

Roots of empire: State formation and the politics of timber access  
in early modern Spain, 1556-1759

A DISSERTATION  
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF MINNESOTA BY

John Thomas Wing

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

Carla Rahn Phillips, Giancarlo Casale

July 2009

© John Thomas Wing, July 2009

All Rights Reserved

## Acknowledgements

The completion of this dissertation is due in large part to the support of numerous teachers, friends, and family members who have helped me along the way. First, I would like to thank Professor Carla Rahn Phillips for her guidance and generosity. Her own scholarship has been a model to which I aspire. Many heartfelt thanks to Professor Giancarlo Casale for his insights and dedication. I always left Professor Casale's office with renewed excitement and new ideas to ponder. Professor Phillips and Professor William D. Phillips, Jr. greatly assisted my wife and me while we were in Spain. On several occasions, the Phillips' generously opened their doors to social events at their home; I always looked forward to dropping by. Thank you to the other members of my dissertation committee, James D. Tracy and Lee Frelich. Professor Tracy's seminars on the early modern era were among the most challenging and rewarding. Professor Frelich provided invaluable insights from the Forest Resources Department. My work benefited from financial assistance from the Program for Cultural Cooperation Between Spain's Ministry of Culture and United States' Universities, the Center for Early Modern History, and the University of Minnesota's Graduate School. My research would have been impossible without the generous and patient efforts of the archivists and librarians I met in Madrid, Valladolid, and Simancas. Thank you most of all to my family, who know that the first steps in this project really started a long time ago. My wife Sharon has been a great travel partner and a patient listener. She has helped me think through the tough questions, and she has helped make this dissertation much better than it would have been otherwise.

## Abstract

During the early modern period, Spain's empire extended into parts of five continents, separated by vast stretches of water. Spain depended on wooden ocean-going vessels to connect and defend its imperial holdings. Timber supplies, therefore, were essential to the continued functioning of one of the largest empires in history. However, Spain had a very limited timber resource base on which various sectors of society depended. Beginning in the middle of the sixteenth century, the Spanish state set in motion a process of territorialization to control access to forest resources for naval shipbuilding, affecting state and local relations, the politics of resource accessibility, and forest management practices all over Spain. This dissertation analyzes this process over the course of two centuries, explores how the Spanish crown met the challenges of local resistance and environmental scarcity to maintain its naval power, and it ends with an analysis of the creation and implementation of Spain's first national forestry code in 1748.

## Table of Contents

Acknowledgements.....	i
Abstract.....	ii
List of Figures.....	iv
1 – Introduction.....	1
2 – A New State Forestry for a New Global Age.....	26
3 – Growth and Persistence of Habsburg State Forestry in the Seventeenth Century.....	71
4 – Internal Expansion, Forest Reconnaissance, and Dynastic State Territoriality under the First Bourbon.....	124
5 – State Forestry Reforms during the Reign of Fernando VI, 1746-1759.....	166
General Conclusion.....	215
Bibliography.....	221

## List of Figures

Figure 1: Jorge Setara's map of the forest inspection in Catalonia and Valencia, 1589...	67
Figure 2: Partial view of the map of Juan Valdés y Castro's reconnaissance mission in the Ebro River network, 1740.....	168
Figure 3: Demonstration of pruning methods, 1773.....	180

## Chapter 1 – Introduction

### Early Modern State Formation and Territoriality

After comparing data from Japan, Burma, Siam, Vietnam, France, and Russia, historian Victor Lieberman observed a “little noted Eurasian pattern between c.1450 and 1830 whereby localized societies in widely separated regions coalesced into larger units – politically, culturally, and commercially.”<sup>1</sup> In each case, he found that they “sought to strengthen their extractive, judicial, and military functions, and systems of provincial control.” If one also considers states in other continents, such as the Sa’did state of Morocco and the Aztec and Incan empires in the Western Hemisphere, this coalescence occurred in different states from all over the globe. Population growth and increased international trade helped provide a dynamic economic base for such states, which also helped create greater military strength. During the early modern era, “in every world region, centralizing states building their military strength attained new territorial extent and new capabilities.”<sup>2</sup> As the scale of operations of these states grew, the costs of obtaining and maintaining weaponry, fortifications, armies, and navies grew as well, favoring the largest and wealthiest states.

The similarities between these and other powerful early modern states can only be discussed in very broad terms, since early modern states came in many different forms. The size and organization of the Netherlands, for example, differed dramatically from that of Mughal India, but the fact that such processes of state consolidation really were

---

<sup>1</sup> Cited from John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: University of California Press, 2003), 23. Also see Victor Lieberman, *Beyond Binary Histories: Re-Imagining Eurasia to c. 1830* (Ann Arbor: University of Michigan Press, 1999).

<sup>2</sup> Richards, 24.

global in scope has helped to refine the narrative of the rise of the West. Europe was not the only world region to develop devastating gunpowder technology or ocean-going sailing ships, for example. It was not the only world region that produced expansionist, colonizing states. In the early modern era, the Ottoman Empire, the Muscovy Empire, the Mughal Empire, Morocco's Sa'did *dawla* (state), the Qing Empire, the Safavid Empire under Shah Abbas, and Tokugawa Japan expanded centralized power and consolidated new territories under their authority with the help of artillery.<sup>3</sup>

Studies on the rise of state power around the globe have focused on instruments of finance, war technologies, and techniques for mobilizing personnel.<sup>4</sup> These states depended on armies to defend it, and they paid their armies by utilizing increasingly effective methods of tax collection. The proliferation of bureaucracies helped to extend state power by organizing the collection of taxes and the recruitment of soldiers. Other typical institutional indicators of early modern state formation include "the codification of laws, the transition from a government based on personal ties and clientage networks to one based on impersonal, centralized power, and the development of territorial states with precisely defined borders, jurisdictions, and political objectives."<sup>5</sup> These have been the traditional subjects of state formation.

---

<sup>3</sup> S.E. Finer, *The History of Government from the Earliest Times, Vol. 3* (Oxford: Oxford University Press, 1999), 1065.

<sup>4</sup> David Abernethy, *The Dynamics of Global Dominance: European Overseas Empires, 1415-1980* (New Haven: Yale University Press, 2000); Michael W. Doyle, *Empires* (Ithaca: Cornell University Press, 1986); Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (2<sup>nd</sup> ed. Cambridge: Cambridge University Press, 1996); James D. Tracy, *Emperor Charles V, Impresario of War: Campaign Strategy, International Finance, and Domestic Politics* (Cambridge: Cambridge University Press, 2002); William H. McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000* (Chicago: University of Chicago Press, 1982).

<sup>5</sup> Karl Appuhn, "Inventing Nature: Forests, Forestry, and State Power in Renaissance Venice," *The Journal of Modern History*, v. 72, n. 4 (Dec., 2000), 863.

The ways in which these states exploited the natural resources of their territory to maintain or enhance state power has received less attention. In a recent study, John Richards analyzed the impacts that early modern states had on the natural environment, and drew some early conclusions. He identified four historical processes at work, including “intensified human land use along settlement frontiers, biological invasions, intensified commercial hunting or the ‘world hunt,’ and energy and resource scarcities in core areas.”<sup>6</sup> His basic premise for this book was, “If more capable and effective states sustained and encouraged economic production in the early modern world, this meant in turn that human impact on the natural environment would be felt at a level and at a global scale never seen before.”<sup>7</sup> The case studies that he included indicate that early modern scholars have already done some very important work,<sup>8</sup> but Richards also left room for many more questions and much more research.

Modern day concerns with environmental degradation have led many people to seek historical origins of such crises. Environmental historians have focused most of their attention on problems associated with industrialization and global capitalism, that is, on human and environment relations after about 1750. Important subjects include some of the more visible problems in society, such as pollution, desertification, and deforestation.<sup>9</sup> The success of such studies has helped sustain environmental history as a

---

<sup>6</sup> Richards, 4.

<sup>7</sup> Ibid., 57.

<sup>8</sup> Examples are from Taiwan, China, Japan, the British Isles, Russia, South Africa, the West Indies, Mexico, Brazil, the Antilles, Eastern North America, Siberia, and the northern oceans.

<sup>9</sup> J.R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York: W.W. Norton & Company, 2000); Donald Worster, *Dust Bowl: The Southern Plains in the 1930's* (Oxford: Oxford University Press, 1979); Rachel Carson, *Silent Spring* (Cambridge, MA: Riverside Press, 1962).

small but actively growing historical subfield of its own.<sup>10</sup> Some historians look back further, not necessarily to understand the immediate causes of modern environmental crises, but to understand deeper historical trends such as changing perceptions of nature over time, the role of human activity on historical landscape change, and historical deforestation, for a few examples.<sup>11</sup>

More recently, scholars in geography, anthropology, and the environmental sciences have explored the intersection of state power, resource access, and territorial control, the dynamics of which have had tremendous impacts on environmental decision-making, on the allocation of vital natural resources, and even on the ways that people identify and define environmental problems.<sup>12</sup> This approach to environmental studies is still relatively new in the social sciences, and has not attracted much attention from historians of the pre-industrial, or early modern environment. However, the fact that most of this scholarship has taken state power as its main source of analysis bodes well for early modern historians interested in similar questions regarding resource accessibility and state formation. Such questions are crucial to understanding more about state goals

---

<sup>10</sup> The American Society for Environmental (ASEH) history was formed in 1977. It holds annual conferences and publishes the journal *Environmental History*. Environmental history panels appear regularly in several other history organizations' conferences such as the American Historical Association. There are several international environmental history organizations as well, including the European Society for Environmental History (ESEH), which was founded in 1999.

<sup>11</sup> Gerhard Jaritz and Verena Winiwarter, "On the Perception of Nature in a Renaissance Society," in Mikulas Teich, Roy Porter and Bo Gustafsson, eds. *Nature and Society in Historical Context* (Cambridge: Cambridge University Press, 1997), 91-111; Simon Schama, *Landscape and Memory* (New York: Alfred A Knopf, 1995); Keith Thomas, *Man and the Natural World: A History of the Modern Sensibility* (New York: Pantheon Books, 1983); Clarence Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (Berkeley: University of California Press, 1967).

<sup>12</sup> Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Berkeley: University of California Press, 2000); Nancy Lee Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley: University of California Press, 1992); James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998); Peter Vandergeest, "Mapping Nature: Territorialization of Forest Rights in Thailand," *Society & Natural Resources* (1996); Mahesh Rangarajan, *Fencing the Forest: Conservation and Ecological Change in India's Central Provinces 1860-1914* (Oxford: Oxford University Press, 1996).

and motivations, territorial control, natural resource management, and environmental change. The dynamic process of state formation in the early modern world, as pointed out by Lieberman, presents many opportunities for this new research and for future comparisons based on issues of environmental management within these states.

One theoretical foundation for the study of the intersection of state power and natural resources is human territoriality, defined by geographer Robert David Sack as “the attempt by an individual or a group to affect, influence, or control people, phenomena, and relationships, by delimiting and asserting control over a geographic area.”<sup>13</sup> The broad definition purposefully allows for studying territoriality in a wide variety of contexts and scales. In his study of human territoriality, Sack draws examples from parenting, office work, primitive societies, the United States government, and the Catholic Church. Territoriality operates by proscribing or prescribing specific behavior and activities within spatial boundaries. Sack argues that territoriality occurs through three interdependent relationships. First, it must involve a form of classification by area. Second, its conditions, such as its territorial boundaries and its restrictions on activities, must be communicated somehow. Third, it must “involve an attempt at enforcing control over access to the area and to things within it, or to things outside of it by restraining those within.”<sup>14</sup>

---

<sup>13</sup> Robert David Sack, *Human Territoriality: Its Theory and History* (Cambridge: Cambridge University Press, 1986), 19.

<sup>14</sup> *Ibid.*, 21-22.

Studies of territoriality in early modern states appear most often in the scholarship of international relations.<sup>15</sup> Hannes Lacher, for example, studies the historical formation of state systems. He challenges the widely accepted idea that the state system that resulted from the Treaty of Westphalia in 1648 is essentially the modern one still in operation today. He argues for a distinction between territorial state formation in the early modern era, or “absolutist territoriality,” and “capitalist territoriality.” The two operated using fundamentally different “forms of organizing the relations of domination and exploitation – or what may be called the social relations of sovereignty.”<sup>16</sup> Capitalism exists today in a system of distinct sovereign states not because of anything inherent in capitalism, “but because capitalism came to exist in and through the system of territorial sovereignties created through the process of political accumulation.”<sup>17</sup> While identifying a territoriality particular to the early modern era, Lacher maintains inter-state and inter-dynastic relations as the basis of his analysis.

