value and viability of specific tree species. These accounts, taken together with changing mercantile policy, geopolitics, and deforestation, suggest a world dependent upon the region’s timber reservoir.

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315 Grove, Green Imperialism, 6-7.
The industries that flourished in support of ship construction served as a foundation for the economy of the United States of America, which continued the long tradition of putting its vast timberland to maritime service. The construction of the *Virginia* in the Popham Colony might serve as a metaphor and microcosm of the men who, thrown upon their own resources, found themselves in time cast into the very lap of fortune as Benjamin Franklin is thought to have suggested. The ships carved from American trees supported new economic endeavors, defense, and newfound independence and attest to the importance of timber to colonial development. Whether warships or merchantmen, the ships plying the water of the British colonial Atlantic were carved in part or wholly from the boughs of the American forest. On the eve of the American Revolution, nearly half of the British merchant fleet then afloat originated from American timber and nearly every British warship contained some amount of American wood, with an increasing likelihood of carrying a mast of white pine cut from the forests of New England.

As English timber became scarce, distant sources came to play an increasingly important role to meet demands placed by the needs of the growing navy. As a consequence, a positive feedback loop developed that necessitated a navy to support dominance upon the seas to both find and secure timber to support the navy’s continued growth.316 Shipbuilding for merchants as well as the Royal Navy relied upon trees growing in Scandinavia and the Baltic Sea, but those on the North American mainland did not require foreign entanglements. The Broad Arrow Policy, designed to ensure

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316 Albion, *Forests and Sea Power*, viii.
sufficient supply of the tall, sturdy white pine masts, also brought about conflict between the colonists and the representatives of the government’s strategic policy. Some colonists proved successful as middlemen in commercial ventures furnishing white pine trees to the Royal Navy under license, others felt oppressed by a distant government dictating the fortune of the colonists and claiming control of the timber resources the colonists saw as their own.

The showdown between the domestic use of white pine trees in New Hampshire and the strategic intentions placed upon them by the Admiralty and supported by acts of the British parliament prove that sufficient timber supplies are not adequate to meet the needs of every use demanded of the forest. Just as the strategic needs of the imperial government superseded the commercial interests of the mainland colonists, the strategic needs also subordinated the domestic plans of some timber to the distant imperial government. In each instance, the imperial government exerted its power for its own benefit at the expense of any use that competed. Interestingly, the strategic uses most often were farthest removed from the actual resource and thus those responsible for drafting policy governing such a resource had the most intangible understanding of the resource. Commercial and domestic uses of a natural resource deal directly with its consumption, creating a more direct impact for those affected by policies governing use. In the case of timber, strategic uses had the support of an imperial authority against the actions of the few who challenged policies affecting commercial and domestic uses. The triumvirate of uses, therefore, fall to the values of those governing the natural resources
and while it may seem that strategic uses always trump commercial and domestic
interests, there are examples where imperial authority was challenged.

More remains to be explored before a complete understanding is gained of the
role of timber resources in the economic and political development of the Anglo-Atlantic.
In the history of sugar and ships in the colonial Anglo-Atlantic, one area that might
require further exploration is the quiet role of trees in the grievances that led to the
declaration of independence by thirteen of the British mainland colonies in 1776, which
was suggested through the examination of the role of timber in the British sugar industry
as well as the Broad Arrow Policy. The operational independence that existed among
many of the wooded mainland colonies might have perpetuated a belief that the colonial
landscape belonged to those who carved a living from and died on it. The trees gave the
colonists the means to meet the domestic and commercial needs of the inhabitants. Pitting
the imperial core against the colonial periphery, conflict only arose when the distant
imperial government attempted to make strategic decisions from which the colonists
believed they could not benefit. The notion that the Americans could be successful
without the aid of the British expanded over several generations and may have
contributed to the ease with which the American colonies severed their economic ties to
Great Britain. Even as the accessible timber played out around the colonial settlements
and pushed the forest farther afield amidst the great assault of plantations, farmers, and
new settlers, the trees acted as midwife to the birth of a new commercial nation, borne of
the great woodland that surrounded it still and encouraged it to stand tall, like the mighty
pines, as it joined the world stage. What began for the English as an effort to compete
with the Spanish and the Dutch, while seeking in the colonies in North America a solution to the growing timber problem, spawned an ocean-spanning empire. From the early tentative efforts of the Hakluys to describe the necessary steps for a successful settlement to the Sugar Act and Pine Tree Riot, none could have foreseen the English successes and failures to come, nor that both the stage upon which British mercantilism stood and one of the stakes driving the empire apart would be carved out of wood.
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