Peter Vandergeest and Nancy Lee Peluso, adapting Sack’s theory of human territoriality to their study of forest management in the modern state of Thailand, coined the term territorialization to describe the political process that established control of forests as well as of the people who used them. While state territoriality is linked frequently to the demarcation of external boundaries and modern international relations, Vandergeest and Peluso are concerned with “the internal territorialization of state power

---

<sup>15</sup> Michael Burgess and Hans Vollaard, eds., *State Territoriality and European Integration* (New York: Routledge, 2006); Hannes Lacher, *Beyond Globalization: Capitalism, Territoriality, and the International Relations of Modernity* (London: Routledge, 2006).

<sup>16</sup> Lacher, 80.

<sup>17</sup> *Ibid.*, 98.

and its relation to the allocation and realization of resource access rights.”<sup>18</sup> By focusing on the process of internal territorialization, they analyze state-society relations regarding natural resource accessibility, and connect political actions and the rise of state power. Since they study modern state power, territoriality is based on abstract (Cartesian) space, divisible into discrete units of measurement and visible through modern mapping technologies. Certainly, internal territorialization of a modern state operates somewhat differently than one did during a period of state formation in an early modern and pre-industrial context, but such differences have not been explored explicitly.

The theoretical approaches of Sack, Lacher, Vandergeest, and Peluso allow historians of early modern states to take a new approach to studying state motivations and goals by focusing on issues of gaining and maintaining access to natural resources. The operations of early modern states were heavily restricted in their activity by geographical realities, technological limitations of the time, and traditional social structures. Any study of territorialization must consider these factors.

### **Introducing Territoriality and State Forestry in Early Modern Spain**

I incorporate the theories of territoriality and internal territorialization into my study of early modern Spanish state forestry. The Spanish state’s need for timber, primarily for shipbuilding, led to closer involvement in forest management and forest conservation beginning in the sixteenth century. Its ability to gain and maintain access to forest resources was conditioned by the geography of Spain and its geo-political position *vis-à-vis* other states, continents, and oceans. Just as importantly, the crown (a term I use

---

<sup>18</sup> Peter Vandergeest and Nancy Lee Peluso, “Territorialization and State Power in Thailand,” *Theory and Society*, v. 24, n. 3 (Jun., 1995), 387.

synonymously with “the state”) had to maintain the social order, and not drastically alter traditional forest management systems. Therefore, the crown’s efforts to control its forests faced social as well as geographic restrictions. At times, such restrictions forced the crown to look to foreign sources of timber, particularly for masts, but the crown continued to prefer and promote domestic self-sufficiency. The combined goals and practices of the crown that aimed to conserve trees for naval use in this period are what I refer to as state forestry. At times, I use the phrase “dynastic state forestry,” since Spain’s foreign policies often formed in relation to dynastic rivalries, and its foreign policy heavily influenced its forestry policy.

Initially, state forestry operated in a small fraction of Spanish woodlands. Naval timber had to be easily accessible, and the crown could not afford to transport wood much farther than a few leagues from the sea or a navigable river, since overland transport could be costly.<sup>19</sup> The crown managed forests for specifically naval interests, so certain tree species received special consideration. For example, oak trees were the most valuable species, since they provided sturdy and durable timber, suitable for the construction of hulls. As a result, coastal forests became the spaces in which state forestry operated, altering the social and political relations regarding forest access and use in these areas. The timber needs of the state and the environmental conditions at the local level, therefore, shaped the territoriality of Spanish state forestry.

Antonio Ortega Santos discusses how forest management models may undergo a series of transitions over time, changing the basic function that forests serve in society. An example of a change in forest functionality includes a transition from an integrated

---

<sup>19</sup> A league was a unit of distance that a person or a horse could walk in about 1 hour, approximately 3.5 miles or 5.5 kilometers.

agrarian (agrosilvopastoral) system that serves a variety of local interests to a commercial management system that transfers surplus to a wider national or international market. Ortega says, “Consequently, changes in the functionality of woodlands are decisive for understanding their [biological and economic] evolution.”<sup>20</sup> I argue that the political imposition of state forestry in the early modern period altered the functionality of Spain’s coastal woodlands. With the presence of royal oversight beginning in the sixteenth century, forest management concerns shifted from local, mostly domestic supply needs to mostly naval shipbuilding needs, which included privileging the forest spaces and tree species best suited for naval access and use. The goal of state forestry was to gain and maintain primary access to all suitable forests within economical range of Spanish shipyards. To gain primacy over the trees, and over what people could do to them in the forests, resulted in a process of internal territorialization that slowly enhanced state power and altered the functionality of coastal woodlands. This dissertation is an examination of this process.

### *Guernica Oak and Galleon Hull*

During act one, scene one of playwright Tirso de Molina’s (1571-1648) *La prudencia en la mujer* (1633), set in the fourteenth century, three nobles each discuss their desire to marry the queen-regent, making their case against the other two. At one point, *don Enrique*, the brother of the deceased king, Alfonso X, attacks another noble’s Basque heritage, calling the region rustic and poor, and its people vulgar. He even insults

---

<sup>20</sup> Antonio Ortega Santos, “Commons and Rural Communities: An Environmental History of Conflicts in [a] Mediterranean Ecosystem,” presented at *Common Ground, Converging Gazes: Integrating the Social and the Environmental in History*, International Conference held at l’École des Hautes Études en Sciences Sociales, Paris, September 11-13, 2008, 4.

the symbol of Basque identity – the Guernica oak tree. The Basque under attack, *don* Diego López de Haro, the Conde de Bermeo, responds by defending his land and people, saying the Guernica oak itself protects his people from the tyranny of royal authority, implying that the tree is more than just a symbol.<sup>21</sup> Historically, the oak of Guernica had been the assembly point in Vizcaya where the local elders insisted that, as soon as a new monarch ascended the throne of Castile, he or she or a representative had to swear to uphold Vizcaya's traditional laws, or *fueros*. This practice is what gave the tree its symbolic power, and is the reason why *don* Diego would not allow a Castilian noble like *don* Enrique to disparage it.

Another playwright and poet, Lope de Vega (1562-1635), called the *Armada Invencible* a “forest of the sea” in a sonnet that glorified the “enterprise of England” of 1588.<sup>22</sup> In the poetry and artwork of the time, the vessels of Spain's maritime Golden Age, particularly the galleons, symbolized the wealth and power of the monarchy. They were floating fortresses and symbols of defense against hostile and heretical enemies. They served as Spain's commercial and military lifeline in this period, and even as the galleon gave way to other types of vessels in the eighteenth century, naval power still

---

<sup>21</sup> Tirso de Molina, *La Prudencia en la Mujer* (1633), retrieved on May 3, 2009 from <http://www.cervantesvirtual.com/servlet/SirveObras/12149419729037162098435/p0000001.htm#1>. “*Don* Enrique: Vos, caballero pobre, cuyo / Estado cuatro silvestres son, toscos y rudos, / montes de hierro, para el vil arado, / hidalgos por Adán, como él desnudos. / Adonde en vez de Baco sazonado, / manzanos llenos de groseros nudos dan / mosto insulso, siendo silla rica, / en vez de trono, el árbol de Garnica....*Don* Diego: Infantes, de mi Estado la aspereza / Conserva limpia la primera gloria / que la dio, en vez del Rey, naturaleza / sin que sus rayas pase la vitoria. / Cuatro bárbaros tengo por vasallos, / a quien Roma jamás conquistar pudo, / que sin armas, sin muros, sin caballos, / libres conservan su valor desnudo. / El árbol de Garnica ha conservado / la antigüedad que ilustra a sus señores, / sin que tiranos le hayan deshojado, / ni haga sombra a confesos ni a traidores. / En su tronco, no en silla real sentado, / nobles, puesto que pobres electores / tan sólo un señor juran, cuyas leyes / libres conservan de tiranos reyes.”

<sup>22</sup> Lope de Vega, “A la Jornada de Inglaterra, Soneto XLVI,” *Rimas* (1602), retrieved on May 3, 2009 from <http://www.cervantesvirtual.com/servlet/SirveObras/13527274323929275754491/p0000001.htm?marca=A%20la%20jornada%20de%20inglaterra#238>.

depended on Spanish timber. Galleons' hulls were made of Spanish oak trees. Forests, by extension, became important and valuable sites for the preservation of Spanish power.

The Guernica oak and the galleon hull were two political symbols made of the same material, but they represent two very different forms of territoriality. Guernica's oak tree represented the interests of the local scale. As the Basque lawmakers' assembly point, it represented the importance of the local decision-making process in determining regulations of resource use.<sup>23</sup> On the other hand, the galleon symbolized interests on a national or international scale. As the vessel that protected kingdom and empire, it represented the might of the Spanish state.

However, rather than a simple dichotomy, these two symbols also point to the overlapping and complicated relationship that existed between the crown and the forest communities of Spain. Guernica is in the Basque province Vizcaya, which is near the coast and is well forested. Many of its people made their living by fishing and, at times, by serving the crown in the navy. Likewise, the crown continued to reconfirm the *fueros* of Vizcaya each reign, in part because it needed *vizcaínos* to serve in its navy and to build its vessels.<sup>24</sup> The crown also knew it could not completely restrict forest communities

---

<sup>23</sup> The oak tree remains a symbol of Basque identity to the present day; it is the subject of its unofficial anthem, it is depicted at the center of several Basque coats of arms, and it is an emblem of the Basque nationalist party. In 1810, William Wordsworth wrote a poem about the tree where "those lofty lawgivers meet, Peasant and lord in their appointed seat, Guardian's of Biscay's ancient liberty." There have been four "Guernica oak" trees since the fourteenth century. After one tree dies, another one, grown from the old one's acorns, is transplanted to the location where the old one once stood. The first one, "el Padre" lived until the middle of the eighteenth century. Then, "el Viejo" stood from 1742 until 1892. The third tree survived the bombing of Guernica in 1937, but died after a 2004 heat wave. Currently, a tree that had been sown in 1986 and planted at the traditional assembly site in 2005 now stands.

<sup>24</sup> In addition to Vizcaya, the Basque region consisted of two other provinces, Guipúzcoa and Álava. All three were part of the Kingdom of Castile. Vizcaya and Guipúzcoa are strongly maritime, whereas Álava is more inland and terrestrial.

from using forest resources; to prevent a population from gaining access to its primary fuel and building supplies would have generated unwanted social unrest.

The Basque region was not the only region in Spain that was well forested and well protected with local privileges. Catalonia, for example, contained many of the forests used to build the galleys of the Mediterranean. The crown and Catalonia struck a similar balance of interests as in the Basque region. Municipalities in other provinces in the forested regions of northern Spain, such as Galicia, Asturias, and Cantabria, traditionally managed their forests without much involvement from the crown.

Also, forest management goals on the local and state levels were not uniform. At the local level, farmers and shepherds competed for land. Church and mill construction projects competed for timber. Pig farmers, tanners, coopers, and all sorts of craftsmen sought a wide range of forest products to earn their livelihood. Likewise, officials in the central government disagreed often about allocating resources for the navy. They had to balance the expenses and interests of the army, the court, and the bureaucracy at the same time. So, rather than serving as an indication of two sides that faced off in direct competition over control of forests, the Guernica oak and galleon hull together represent a range of interests that coexisted and struggled over scarce resources in early modern Spain.

I aim to examine the internal territorialization of Spanish state forestry within this context of forests as sites of multiple uses. There are no exhaustive studies of early modern Spanish state forestry, but Spain's historical position as one of Europe's first trans-oceanic empires and the largest and most powerful European state in the sixteenth century warrants a closer look at the ways in which the crown gained access to and

utilized its natural resources. Spanish naval power waned in the seventeenth century, especially in relation to the rising powers of France and England. Due in large part to this transition, scholars continue to overlook the recovery and reassertion of Spanish naval power in the second half of the eighteenth century. The historical background to that resurgence remains an obscure topic, but has its roots in forest conservation techniques that developed in the sixteenth century and persisted in the seventeenth.

### *Geographic Information in the Age of Exploration*

The Iberian Peninsula has a diverse topography and climate, which creates a variety of forest environments. The northern coastal region has the wettest climate of Spain, providing a suitable climate for common, often called English, oak and beech trees. In the Pyrenees Mountains, oak, beech, and black pine are common. The Mediterranean climate zone in eastern Spain contains a wider variety of vegetation, including pine, holm oak, ash, walnut, chestnut and beech trees. Southern Spain can be hot and dry, but the sierras of Andalusia contain pine, poplar, holm oak, and cork oak species. The sierras of the interior are well forested, but they were largely out of the range of naval interests.

Spain's environment posed numerous challenges to the crown's ability to exploit forest resources. Formidable mountains and seasonal climate extremes limited the places and times of year people could extract timber from the forests and transport it to the nearest marina. While abundant forests existed throughout Spain in ancient times, settled agriculture had deforested much of the lowlands by the time the Castilian language developed in the Middle Ages, resulting in the use of the word *monte* for both mountain

and forest. The Iberian Peninsula's rugged terrain made transportation in and out of the *montes* very difficult. The preferred mode of transportation was by river. However, Spain contains relatively few rivers large enough for dependable transport of timber. Some of the largest rivers, such as the Duero, Tajo and Guadiana, flow through Portugal before reaching the sea, and Portugal was an enemy of Spain for periods during the early modern era. Other important rivers included the Ebro, Turia, Júcar, and Segura, which all flow into the Mediterranean, and the Guadalquivir, which reaches the sea on Spain's southern Atlantic coast. The pattern of rainfall in much of Spain made many of its rivers only seasonably capable of transporting timber. During the hot months of summer, they would become too dry, and seasonal rains had the potential of causing flash flooding. It is difficult to generalize about rainfall in Spain, however, since the total number of days of measurable precipitation in a typical year can range from 140-180 days in the northern regions to fewer than 20 days in the desert of the southeast.<sup>25</sup> The mountains of the Mediterranean endured harsh winters, and in parts of Spain, such as in the Pyrenees, periods of heavy snowfall made many forests in the *montes* inaccessible.<sup>26</sup>

The process of territorialization for the crown required a process of accumulation of pertinent geographic knowledge. The crown had to gain precise knowledge about forest locations and accessibility. To do this, the crown often commissioned people to visit the forests, sometimes even to explore areas that the state did not know much about, and, it turned out, the state knew surprisingly little about its forests and *montes* before it

---

<sup>25</sup> Carla Rahn Phillips and William D. Phillips, Jr., *Spain's Golden Fleece: Wool Production and the Wool Trade from the Middle Ages to the Nineteenth Century* (Baltimore: Johns Hopkins University Press, 1997), 14-15.

<sup>26</sup> Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, tr. Siân Reynolds, (New York: Harper Colophon Books, 1972), 27.

developed the need for locating new sources of shipbuilding timber. With closer observation and regular inspections of forests by royal bureaucrats, the search for and identification of valuable sources of timber enabled an extension of state power.

Forest history was also shaped by Spain's position within a broader geographic context. Spain had extensive coastlines along the Mediterranean Sea and the Atlantic Ocean, drawing Spain into the politics of each region. Mediterranean naval warfare typically involved galleys, which were inappropriate for much Atlantic Ocean activity. The galleons were better suited for the open waters of the ocean. Both kinds of vessels, however, as well as many others, operated in both bodies of water.<sup>27</sup>

Different styles of vessels required different kinds of timber. While the beech forests of the Pyrenees supplied enough galley oars, the pine forests of Spain could not supply all of the masts needed for the larger, ocean-going vessels. All western European powers relied on pines from the Baltic region for masts. However, Spain was the farthest away from these forests, and either had to make costly purchases through Dutch merchants, or risk sailing past England, France, and the Dutch to get to the source. Spain was at war with at least one of these states for most of the early modern period. In short, Spain's geopolitical situation made the use of Baltic pine more costly, dangerous, and unreliable than it was for any other western European state. This perhaps helped promote a more urgent sense of the need to be self-sufficient in naval timber supplies.

In its empire overseas, Spain took advantage of colonial forests, particularly near the dockyards of Havana, Cuba; Coatzacoalcos, Mexico; Guayaquil, in modern day

---

<sup>27</sup> See John F. Guilmartin, *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century* (Cambridge: Cambridge University Press, 1974).

Ecuador; and Manila, in the Philippines.<sup>28</sup> It also purchased timber from its possessions in Italy, mainly Naples and Sicily.<sup>29</sup> More research needs to be done to understand the ways the crown gained access to and managed these forests, but it appears that the crown made its strongest efforts to territorialize forests in the Iberian Peninsula. There are three reasons that might help explain why closer control over Iberian forests seemed to be the primary concern of the crown, especially during the first several centuries of the early modern era. First, communication with peninsular authorities was more rapid and reliable, thereby enabling closer crown involvement. Second, many forests in the Americas contained trees unsuitable for the trans-Atlantic vessels made by Spanish shipbuilders. The climate of the Caribbean could not grow the sturdy oaks found in the Basque region, and tropical waters could cause dry rot in ships' hulls. Third, shipbuilding was a complex industry and required the supply of associated materials, such as iron, sails, rope, and many other kinds of items. The infrastructure of Spanish shipyards already had such related industries nearby or at least connected through commercial networks. It took many years for such a complex network of industries to develop in Spanish colonial settings. The forest legislation issued in Spain theoretically applied to New World forests as well, but more research is required to understand how such legislation was received and enforced. We know that by the eighteenth century, the crown sent Cuba special restrictions on forest cutting.<sup>30</sup>

---

<sup>28</sup> Alejandro de la Fuente, *Havana and the Atlantic in the Sixteenth Century* (Chapel Hill: University of North Carolina Press, 2008); Lawrence Clayton, *Caulkers and Carpenters in a New World: The Shipyards of Colonial Guayaquil* (Athens, OH: Ohio University, Center for International Studies, 1980); José Merino Navarro, *La armada española en el siglo XVIII* (Madrid: Fundación Universitaria Española, 1981).

<sup>29</sup> Braudel, 141-143.

<sup>30</sup> Archivo General de Simancas, Secretaría del Despacho de la Marina, legajo 552, November 9, 1734, Havana, "Prohibición de corte de maderas en los montes de La Havana."

The classic accounts of explorations in the New World have obscured the fact that similar kinds of exploration occurred within Spain itself. A “mapping” of Spain developed in the early modern era, as agents of the crown located and described forests and other geographic features that were previously unknown to state authorities.<sup>31</sup> Much like the explorations and mapping of the New World, the forest reconnaissance missions of Spain can not be understood outside of a broader process of imperial expansion.<sup>32</sup> The timber they were looking for, after all, was to be used to build the galleons and other vessels that maintained imperial communication, trans-oceanic trade, and naval defense.

The Argentine writers, Jorge Lu s Borges and Adolfo Bioy Casares wrote a one-paragraph short story, titled “*Del Rigor en la Ciencia*” (“On Exactitude in Science”), about an empire that developed the science of cartography to the point where it eventually made a map that was exactly the size of the empire.

“...In that Empire, the craft of Cartography attained such Perfection that the Map of a Single province covered the space of an entire City, and the Map of the Empire itself an entire Province. In the course of Time, these Extensive maps were found somehow wanting, and so the College of Cartographers evolved a Map of the Empire that was of the same Scale as the Empire and that coincided with it point for point. Less attentive to the Study of Cartography, succeeding Generations came to judge a map of such Magnitude cumbersome, and, not without Irreverence, they

---

<sup>31</sup> I use the word mapping to include cartographic representations as well as texts that described geographic features and locations, since the crown utilized various forms of geographic information to learn about its territory.

<sup>32</sup> Ricardo Padr n, *The Spacious Word: Cartography, Literature, and Empire in Early Modern Spain* (Chicago: University of Chicago Press, 2004). Padr n wrote about how mapping and empire were inseparable by focusing mainly on examples from Mexico, but a similar argument could be made about geographic information-gathering in Spain itself.

abandoned it to the Rigours of sun and Rain. In the western Deserts, tattered Fragments of the Map are still to be found, Sheltering an occasional Beast or beggar; in the whole Nation, no other relic is left of the Discipline of Geography.”<sup>33</sup>

Borges and Bioy Casares wrote their spoof as a literary forgery, falsely crediting it as a quotation from “Suarez Miranda, *Viajes de varones prudentes*, Libro IV, Cap. XLV, Lérida, 1658.” While creating a map the size of the empire is a fanciful idea, the first part of the story describes an empire’s desire for ultimately knowing everything about the geography of its possessions. It suggests how state power and geographic knowledge reinforced one another. Indeed, during the early modern period, the Spanish crown explored forests in its territory, gathered information about them, mapped them, and described them in order to manage them better. Moreover, the crown issued legislation to prevent their destruction and to control access to them.

The second part of the story by Borges and Bioy suggests the impossibility of achieving ideal goals. The futility of the endeavor to map the empire exactly led to the complete decay of geography, the science of the state. The story I am telling contains similar difficulties. As the Spanish crown faced limitations to its ability to know its forests down to the last tree, and to enforce its forest legislation, it never fully achieved the ideal goal of becoming self-sufficient in naval timber. However, by identifying specific areas that contained suitable and accessible timber, by communicating the rules and regulations of planting and cutting, and by developing techniques to enforce control

---

<sup>33</sup> Jorge Luís Borges and Adolfo Bioy Casares, “On Exactitude of Science,” in Jorge Luís Borges, *A Universal History of Infamy* (London: Penguin Books, 1975).

over access – all the elements of territoriality – the crown was able to meet the material needs of the navy.

### **Forests and State Power in Comparative Perspective**

The literature that exists on early modern forest management in other contexts provides this study with some bases of comparison. The diversity of early modern states carried over into a diversity of state forestry policies. State forestry in northern European states differed significantly between those states that had high demands for naval shipbuilding and those that did not. Some German territorial authorities, for example, enhanced their power by arbitrating local conflicts, not, as with French and English authorities, by directly exploiting domestic supplies and heavily relying on foreign supplies to meet the needs of their navies.<sup>34</sup>

In the Mediterranean region, we see a great range of forest management organizations and of state territoriality, with the territorial extent of a state playing a major factor in forestry policy. Venice sought to manage its forests very closely by excluding its subject populations from several state forests, while the Ottomans instituted no such regulations, instead relying on continued extensive exploitation of the abundant forests within its territory.<sup>35</sup>

---

<sup>34</sup> Robert Albion, *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862* (Cambridge, MA: Harvard University Press, 1926); Paul W. Bamford, *Forests and French Sea Power, 1660-1789* (Toronto: University of Toronto Press, 1956); Paul Warde, *Ecology, Economy, and State Formation in Early Modern Germany* (Cambridge: Cambridge University Press, 2006).

<sup>35</sup> See Appuhn, 866-874; Colin Imber, "The Navy of Süleyman the Magnificent," *Archivum Ottomanicum*, VI (1980), 211-282; Eyüp Özveren and Onur Yildirim, "Procurement of Naval Supplies during the Sixteenth Century: Venetian *Arsenale* and the Ottoman *Tersane* Compared," presented at the conference "Making Waves in the Mediterranean," organized by the Mediterranean Maritime History Network, Messina, Sicily, May 5-8, 2006.

Several published works that are more explicitly concerned with issues of territoriality and territorialization, while generally concerned with modern states, conclude that modern or colonial state efforts to manage resources in a rational way often fail.<sup>36</sup> State control over access and behavior in forests, imposed from the center or from a colonial authority, frequently causes unanticipated negative consequences due to a lack of incorporating local (typically peasant) knowledge. While the technologies of communication, transportation, and social control in modern states differ from early modern ones, research on Renaissance Venice indicates that a similar failure on the part of the state to listen to advice from local experiences occurred, and likewise caused problems in effective forest conservation.<sup>37</sup>

If we take into consideration Lieberman's notion of a Eurasian pattern of state formation, we could look to cases of state forestry in places where state power was growing at about the same time as in Spain, but much farther away. Leaders in Tokugawa Japan (1603-1868) began responding to widespread deforestation by 1670, instituting measures that would lead to remarkably successful conservation practices.<sup>38</sup> In seventeenth century China, while the Qing (1644-1911) instituted protectionist policies in its homeland of Manchuria, it did not show a serious commitment to forest conservation elsewhere, exploiting forests heavily in almost all other frontier zones within its spacious territory.<sup>39</sup>

---

<sup>36</sup> See Scott, 1-8; Vandergeest and Peluso, 414-417.

<sup>37</sup> Appuhn, 889.

<sup>38</sup> Conrad Totman, *The Green Archipelago: Forestry in Pre-Industrial Japan* (Berkeley: University of California Press, 1989).

<sup>39</sup> Richards, 134-143; Mark Elvin and Liu Tsui-jung, eds. *Sediments of Time: Environment and Society in Chinese History* (Cambridge: Cambridge University Press, 1998).

Similar themes helped shape Spanish forestry policies, including the size of its territory, the high value attached to naval power, the effectiveness of central and local communication, and the personality of a given monarch, among many other factors that will be explored below. While geographic realities, available technologies, and social structures all shape processes of territorialization, they are not prescriptive. Exploring the unique Spanish experience will enhance our understanding of state formation, state power, and resource management practices of the early modern period.

### **Methods, Sources, and Organization**

Previous studies on the history of early modern Spanish forests have tended to fall into three different categories. In the first category, scholars emphasize changes in forest cover, including causes and rates of deforestation and success or failure of reforestation efforts.<sup>40</sup> Such studies tend to utilize a long timeframe. In the second category, scholars maintain a local scale analysis, in both time and space.<sup>41</sup> These studies contribute detailed evidence about local disputes and management practices, but tend to overlook broader

---

<sup>40</sup> Baudilio Barreiro Mallón, "Masa arbórea y su producto en Asturias durante la Edad Moderna," en J. Cavero y otros, *El medio rural español: Cultura, paisaje y naturaleza* (Salamanca, 1992); Erich Bauer Manderscheid, *Los montes de España en la historia* (Madrid: Fundación Conde de Valle de Salazar, 2003); J.M. Garayo, "Deforestación del territorio: el hayedo de los montes de la Parzonería General de Encía (siglos XVIII-XX)," *Agricultura y Sociedad*, n.62 (1992); M.A. Abello de la Torre, *Historia y evolución de las repoblaciones forestales en España* (Madrid: Universidad Complutense, 1988); Carlos Aedo Pérez, *El Bosque en Cantabria* (Santander: Universidad de Cantabria, 1990); Carlos Tarazona Grasa, *La Guardería Forestal en España: Conservación de nuestros bosques a través de los tiempos* (Barcelona: Lunwerg, 2002); Miguel-Juan Pereda Hernández, "Conservación y repoblación de arbolado en Almansa a mediados del siglo XVI," en *Conflictos sociales y evolución económica en la Edad Moderna (Actas del I Congreso de Historia de Castilla-La Mancha)* 1 (Ciudad Real, 1985).

<sup>41</sup> A. Herrera García, "Labradores, ganadores, y aprovechamientos comunales: Algunos de su conflictividad en las tierras sevillanas durante el Antiguo Régimen," *Agricultura y Sociedad* n.17, (1980); V. González Muñoz, "Vigo y su comarca en los siglos XVI y XVII," *Vigo en su Historia* (Vigo, 1980); C.M. Manuel Valdes and A. Rojo y Alboreca, "Valsaín Forest in the XVIII Century: An Example of Forest Management in the Pre-industrial Era," *Investigación Agraria, Sistemas y recursos forestales*, fuera de serie n3, (1994); Álvaro Aragón Ruano, *El Bosque guipuzcoano en la Edad Moderna: Aprovechamiento, ordenamiento legal y conflictividad* (Donostia: Sociedad de Ciencias Aranzadi, 2001).

trends. In the third category, scholars connect forest history to periods that were particularly active for the navy. These have included the period from the Invincible Armada (1588) to the end of the reign of Felipe IV (1665) and the period from the issue of Spain's first national forestry code (1748) through an era of naval revival until the Napoleonic invasion (1808).<sup>42</sup>

As a result of such approaches, Spanish forest history tends to suffer, respectively, from (1) an overemphasis on strictly material change that overlooks the evolving social and political structures shaping forest territoriality; (2) an overemphasis on the local scale, missing the development of state-wide forestry policies; or (3) an overemphasis on the drama of human events that overlooks the long-term continuity of forest functionality. These shortcomings have helped to shape the organization of my dissertation.

In order to explore forest territoriality and offer a new perspective on Spanish forest history, a different kind of timeframe is required; one that is not overly focused on specific events, such as naval battles, nor on the history of ecosystems on an epochal scale. Instead, I focus on a two-hundred year period on a national scale, beginning with the formation of a new state forestry under Felipe II (r.1556-1598), and ending with the creation of Spain's first national forestry code in 1748, under Fernando VI (r.1746-1759). I provide the context for this crucial period by briefly discussing developments related to state forestry both before and after the period of my primary focus.

The material that follows is presented chronologically in four chapters. I have analyzed bureaucratic correspondence, forest legislation, forest inspection reports, court

---

<sup>42</sup> David Goodman, *Spanish Naval Power, 1589-1665: Reconstruction and Defeat* (Cambridge: Cambridge University Press, 1997); Luís Urteaga, *La tierra esquilmada: Las ideas sobre la conservación de la naturaleza en la cultura española del siglo XVIII* (Madrid: CSIC, 1987).

documents, and cartographic representations. I conducted my research primarily in the Biblioteca Nacional and the Museo Naval (the Archivo General de la Marina) in Madrid, the Archivo de la Real Chancillería in Valladolid, and the Archivo General de Simancas in the town of Simancas, about twelve kilometers from Valladolid. In preparing a dissertation that covers two hundred years, I became acquainted with a variety of secondary sources. I include suggested general background readings for each period in a footnote in each chapter.

In Chapter 2, “A New State Forestry for a New Global Age,” I argue that the crown redefined its relationship with forest resources in the middle of the sixteenth century, shifting from its traditional role of defending against municipal common law abuses to a position of increasingly centralized control over timber access. This chapter analyzes forests and society before the sixteenth century, including local level disputes and the role of the crown in this period. Then, I examine how the role of the crown began to change during the reign of Carlos I (r.1516-1556) as overseas commitments and population growth began to place a greater strain on timber supplies. I challenge the notion that Carlos was uninterested in long-term naval commitments. During the reign of Felipe II (r.1556-1598), forest legislation alone could not ensure that the crown could gain access to timber for shipbuilding. Felipe II took steps to enhance naval power for the long term, and appointed Cristóbal de Barros as Spain’s first superintendent of forests and plantations. Through its bureaucracy, as well as mapping projects and questionnaires, the Habsburg government gathered all the information it could on the forests of primary shipbuilding regions, such as the Basque country and Catalonia.

In Chapter 3, “Growth and Persistence of Habsburg State Forestry in the Seventeenth Century,” I analyze the operations of the Habsburg state forestry bureaucracy and its expansion from one superintendent covering the entire north coast, to one each in Galicia, Asturias and Cuatro Villas (Cantabria),<sup>43</sup> Vizcaya, and Guipúzcoa. Catalonia’s forest administration operated slightly differently, but the principality also came under closer observation of the royal bureaucracy in the early seventeenth century. Spanish naval activity reached a crescendo in the 1620’s and 1630’s, but forestry matters remained an important concern for the crown during the remainder of the century.

I study change and continuity in the crown’s forestry in Chapter 4, “Internal Expansion, Forest Reconnaissance, and Dynastic State Territoriality under the First Bourbon.” After Carlos II (r.1665-1700) died without an heir, Felipe V (r.1700-1746) of the Bourbon dynasty ascended to the throne and defended his place during the War of Spanish Succession (1701-1714). By the 1720’s, the Bourbon government began taking steps to reform naval administration, which had ramifications for Spain’s coastal forests. Under the Bourbons, state forestry expanded to new sites, aided by forest reconnaissance missions in the years 1737-1739.

In Chapter 5, “State Forestry Reforms during the Reign of Fernando VI, 1746-1759,” I analyze Spain’s first national forestry code from 1748. The ordinance was part of a series of reforms under the direction of the Marqués de la Ensenada between 1746 and 1754 that aimed to enhance state power. Naval forestry practices extended to the interior, so that by 1748, all of Spain came under the rules and regulations of state forestry. The influence of the previous two centuries on the principles of the 1748

---

<sup>43</sup> Cuatro Villas referred to the Cantabrian cities of Santander, Castro Urdiales, Laredo, and Santoña.

ordinance is clear. The ordinance helped lay the groundwork for naval expansion in the second half of the eighteenth century under Carlos III (r.1759-1788).

## Chapter 2 – A New State Forestry for the First Global Age

Isabel of Castile (r.1474-1504) and her husband, Fernando of Aragón (r.1479-1516) reasserted strong royal power after years of civil war in Spain. The monarchs sought to establish peace and stability, to weaken the nobility, and to begin extending Spanish power beyond the Iberian Peninsula. In addition to ending civil war and reestablishing a strong royal authority, the monarchs conquered the last Islamic outpost on the peninsula, they reinforced the supremacy of the Catholic Church in their realms, and they laid the foundations for a broader Spanish presence in Europe, Africa, and the New World. For all that was new during their remarkable reign, in recent decades scholars have emphasized continuities in their administration.<sup>1</sup> While the monarchs actively defended the conservation of forests in Spain, their general approach differed very little from their predecessors.

In 1496, Fernando and Isabel issued a pragmatic in Burgos on the “Conservation of forests and plantations for the common good of the people.”<sup>2</sup> This decree exemplifies key elements of the crown’s role in forest management for most of the medieval period. Like monarchs before them, Fernando and Isabel had the difficult task of balancing the interests of local municipalities, artisans, and herders who all sought to use the limited resources of the forest, as well as cultivators who extended arable land at the expense of woodlands. The pragmatic ordered the protection of large trees used by citizens for firewood, tools, and construction. People could cut off branches, but not to the extent that

---

<sup>1</sup> For the reign of the Catholic Monarchs, see John Edwards, *The Spain of the Catholic Monarchs, 1474-1520* (Oxford: Blackwell, 2000) or Felipe Fernández-Armesto, *Ferdinand and Isabella* (New York: Dorset Press, 1975).

<sup>2</sup> *Novissima recopilación de las leyes de España*, tomo III, libro VII, título XXIV, ley I. “Conservación de los montes y plantíos para el bien común de los pueblos.”

would prevent new growth. The document remarked on the particular value of oak trees, which produced acorns for foraging pigs, and the monarchs aimed to protect forests used by herders who sought shelter and forage for their animals in the winter. Anyone wishing to cut down such valuable and useful trees required special license. As the title of the document suggests, the general purpose was to protect the common interests of the people. The pragmatic states, “And if some of these cities, towns, and locales think that something else would be more agreeable, send us a report of it to our Council.”<sup>3</sup> The monarchs then went on to state that they aimed to understand conditions fully in order to be of service to the needs of the common good. “It is not our intention to impede” what was best for the forests.<sup>4</sup>

The *Reyes Católicos* (Catholic Monarchs), as Isabel and Fernando were styled, relied on their representatives in major towns, the *corregidores*, and local judges to ensure that such conservation occurred. In a reign concerned primarily with internal order and security, their chief aim in forest matters was to allow different social groups reliable access to valuable forest resources. People needed fuel, building supplies, food, and shelter, all of which existed, generally for free, in the forest. If the towns had the initiative to suggest better ways of meeting the needs of their citizens, the monarchs at least expressed their willingness to listen.

A century later, the traditional role of the crown in forest affairs had changed dramatically. A look at a *real cédula* (royal document) from 1597 is instructive in some

---

<sup>3</sup> “Y si a algunas de estas dichas ciudades, villas y lugares paraciere que otra cosa conviniere, envíen ante nos al nuestro Consejo la relación de ello.”

<sup>4</sup> “No es nuestra intención de impedir por esta nuestra carta la ejecución que se debe y pueda hacer de lo suso dicho.”

of the ways the crown had altered its policies.<sup>5</sup> First, the *cédula* was drafted by a new figure in the administration, a Superintendent of Forests and Plantations, named Hernando de la Riva Herrera. The king appointed the superintendents directly, and they worked for the crown's interests specifically. These bureaucrats were the first state officials in Spain responsible for forest conservation, and their job was to enforce forest legislation and to procure timber for the navy. Riva Herrera and other superintendents worked only in Spain's well-forested northern regions. Once there, the superintendents either replaced local municipal officials in overseeing forest stewardship practices, or closely observed their behavior. The *cédula* said nothing about the defense of the common good, nor did the king offer an audience with representatives of the town to discuss best practices. Mostly, the document discussed the need to punish those that destroyed trees without license. By the late sixteenth century, the forests of Spain were under exceptional pressure from the crown's need for shipbuilding timber, and rather than the *corregidores* or local judges being the authorities resolving forest conservation conflicts, the *cédula* stated that the ultimate authority lay with the Council of War in Madrid.

How did such a transformation in forest politics develop in the sixteenth century? How did the crown's approach to forest management proceed from a general concern for the public good to a matter of high concern for the Council of War? What led to the creation of the position of a Superintendent of Forests and Plantations? How did the new

---

<sup>5</sup> Guillermo Muñoz Goyanes, *Crónica sobre bosques y montes de la Península Hispánica* (Madrid: Fundación Conde del Valle de Salazar, 1983), 107. A *real cédula* was a royal dispatch that, from the reign of Juan II of Castile (r.1406-1454), monarchs issued to apply to public and private authorities regarding matters of justice and government. See Enrique Martínez Ruiz, dir., *Diccionario de historia moderna de España, vol. II: La administración* (Madrid: Ediciones Istmo, 2007), 83.

state forestry reflect the demands of a new global age in the sixteenth century? How did state forestry change relations between the crown, its people, and the forests of Spain?

The central argument of this chapter is that the crown redefined its relationship with forest resources in the middle of the sixteenth century, shifting from its traditional role of defending against municipal common law abuses to a position of increasingly centralized control over timber access. During the first half of the sixteenth century, the crown began treating forests as manageable sites of extraction for the shipbuilding industry to supply naval arsenals, which helped to ensure Spanish strength in transoceanic defense, colonialism, trade, and migration. The functionality of woodlands for the crown changed in the sixteenth century due to imperial commitments, leading to changes to long-standing practices in the ways the crown managed forests. Changes in forest management led to new understandings of the monarchy's geography, the extension of royal authority to more local levels, and the reshaping of crown and local relations. Shipbuilding had long been important to the coastal regions of Spain, but the demand for more and larger vessels, shaped by conditions both internal and external to the Iberian Peninsula, affected the crown's resource management strategies for its global empire in new ways. The changes in forestry brought about by the crown in this period, however, did not alter the kinds of environmental problems people faced throughout the Middle Ages. Rather, the scale of these problems changed, brought on by Spain's global commitments and the ability of the state to confront them in a more systematic and centralized way.

To understand the changes in state forestry during the sixteenth century, I will discuss the role of forests in the complex system of land use and land ownership that

operated under a variety of regulations at the local level since the medieval period. I will look at the crown's role in forest legislation through the reigns of the Catholic Monarchs, and then I will analyze how conditions in the sixteenth century forced the crown to reevaluate the resources of Spain and its empire, given the heightened importance of naval power in this era. I will end by exploring some of the major changes to state forestry in the sixteenth century, including the creation of the Superintendents of Forests and Plantations and the practice of forest inspections for crown interests.

Several reasons contributed to a change in the functionality of Spain's woodlands as understood by the crown. First, the population growth of the period led to more clearings of forests for arable land. A similar pressure on forest resources occurred in the thirteenth century, but the political and economic context then differed greatly from the volatility and scale of operations in the sixteenth century. Also, population decline in the fourteenth century meant a temporary respite from demographic pressures. Second, in the sixteenth century, wealth from the New World attracted other European powers to harass Spanish shipping, leading the state to devise new ways to defend its trans-oceanic empire. The only way to do this was to build more vessels to defend its coasts and Atlantic trade routes. The nature of long-distance oceanic voyages and the threats from pirates and rival navies meant Spain needed numerous large and heavily defended vessels. Third, war escalated in the Mediterranean during the century as the Ottoman Empire expanded its influence, requiring the need for nearly constant vigilance in the Mediterranean as well.<sup>6</sup> Finally, as Spain's imperial wealth became central to Spanish policy in Europe, and as

---

<sup>6</sup> For a good overview of the period, see John Lynch, *Spain 1516-1598: From Nation State to World Empire* (Oxford: Blackwell, 1991).

shipbuilding became central to the defense of imperial wealth, the crown sought more information about the geography of the monarchy.

Geographic information regarding natural resources would be used to carry out ever more effective methods of forest conservation, setting in motion a process of territorialization. Studying early modern state formation through the lens of territorialization reveals a process of legal reform and geographic intelligence-gathering meant to enhance state control over forest use.

Sixteenth-century Spain developed one of Europe's first trans-oceanic empires and the world's most extensive political power. Such an empire placed new strains on resources and posed new challenges to political structures. The ways the Spanish monarchy responded to such challenges revise accepted notions derived from scholarship about modern state and local relations, conservation strategies, and geographic knowledge. The early modern Spanish crown was much more limited than modern states in its ability to control behavior in forest communities, due to a strong legal tradition that protected local rights, technological challenges to timely and reliable communication, lack of effective techniques to monitor and enforce royal policy, and deficiencies in geographic knowledge of its own territory. However, it relied on local cooperation and service, applied long-term conservation strategies, reformed forest legislation, and carried out forest inspections and mapping projects to improve its geographic knowledge and to implement a distinctly early modern form of forest territoriality. Thus, the territorialization of forest resources occurred in a close and complementary relationship with the development of state power in early modern Spain.

## Forests and Society Before the Sixteenth Century

While long-term changes in climate have been important for shaping forest ecology in Iberia, human factors have been even more decisive over the last two millennia.<sup>7</sup> The Romans, the Visigoths, the Islamic states, the kingdoms of the Christian Reconquest, and the Habsburg and Bourbon dynasties of the early modern period exploited forest resources in Spain and caused different degrees of deforestation. These societies also devised ways to conserve forest resources, and one of the earliest examples of a reforestation policy in all of Europe came from the Monastery of Oña, north of Burgos, in 1276.<sup>8</sup> Long before this, however, people in the Mediterranean world devised ways of obtaining forest resources without necessarily causing deforestation by cutting branches and allowing for new growth, sometimes called “second growth.” In the seventh century, Isidore of Seville wrote, “‘Second growth’ (*recidivum*) with regard to trees consists of what sprouts again after other parts have been cut.”<sup>9</sup> Such methods allowed people to extract resources from the forests without causing serious damage, usually performed and managed in a communitarian system.

Forests of Spain had been important for shipbuilding and commerce throughout these periods. In the early Middle Ages, we have evidence that Muslims in Andalusia – al-Andalus – transported timber down the Segura and Guadalquivir Rivers to be used in

---

<sup>7</sup> Historian Roland Bechmann says that thirty million hectares of forest under Charlemagne had been reduced to thirteen million at the start of the fourteenth century. See Roland Bechmann, *Trees and Man: The Forest in the Middle Ages*, tr. Katharyn Dunham (New York: Paragon House, 1990).

<sup>8</sup> María del Carmen Carlé, “El bosque en la Edad Media (Asturias-Leon-Castilla),” *Cuadernos de historia de España* (Buenos Aires) 59-60 (1976), 372.

<sup>9</sup> Stephen A. Barney, W.J. Lewis, J.A. Beach, Oliver Berghoff, Muriel Hill, *The Etymologies of Isidore of Seville* (Cambridge: Cambridge University Press, 2006), 341. “Some say that *recidivum* is from ‘falling’ (*cadere*), because they make new growth after being felled. Others have said that it is from ‘cutting back’ (*recidere*) and sprouting again. Therefore, something may be *recidivus* (i.e. ‘restored’) where there has been death or falling.”

ship construction.<sup>10</sup> Other regions of the Islamic Mediterranean lacked the kinds of forests found in al-Andalus, which served as a strategic timber resource base during the period of Islamic dominance. In the east, the geographer Muhammad al-Idrisi wrote that ships were built using timber from the hills around Tortosa near the mouth of the Ebro River and in the mountains of Cuenca at the source of the Júcar River, which would carry the timber down to the Mediterranean Sea, south of Valencia.<sup>11</sup>

After the resurgence of the Christian Reconquest in the thirteenth century, timber and ship exports from Spain decreased. North Africa and the eastern Mediterranean relied on Andalusian timber, but northern Europe did not need to look as far for forest resources. As the Reconquest slowly extended Christian power across the Iberian Peninsula, there were repercussions for the wider region. One historian argues that the Christians' control of Iberian timber resources helped tip the balance of naval power in the medieval Mediterranean world.<sup>12</sup>

In the thirteenth century, other kinds of commercial activity on the Cantabrian coast facilitated the development of a naval force capable of assisting Fernando III (r.1217-1252) during the Reconquest of Seville and other cities in southern Spain.<sup>13</sup> Alfonso X (r.1252-1284), known as “el Sabio” (the Wise), founded an arsenal in Seville, understanding its strategic location as a protected port for trade and defense in both the Atlantic and the Mediterranean. Initially, Alfonso placed under the jurisdiction of the arsenal “all the forests of this region [around Seville] that grow trees reserved for

---

<sup>10</sup> Emilio de la Cruz Aguilar, “La provincia marítima de Segura de la Sierra,” *Boletín del Instituto de Estudios Giennenses* 107 (1981), 52.

<sup>11</sup> Olivia Remie Constable, *Trade and Traders in Muslim Spain: The Commercial Realignment of the Iberian Peninsula, 900-1500* (Cambridge: Cambridge University Press, 1994), 196-7.

<sup>12</sup> Constable, 197.

<sup>13</sup> Carlé, 323-4.

shipbuilding material.”<sup>14</sup> However, the forests near the arsenal were not suitable for shipbuilding. Better forests grew farther away to the north or near the source of the Guadalquivir River, and it became common for the shipbuilders of Seville to import timber from Galicia, in northwestern Spain. By the late fifteenth century, though, shipbuilders in Seville were exploiting the forests of Constantina, in the Sierra Morena.<sup>15</sup>

Both Islamic and Christian states imposed bans on the sale of goods that their enemies could potentially use against them in war, including timber. The philosopher and statesman, Ibn Rushd ruled in the early twelfth century that Muslim traders leaving Islamic lands should be searched to ensure they were not smuggling arms or other prohibited items. Beginning with the Third Lateran Council in 1179, papal bans had existed on commerce in war materials. Moreover, Jews leaving from Christian ports caught trading in timber in Islamic states would incur major fines, to which several cases of Jews leaving Barcelona for Egypt in the fourteenth century attest.<sup>16</sup> Within Spain itself, the coexistence of multiple religions led to conflicts over access to forests. The towns of Úbeda and Cazorla, for example, sought protection against Muslim attackers trying to stop the construction of a road meant to facilitate timber extraction from a disputed forest.<sup>17</sup> In the Cortes of Valladolid in 1351, King Pedro I (r.1350-1369) outlawed the export of wood, which he felt would only be used to build ships for the monarchy’s enemies.<sup>18</sup> Perhaps more crucially, the king added that foreign commerce in

---

<sup>14</sup> Carlé, 324.

<sup>15</sup> Archivo General de Simancas (Hereafter, AGS), SELLO, Catálogo XIII v.II (1478 y 1480) 265, February 6, 1478, Cantillana, (1) Folio (Hereafter, fol.), 16 and 2357, January 26, 1480, Toledo, fol. 118.

<sup>16</sup> Constable, 254.

<sup>17</sup> AGS, SELLO, Catálogo XIII v.III (1480-84), 72, September 13, 1480, Medina del Campo, fol. 242.

<sup>18</sup> Cortes (Corts in Catalonia) were local governing bodies, or parliaments, in Castile, Aragón, Catalonia, and Valencia. Primarily, their function was to consent to the levying of taxes, but they also were able to “present grievances to the king, seek confirmation of their privileges, and to discuss matters relating to the

timber contributed to deforestation of the kingdom's hills.<sup>19</sup> By this time, the crown took forest destruction very seriously and set penalties, even including the death penalty in some cases, for those who destroyed trees belonging to town councils.<sup>20</sup> And in a famous and often-quoted decree, Alfonso X ordered anybody who started a destructive and unlawful fire to be thrown into the flames.<sup>21</sup>

Such severe penalties indicate that deforestation was a serious problem even in the medieval period. Roland Bechmann wrote that Western Europeans discovered forests' limits for the first time on a large scale during the Middle Ages, when there were not enough forests to meet the needs of everyone. He argues that Medieval Europeans cleared forests to such an extent that people responded with the first serious legislation for conservation and forest management.<sup>22</sup> In Spain, a flurry of legislation on forestry appeared in the thirteenth century, but the timing of local forest legislation varied by region.<sup>23</sup> The modern historian María del Carmen Carlé argues that medieval authorities had a clear awareness of the problem of the progressive destruction of forests as a result of abuses and irrational use, primarily from the thirteenth century, and generated efforts to find solutions to deforestation.<sup>24</sup>

---

dynastic succession, war and diplomacy, or taxation and legislation.” See Simon Barton, *A History of Spain* (New York: Palgrave Macmillan, 2004), 79. Also, see Martínez Ruiz, 127-129.

<sup>19</sup> Constable, 237.

<sup>20</sup> Carla Rahn Phillips and William D. Phillips, Jr., *Spain's Golden Fleece: Wool Production and the Wool Trade from the Middle Ages to the Nineteenth Century* (Baltimore: Johns Hopkins University Press, 1997), 337, footnote 29.

<sup>21</sup> Carlos Tarazona Grasa, *La Guardería Forestal en España: Conservación de nuestros bosques a través de los tiempos* (Barcelona: Lunweg, 2002).

<sup>22</sup> Bechmann, x.

<sup>23</sup> See the article by Carlé. Also, Julián Clemente Ramos, coord., *El medio natural en la España medieval: Actas del I congreso sobre ecohistoria e historia medieval*, [Celebrado en Cáceres entre el 29 noviembre y el 1 diciembre, 2000] (Cáceres: Universidad de Extremadura, Servicio de Publicaciones, 2001).

<sup>24</sup> Carlé, 374.

Deforestation was not the result solely of shipbuilding and the timber trade. In Western Europe, between the eleventh and thirteenth centuries, population growth led to the greatest expansion of agriculture in the Middle Ages.<sup>25</sup> After 950, agricultural clearings started on a large scale for the first time since the end of the Roman Empire and clearings tended to be irregular and carried out by the peasantry. By the twelfth century, well-organized lords carried out larger clearing projects, sometimes resulting in the clearing of protected hunting grounds for more profitable agricultural fields. Wars of the Reconquest, particular to the history of Spain, added more forest destruction.

While agriculture expanded, people still depended on forest resources for shelter, tools, food, water, and fuel. The various interests involved meant that an incredibly complicated set of relationships developed among people over the use of and access to forest resources. Trees were cut to build homes, churches, mills, and other public structures. People extracted such of its resources as medicinal herbs, fruits, nuts, cork, meat, and fish. Beekeepers maintained their bees in the forest. People made soap from wood ashes, and made cordage, mats and paper from esparto grass. People extracted timber for industrial needs as well. Tanners used bark to tan leather. Iron founders, pottery makers, brick makers, glass blowers, and other artisans needed charcoal for heating fuel. Acorns from oak trees fed pigs, while leaves and branches from beech and elm trees fed sheep and cattle. Herders used the forest to shelter their animals in the winter or during times of harsh weather.<sup>26</sup>

---

<sup>25</sup> Bechmann, 108.

<sup>26</sup> See Bechmann, Carlé, Phillips and Phillips; also, David Vassberg, *Land and Society in Golden Age Castile* (Cambridge: Cambridge University Press, 1984).

Almost any of these activities could cause irreparable damage to forests if not done in moderation. Domestic animals had great potential to destroy forests if left to roam unsupervised. Animals were allowed to feed in forests that were usually designated common lands, but the risk of overgrazing or packing the soil could prevent new growth and alter the hydrology. High domestic consumption of wood posed another risk, especially if cuttings did not allow for healthy second growth.

Due to the diverse resources of forests, issues of usage rights and access became important for all levels of society. Around the time of Alfonso X's reign, people sought ways to define a balance between demographic growth and the use of woodlands, meadows, and cultivated fields with the long term in mind. The inevitable complications that arose from customary law and opposing interests led to many laws being written that covered topics such as when and how to allow animals grazing rights, the regulation of timber cutting, and even rights to beehives that formed on certain trees. Most conflicts over forest resources occurred among those using them at the local level. At times, however, disputes from the local courts regarding local ordinances received royal attention.

### *Local Level Disputes*

Municipalities appointed guards to protect the forest commons. In keeping vigilance over the forests, or *montes*, the guards normally worked in pairs and on horseback. They swore to uphold the local ordinances and defend against illegal cutting and burning of trees. Some oversaw the annual acorn harvests to ensure the towns' pigs got equal shares and did no permanent damage to the oak trees by hastening the fall of

the acorns.<sup>27</sup> In Arjona, east of Córdoba in Andalusia, guards inspected all forested properties once a week, and they reported damages promptly, or else they risked being fined themselves for not doing their duty. Guards required many animals to wear bells so they could hear when a herd unlawfully entered certain forests. Being a guard could be quite demanding and dangerous; larger forests required extensive traveling, and any forest could be a hideout for outlaws, thieves, or murderers. However, it was an important job, and it required the appointment of respectable and trustworthy people of the community.<sup>28</sup>

Royal forests were lucrative for the government, which received receipts for sales of timber, coppice, charcoal, ashes, and fallen trees, as well as fines and dues paid by users.<sup>29</sup> Some people from rural areas could make money by selling firewood in cities.<sup>30</sup> However, the chief beneficiaries of the forest communitarian system appeared to be the landless poor and the small landowners.<sup>31</sup> The range of forest resources for people, especially the poorer classes, could provide just enough for a family to eke out a living. It was a vital part of the fabric of society and was a system that even the upper classes within municipal governments defended.<sup>32</sup> The system balanced the interests of stock raisers and cultivators, and provided a base for the social and economic structure of rural life. Not surprisingly, people vigorously defended their rights to utilize the resources of the forest. The right of communities to extract timber and other resources for firewood

---

<sup>27</sup> Vassberg, 37.

<sup>28</sup> AGS, SELLO, Catálogo XIII v.I (1454-1477), 1000, March 25, 1476, Zamora, fol. 114.

<sup>29</sup> Bechmann, 201, gives a statistic that the revenue from Saint Louis' (r.1226-1270) forests were worth a quarter of the budget.

<sup>30</sup> Carlé, 346.

<sup>31</sup> Vassberg, 33.

<sup>32</sup> *Ibid.*, 33 and 83.

and individual needs was protected by regional laws called *fueros*.<sup>33</sup> The *fueros* of Logroño (1095) and Hínestrosa (1287), typical of local *fueros* elsewhere, stated, “wherever they find water to irrigate orchards or vineyards, or for their mills, or for their gardens, or for other things they might need, they may take them; and wherever they find firewood, and forests, and trees to burn or for building houses, or for all that they might need, they may take them without hindrance.”<sup>34</sup>

One example of how the interests of herders and cultivators worked together was through the practice known as the *derrota de mieses*. This practice allowed animals to enter agricultural fields at certain times of year after the harvest to graze on stubble. The animals were able to eat without having to travel too far, and the fields would benefit from their manure.<sup>35</sup> Another rule, typical of many localities and meant to benefit everyone in the long term, was the protection of new forests or new growth after a fire. An ordinance from Córdoba prevented livestock from entering such forests for three years.<sup>36</sup> Some municipal ordinances specified different fines for different infractions, depending on which animals were involved, the size of the herd, and the time in the forest’s growing season. According to such ordinances from the city of Soria, the city would impose the highest fine, in theory, if more than 150 head of livestock entered a forest in its vulnerable early growing period at night.<sup>37</sup>

---

<sup>33</sup> Carlé, 345.

<sup>34</sup> Vassberg, 10-11.

<sup>35</sup> *Ibid.*, 13-18.

<sup>36</sup> AGS, SELLO, Catálogo XII: 4472, December 20, 1494, Madrid, fol. 59.

<sup>37</sup> Vassberg, 68.

Towns and their surroundings typically had a hybrid property structure, allowing the coexistence of private and public property.<sup>38</sup> Crown lands, seigniorial property, private property, municipal commons, and intermunicipal property could exist in a single place. The *derrota de mieses* blurred the division between privately owned fields and public grazing areas, demonstrating that several different parties had access to the same piece of land. The church owned extensive forested land in Spain, and several monasteries had their own forest ordinances, which they defended as carefully as the municipalities defended theirs. In one example from the sixteenth century, the abbot and monks from the monastery of Nuestra Señora de la Espina, northwest of Valladolid, took various citizens of the towns of Villabrágima and Tordehumos to court for entering the monastery's forests, destroying several trees, and even resisting with arms.<sup>39</sup>

#### *The Crown's Involvement in Forest Management*

All the lands in the realm that the king did not allocate through royal grants remained theoretically the property of the crown. According to Germanic law, all of the property acquired from the enemy via conquest was at the mercy of the monarch, who could dispose of it at his will, a law utilized by the kings of Spain during the Reconquest to allocate settlements in newly conquered lands. This idea also found its way into the

---

<sup>38</sup> Ibid., 83.

<sup>39</sup> AGS, Consejo Real de Castilla: 367, 7, 1568, 56 fols., A-147-21, "Abad y monjes del monasterio de Nuestra Señora de la Espina, contra varios vecinos de Villabrágima, Tordehumos y otros lugares comarcanos, por haber entrado en sus montes a talar, y resistirse con armas;" 1569, 31 fols., A-147-21, "Información hecha a pedimiento del monasterio de la Espina, sobre las ordenanzas que han de hacer para la guarda y conservación de los montes."

thirteenth-century law code known as the *Siete Partidas*.<sup>40</sup> Roman law had stated that public lands, including most forests, belonged ultimately to the state, an idea that kings defended through the early modern era.<sup>41</sup> A resurgence of Roman law in the thirteenth century gave new strength to royal power, leading to broadly proclaimed laws for the defense of the king's resource in all his lands. Alfonso X ordered that people could not cut down, burn, uproot, or damage trees, vines, or other useful plants in any way.<sup>42</sup>

Sometimes the crown would act as intermediary between parties disputing forest use or access. In the Cortes of Toledo in 1480, the municipalities requested crown assistance to combat the usurpation of common lands by nobles and other outsiders. The Law of Toledo ordered *corregidores* and other royal justices to hear complaints from the municipalities about usurped property.<sup>43</sup> The law allowed municipalities to recover properties lost to powerful local interests through the help of the crown, which began establishing royal magistrates in the municipalities. In 1492, the Catholic Monarchs returned unlawfully privatized land back to the commons.<sup>44</sup> However, delays in many cases meant that the law did not always work effectively. Sometimes parties reached temporary solutions while settling disputes at law. In September of 1499, the city of Toro was in the midst of a dispute with the *regidor* (town councilor) Diego de Ulloa over access to the forest for cutting firewood. Ulloa had prohibited any felling in the forest of San Miguel de Gros, much to the dismay of the people of Toro. A royal council declared that the people of the city could cut thirty cartloads of firewood before Christmas, and if

---

<sup>40</sup> Vassberg, 121. The *Siete Partidas* were a compilation of statutory laws, intended to be a uniform set of rules for the Kingdom of Castile, and were completed in 1265 during the reign of Alfonso X. They were very influential, and stand as one of Spain's most significant achievements in the history of law.

<sup>41</sup> Carlé, 369.

<sup>42</sup> *Ibid.*, 369.

<sup>43</sup> Vassberg, 77.

<sup>44</sup> *Ibid.*, 67.

the case had not been resolved by then, they could take one load of firewood each week until the case settled.<sup>45</sup>

Even the disputes involving the Mesta (a powerful guild of sheep owners) and farmers, municipalities or other herders came down to the basic issue of access to scarce resources. The crown had to balance the multiple interests to maintain order, and it did not always favor the Mesta, despite the revenues generated by herding interests. When space allowed and when the wool trade remained strong, the crown tended to side with the interests of the sheep owners over cultivators. The population growth of the sixteenth century put great strains on available land and the crown, the Cortes, and law courts began to fear that grain scarcity and high prices could lead to social unrest. As a result, the state began favoring farming over herding interests.<sup>46</sup> As in earlier times, as agriculture expanded in the sixteenth century, forests retreated.

Some municipal councils challenged certain ordinances proclaimed by the crown. In 1503, the council of Seville petitioned against a new ordinance from the Catholic Kings prohibiting the entrance of livestock into the forests of Carmona for two years after a fire clearing.<sup>47</sup> Such laws could vary from place to place, no matter how close they were to each other. We know that Córdoba had a law against entering new forests for three years, but in Seville, two years must have seemed too long.

A strong legal tradition developed over centuries to ensure that nearly everyone could benefit from the forests of Spain. The Catholic Kings' pragmatic of 1496, discussed at the beginning of the chapter, reflects this. While the system was imperfect,

---

<sup>45</sup> AGS, SELLO, Catálogo XIII v.XVI (1499) 1843, September 14, 1499, Valladolid, fol. 403; and 2008, September 25, 1499, fol. 47.

<sup>46</sup> Phillips and Phillips, 43 and 61.

<sup>47</sup> AGS, Consejo Real de Castilla, 21, 14 (1,503 fols., A.15-6).

often politicized, and not entirely just, the primary interest of the crown for centuries remained the common good of forest use at the local level. The crown, therefore, lacked strong motivation to remove the diverse local ordinances and regulations that governed forest use and access. The most heavily forested regions of Spain, including the Basque region, Cantabria, Asturias, Galicia, Navarre, and Catalonia also had some of the strongest *fueros* of anywhere in Spain. This long history of forest regulation in the interests of local communities would meet new challenges in the sixteenth century as Spain entered a period of global commitments, requiring the crown to reassess the value and functionality of its forests.

### **Forests and Naval Power under Carlos I**

As stated earlier, the Catholic Kings sought to expand Spanish power in Europe and abroad. Fernando actively sought marriage alliances with European royalty, Spanish armies extended their Reconquest activities across the Mediterranean, and Isabel sponsored the voyages of Christopher Columbus. The Habsburg succession to the Spanish crown was not straightforward, but through largely fortuitous events and untimely deaths, by 1516 Fernando and Isabel's grandson Carlos I (r.1516-1556) inherited Castile, its American possessions, Aragón, the Low Countries, and Habsburg lands in Central Europe. As a result, Carlos had to face the collective European crises of religious divisions, war with Islamic powers, and challenges by his European rivals in the Americas. Each crisis would intensify during his reign, posing great strains on the finances and military capabilities of his realms.

Since Carlos I did not create a permanent navy, historians have overlooked the evolution of his approach to forest management for shipbuilding.<sup>48</sup> During his reign, however, naval power became crucial for Spain's foreign policy. It should not be surprising, therefore, that Carlos established important precedents regarding the need for closer management of forests for naval interests. He sought the help of local experts in forest matters, and he made the first royal legislation in Spanish history that aimed to preserve forests for shipbuilding. In comparison to the subsequent reign of his son, Felipe II, such developments might seem small, but they were significant breaks from the crown's traditional approach to forests.

Carlos I proclaimed his first important forest legislation in May of 1518 in front of an Aragonese Cortes suspicious of their new foreign-born king. Earlier in the year in Valladolid, the Castilian Cortes forced Carlos to promise to respect the laws of Castile, remove foreigners from his service, and learn Castilian.<sup>49</sup> Carlos faced even more challenges in Aragón, and the Cortes would not recognize him as their king until the next January. During his visit in 1518, however, Carlos issued the pragmatic called "Formation of new forest plantations and ordinances to conserve old and new forests," in his and his mother Juana's name.<sup>50</sup>

---

<sup>48</sup> From Lynch, *Spain 1516-1598*, "The resources of Charles V had been diverted to his interests in central Europe and elsewhere: in the Mediterranean his policy had been bankrupt of ideas; neglecting permanent naval power, he had used improvised forces in occasional and largely fruitless expeditions against the bases of Islam in North Africa. Lacking the continuity which naval power demands, Felipe II had to begin almost from scratch. He thus started at a disadvantage, and the initiative remained for some years in the hands of the enemy," 323.

<sup>49</sup> *Ibid.*, 51.

<sup>50</sup> *Novissima recopilación de las leyes de España*, tomo III, libro VII, título XXIV, ley II. "Formación de nuevos plantíos de montes y arboledas, y de ordenanzas para conservar los viejos y nuevos." Juana was still alive, and ruled jointly with her son. Due to her mental instability, however, she was kept away from court in Tordesillas.

The document indicates that Carlos listened to the assessments of the *procuradores*, who worked as royal representatives in the parliaments of the various peninsular kingdoms and reported to the crown about petitions sent by the towns.<sup>51</sup> The pragmatic begins, "...we are informed by the *procuradores* of the kingdom...that in the cities, towns, and places of our kingdoms and lordships forests are damaged and destroyed without new plantings, and that there is great disorder as forests disappear. As a result, there is no shelter for livestock...and a great shortage of firewood."<sup>52</sup>

The pragmatic required that justices accompany knowledgeable people familiar with the area to help choose places most in need of replanting, mindful of the types of species that would be best suited to the ecology.<sup>53</sup> The king sought the direct collaboration of local inhabitants in replanting trees, and he called for the permanent observation of conditions by the courts and *regidores*. The ordinance confirmed the necessity of new plantations, and it continued in the tradition of equal concern for all segments of the population. Repeated confirmation of this legislation, four times in Carlos's reign alone,<sup>54</sup> indicates that deforestation continued, due perhaps to ineffective oversight.

The importance of naval power for Carlos I became apparent early on in his reign. Like other monarchs of the day, he assembled naval forces as he needed them. Usually, the emperor made contracts with private ship owners and combined forces with allies. Carlos's galley fleet included four permanent squadrons from Spain, Naples, Sicily, and

---

<sup>51</sup> Martínez Ruiz, 303-4.

<sup>52</sup> "Porque somos informados por los Procuradores del Reino, en estas Cortes que mandamos celebrar este presente año, que en las ciudades, villas y lugares de nuestros Reinos y Señoríos se talan y destruyen en los montes, y que no se plantan de nuevo otros, y que hay mucho desórden en los disipar; de que resulta, que no hay abrigo para los ganados en tiempo de fortuna, y grande falta de leña."

<sup>53</sup> The pragmatic used the phrase "según la calidad de la tierra," or "according to the quality of the land."

<sup>54</sup> In 1523, 1525, 1534, and 1543.

Genoa. Together, the fleets had about sixty vessels with more than half belonging to private owners and Italian rulers. The squadrons were not administered directly by the crown, but through a series of contracts with the owners or the captains general of individual squadrons.<sup>55</sup> The need to contract out all types of provisioning was due at least in part to the inability of Carlos's bureaucracy to keep pace with the demands of empire.<sup>56</sup>

The Atlantic at this time was on the margins of European warfare, but the merchant fleets operating on the American trade routes soon attracted pirates. John Lynch wrote, "In the interests of security against pirates and privateers larger and larger ships were being used, and they were obliged to sail in convoys of at least ten vessels escorted by powerful warships."<sup>57</sup> In this way, the convoy system of the Indies trade developed, relying on heavy defenses and large vessels. Most of the ships on the Indies run were built in the Basque region and in Cantabria, and memoranda on coastal defense from the 1560's indicate problems of timber shortages there.<sup>58</sup> Shipbuilding along the Mediterranean coast of Spain had suffered from depressed commerce in Catalonia and deforestation, forcing Spanish shipbuilders to purchase timber in Tuscany and Naples and masts from the Baltic.<sup>59</sup> The growing importance of the Basque region for Spanish shipping and the decline in timber supplies there, however, drew the attention of the king by the 1540s.

---

<sup>55</sup> I.A.A. Thompson, *War and Government in Habsburg Spain, 1560-1620* (London: Athlone Press, 1976), 163-5.

<sup>56</sup> Carla Rahn Phillips, *Six Galleons for the King of Spain: Imperial Defense in the Early Seventeenth Century* (Baltimore: Johns Hopkins University Press, 1986), 93.

<sup>57</sup> Lynch, *Spain 1516-1598*, 242.

<sup>58</sup> Phillips, *Six Galleons*, 80. For shipbuilding in Cantabria see José Luis Casado Soto, *Barcos y astilleros: La construcción naval en Cantabria* (Santander: Puerto de Santander, 1993).

<sup>59</sup> Fernand Braudel. *The Mediterranean and the Mediterranean World in the Age of Felipe II*, trans. Sian Reynolds, 2 vols. (New York: Harper Colophon Books, 1976), 141-3.

In Valladolid in 1547, Carlos issued a pragmatic titled “Forest Plantations in the Province of Guipúzcoa and the *Señorío* of Vizcaya.”<sup>60</sup> It states,

“Due to the great number of *naos* (vessels) built in the Province of Guipúzcoa and the *Señorío* de Vizcaya that serve us, and due to massive cuttings that destroy the forests, a *relación* was made for us regarding a remedy. No one in the said provinces is allowed to cut down a tree without planting two, and those that have cut down a tree of ten years [or more] is required to plant on all the land around where they have cut. We order... the *Corregidores* of Guipúzcoa and Vizcaya to take special care of the remedy and report to the *Consejo* of any damages that occur.”

The pragmatic placed new regulations on the people of Guipúzcoa and Vizcaya to increase the amount of trees in the area for shipbuilding. The concern for cutting older trees was especially important for naval interests, since shipbuilders required properly aged trees. Administratively, *corregidores* applied this law and reported directly to a royal council, drawing a closer connection between state and local power. The importance of shipbuilding in the Basque region, therefore, attracted special attention and special remedies from the crown to curb deforestation. This is the first case of royal forest

---

<sup>60</sup> *Novísima recopilación de las leyes de España* (Madrid, 1804-1829), tomo III, libro VII, título XXIV, ley VIII. (Both Guipúzcoa and Vizcaya are part of the Basque region.) “Porque en la Provincia de Guipúzcoa y Señorío de Vizcaya se hace mucho número de naos, de que Nos somos servidos, y por la mucha corta de los montes hay falta, nos fué hecha relación, que para el remedio convernía mandar, que ninguno pudiese en las dichas Provincias cortar árbol, sin que plantase dos. Y que los que han cortado madera de diez años a esta parte, tornasen a plantar toda la tierra en que han cortado. Mandamos a los del nuestro Consejo provean, como los Corregidores de Guipúzcoa y Vizcaya tengan especial cuidado del remedio y provisión de lo suso dicho, y que los tales Corregidores envíen la relación al Consejo de lo que en ello proveyeren.”

legislation specifically meant to help shipbuilding.<sup>61</sup> Since Carlos frequently leased commercial vessels for naval service, healthy commerce in the Basque region meant available resources for naval defense.<sup>62</sup> By the late 1540s, the crown could count on annual shipments of silver from New World mines, which became essential to finance Carlos's wars in Europe, and they helped make naval expansion possible.

Very shortly it had become clear to Carlos that the 1547 pragmatic was not effective. From Valladolid in 1548, he issued a new pragmatic. In it, he said the *corregidores* had been careless and negligent in their execution of the earlier pragmatic, which aimed to plant new forests and conserve old ones. He charged the judges in residence to inspect the actions of the *corregidores* and, if their negligence continued, to send a special person to help with the execution of the order.<sup>63</sup> It is not entirely clear who this person would be, but it is possible that this is the first indication of a royal official charged specifically with conserving forests – an early version of the forest superintendent used in Felipe II's reign.

Clearly, naval power had become essential to Carlos's policies and these acts of forest legislation indicate a growing appreciation for the well-being of forests for shipbuilding during Carlos's reign. We see signs that the *corregidores* continued to disappoint, leading Carlos to issue a warning of a greater royal presence in the northern forests. However, the traditional communitarian system for the most part remained

---

<sup>61</sup> David Goodman argued Felipe II was the first monarch to make legislation to conserve forests for shipbuilding. See David Goodman, *Spanish Naval Power, 1589-1665: Reconstruction and Defeat*. (Cambridge: Cambridge University Press, 1997), 70.

<sup>62</sup> Lynch, *Spain 1516-1598*, 170. The Catholic Monarchs prohibited shipment of Spanish merchandise in non-Spanish ships when native vessels were available and introduced subsidies for the construction of larger vessels. Carlos also recognized the contribution of the Basque region in supplying the ships that defended the Indies route.

<sup>63</sup> *Novísima recopilación de las leyes de España*, tomo III, libro VII, título XXIV, ley VI.

unchanged. Pressure on the old system would continue after Carlos's reign, with more and more emphasis on planting new trees and a greater involvement of state officials at the local level. Strictly legislative approaches were proving ineffective, and the crown began to look for new ways to manage its natural resources.

### **Forest Territoriality and the Formation of an Early Modern Geographic Information System under Felipe II**

The international context remained very much the same, but even more complicated for Felipe II, who initially retained most of his father's policies. Towards the end of Carlos's reign and during the first several decades of Felipe II's reign (r.1556-1598), the crown initiated new projects and methods to gather historical-geographical information about its realms. The collection of geographic information derived from the crown's need for more control over natural resources during this crucial period. Information gathered for the specific purpose of improving forest management gave the crown what I will call "actionable intelligence." From the geographic information it collected, it could territorialize its forests more effectively.

King Felipe II combined multiple approaches to gather information about his territory. First, he authorized a series of questionnaires regarding the people and resources of his realms. Second, he commissioned multiple mapping projects and enhanced the use of maps for war and administration. Third, he expanded the role of his bureaucracy by requesting reports on forest conditions and regional forest ordinances. Rarely do historians consider these phenomena together, but through the lens of resource control strategies, we can see that they all contributed to the crown's understanding of its

geography. There is no reason to doubt that the king thought each of these approaches would provide useful information about the varied resources of his realms, not just forests, and could potentially contribute to better government.

### *The Relaciones*

As early as 1555, a chronicler (*cronista*) under Carlos I named Juan Páez de Castro proposed a plan to collect historical-geographical data from Spain and its overseas possessions.<sup>64</sup> The investigation would provide information on the various languages, people, forests, rivers, monuments, churches, agriculture, and customs of Carlos's realms. While Páez did not see the completion of the project in his lifetime, his ideas and questions served as the basis for multiple sets of questionnaires that were eventually sent around Spain and the New World.

The man that ultimately sent out the questionnaires was Juan de Ovando, who would rise to be president of the Councils of the Indies and Finance.<sup>65</sup> Between 1567 and 1571, Ovando carried out a *visita* of the Council of the Indies, an investigation of the council's operations, which led to important reforms. His work for the *visita* led him to seek all kinds of information from the New World that would enlighten the council on the region they administered but typically knew little about from first hand experience. Between 1569 and 1575, Ovando sent out questionnaires of varying lengths to jurisdictions in the New World. In June of 1573, Felipe II issued a *real cédula* ordering a

---

<sup>64</sup> Erich Bauer Manderscheid, *Los montes de España en la historia* (Madrid, Fundación Conde de Valle de Salazar, 2003), 113.

<sup>65</sup> On Ovando's career, see Stafford Poole, *Juan de Ovando: Governing the Spanish Empire in the Reign of Felipe II* (Norman, OK: University of Oklahoma Press, 2004).

compilation of this information into several books.<sup>66</sup> Ovando created a special post to help with the project, the *cosmógrafo-cronista*, to which he appointed his secretary and assistant in the *visita*, Juan López de Velasco. The work of López would result in an extensive collection of information on the geography and people of the New World.<sup>67</sup>

After becoming president of the Council of Finance, Ovando initiated similar surveys for Spain, resulting in the *Relaciones geográficas de España*. For this massive inquiry, Ovando sent out questionnaires of fifty-seven articles to hundreds of villages, towns, and cities in 1575, the year of his death. Another set of forty-five articles was sent out in 1578.<sup>68</sup> Today, we have several volumes of responses preserved from the regions of Madrid, Toledo, Cuenca, Guadalajara, Cáceres, Ciudad Real, Jaén, Albacete, Ávila, Alicante, and Murcia. Several questions related to forests in these areas, including one that asked people “if the land is abundant or lacking in firewood, from where do they get their supply, and if it is mountainous, what forests and groves, and what animals, game, and wildlife grow and live there?” Another asked “if there is abundant water or not, and springs or lakes of note that are located in the town, and if there are no rivers or springs, from where do they drink and to where do they go to mill?” One inquired about “the pastures and meadows of note in the limits of the town with the forests, hunting parks, and fishing sites that they have and whose they are and what they are worth.” Finally, one asked about “the sort of houses and buildings that they use in the town, and from what

---

<sup>66</sup> Ibid., 141.

<sup>67</sup> For example, he commissioned the famous scientific voyage of Francisco Hernández in 1570.

<sup>68</sup> See Geoffrey Parker, “Maps and Ministers: The Spanish Habsburgs,” in David Buisseret (ed.) *Monarchs, Ministers and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*. (Chicago: University of Chicago Press, 1992), 124-152 and Geoffrey Parker, *The Grand Strategy of Felipe II* (New Haven: Yale University Press, 1998), 61-65.

materials are the buildings made, and if those materials are found in the land nearby or brought in from another part.”<sup>69</sup>

The responses to these questions provide us today with priceless information on sixteenth-century society, economy, material life, geography, and local history from about six hundred communities. In many responses, people took the liberty of saying that they knew forests once existed in many areas that no longer had any trees.<sup>70</sup> With the help of the *Relaciones*, historians have determined that in most places, the agro-pastoral balance had shifted to agriculture by this point, at the expense of the *montes*.<sup>71</sup>

While these documents have been instructional for modern historians, how useful were these projects for the needs of Felipe II during his reign? The amount of information the questionnaires brought in was astounding. At the time, “they were intended both to enlighten the king about his subjects and to form the basis of a historical geography of Spain (alas, never completed).”<sup>72</sup> Ultimately, they helped with tax collecting and provided information for a census in 1591.<sup>73</sup> However, they probably produced so much information that it took too long to collect for the government to utilize effectively. Felipe wrote to his *corregidor* in Toledo in October of 1575, lamenting that “if we were to send a person to compile the descriptions required, it could not be done with the speed that we desire.”<sup>74</sup>

### *Mapping projects*

---

<sup>69</sup> Bauer, 114.

<sup>70</sup> *Ibid.*, 114-115.

<sup>71</sup> Vassberg, 157.

<sup>72</sup> Parker, *Grand Strategy*, 48.

<sup>73</sup> Lynch, *Spain 1516-1598*, 267.

<sup>74</sup> AGS, Estado, Legajo (Hereafter, leg.) 157, fol. 103, Felipe to the *corregidor* of Toledo, October 1575, minute, cited in footnote 47, Parker, *Grand Strategy*, 321-2.

The questionnaires also resulted in the production of stunning maps of Spain's overseas possessions, including the first map ever of the western Pacific Ocean region.<sup>75</sup> Maps became increasingly important for monarchs and their governments in the sixteenth century.<sup>76</sup> Recent historians of cartography have done extensive research to show us when rulers used maps and what kinds of maps were available. Both Felipe II and Henri IV of France, for example, had maps that even showed locations of small villages in their lands.<sup>77</sup> Maps containing town locations and other phenomena "permitted the government to locate and visualize geographically places that were in the news. They helped ministers to cope with the unforeseen."<sup>78</sup> Nonetheless, cartographic knowledge did not necessarily indicate control over the area represented; maps of Spain from the 1560s suggest that the interior remained poorly understood.<sup>79</sup>

In the late 1550s, Felipe – then still a prince – was in the Netherlands, where he grew interested in Dutch mapmaking. While there in May of 1559, Felipe commissioned the cartographer Jacob van Deventer, who had experience making maps of provinces in the Habsburg Netherlands, "to visit, measure and draw all the towns of these provinces, with the rivers and villages adjoining, likewise the frontier crossings and passes. The whole work is to be made into a book containing a panorama of each province, followed by a representation of each individual town."<sup>80</sup> Probably because of his experience with van Deventer, Felipe commissioned a similar project in Spain with the artist-cartographer Anton van den Wyngaerde, which generated views of over fifty Spanish towns. In

---

<sup>75</sup> Parker, *Grand Strategy*, 63.

<sup>76</sup> Buisseret, 1-4.

<sup>77</sup> *Ibid.*, 4.

<sup>78</sup> Parker, *Grand Strategy*, 125-6.

<sup>79</sup> *Ibid.*, 126.

<sup>80</sup> Quoted in Parker, "Maps," 129.

addition, the king commissioned a map of the entire Iberian Peninsula and ordered a “General Visitation” of his Italian domains.<sup>81</sup> Like the *Relaciones*, these mapping projects received their impetus from Spain’s involvement in territories outside of Spain, leading to their application in the Iberian Peninsula.

More common than the ambitious mapping projects of entire countries or continents, were “detailed maps prepared in connection with a deliberate policy or an individual campaign.”<sup>82</sup> Most of these have not survived. The ones that have are typically related to some military theme, like the maps showing plans for the Great Armada in 1588. Rarer in the archives are maps such as a hand drawn sketch from 1589 to indicate locations of bakeries that made biscuits for the Spanish navy.<sup>83</sup>

Like the time taken to administer and absorb information from the questionnaires, the time it took officials to gather information, carry out land surveys, and produce the maps were serious drawbacks for their usefulness to administrators in this period. Also, maps contained highly privileged information that could get into the wrong hands quite easily. Yet another approach to gathering information, particularly about the forests of Spain, came through the bureaucracy.

#### *Forests and the state bureaucracy*

By the middle of the sixteenth century, Spain had long relied on an extensive bureaucracy to carry out royal policies. The crown installed royal representatives as viceroys, ambassadors, town representatives known as *corregidores*, judges, tax

---

<sup>81</sup> Ibid., 59.

<sup>82</sup> Ibid., 135.

<sup>83</sup> AGS, Guerra Antigua (Hereafter, GA), leg. 264, fol. 34, “Asiento de los lugares de la montaña donde se fabrica el biscocho.”

collectors, purveyors of materials for shipbuilding, as well as appointees for many other duties. They were held responsible for keeping the crown informed of conditions in the monarchy as well as carrying out royal policy in their jurisdictions. Felipe set Madrid as the monarchy's capital in 1561, and from there, or from palaces nearby, the king could administer his officials through letters and reports.

Felipe relied on this bureaucracy to help inform him of forest conditions.<sup>84</sup> By this period, the crown's concern for forests linked directly to shipbuilding for naval defenses. Logically, the king looked to the bureaucrats involved in shipbuilding to inform him of forest conditions. These officials already had experience in the industry, so they understood exactly what kinds of timber the navy needed, and they knew where they could find it. Felipe merely adapted an established system to new needs when he instructed his purveyors to inspect forest conditions near shipbuilding sites. The use of this bureaucratic network resulted in quicker and more frequent reports on the resources of the monarchy than the questionnaires or the mapping projects. Future kings would rely primarily on the bureaucracy for gathering information until the middle of the eighteenth century, when improved techniques in government and cartography encouraged the crown to make new questionnaires and new maps.<sup>85</sup>

For the rest of this chapter, I will focus on bureaucratic reports created for the purpose of gaining actionable intelligence on forest conditions. Particularly, I will discuss reports from the forest superintendent Cristóbal de Barros and a reconnaissance of forests in northern Valencia that produced a rare map depicting forest accessibility. Taken

---

<sup>84</sup> Goodman, 70.

<sup>85</sup> See below, Chapter 5, "State Forestry Reforms during the Reign of Fernando VI, 1746-1759."

together, these efforts contributed to an early modern geographic information system that helped the state extend its territoriality over forest resources.

Carlos I had only shown interest in conserving forests marked for shipbuilding in Guipúzcoa and Vizcaya. By the end of the sixteenth century, however, Felipe II would gather information via bureaucratic forest inspections to extend royal power into forests in Galicia, Catalonia, Valencia, Gibraltar, and elsewhere. The appointment of a superintendent of forests and plantations helped with the state's need for geographic knowledge and enforcement of policy. The forest superintendent embodied the extension of royal authority to the forests of Spain, reshaping local conditions, and providing a growing monopolization of information on forests in the hands of the state. Officially, Felipe II did not create the post until 1574, but Barros was already looking after forest resources on the north coast by 1563.

### *A New Era of Naval Strategy*

Felipe II inherited many of the same problems as his father, but with the added element of near financial collapse. While he did not inherit his father's Austrian Habsburg lands, he would continue to fight wars in northern Europe, the Mediterranean and the New World. Initially he shared his father's approach to naval power, but a disastrous expedition to Djerba in North Africa in 1560 ushered in a new era of naval strategy and shipbuilding, which had repercussions for forest conservation.<sup>86</sup> Felipe learned that he could not contain the Ottomans using improvised assemblages of fleets and adventurous crusading campaigns like Carlos I. He responded to the losses at Djerba

---

<sup>86</sup> Braudel, 1007.

by initiating strategies for long-term enhancement of naval forces and personnel. He secured funding from a special subsidy from the Pope in addition to the *cruzada* and an extraordinary subsidy from the Cortes of Castile. He initiated shipbuilding projects in Barcelona, but the decades of previous decline there forced him to transport experts from the north coast and to plant new forests in the area. In 1562, he asked the Basque shipbuilder Martín de Arana to move to Catalonia to direct ship construction there.<sup>87</sup> In 1567, he asked for similar help from the *veedor* (shipbuilding supervisor) Juan de Gurruchaga, who brought with him several experts in galley construction to Barcelona.<sup>88</sup>

Felipe was aware of problems in the shipping industry on the north coast as well, and he expressed his belief that they were due at least in part to deforestation or, rather, to negligence in replanting.<sup>89</sup> He might also have believed that lack of administrative control contributed to worsening conditions, because in 1558 he received a report on the “difficulty of governing Guipúzcoa due to the character of its inhabitants.”<sup>90</sup> Felipe’s commitment to ensuring long-term naval power and his concern with the state of resources in the northern shipbuilding regions led him to appoint Cristóbal de Barros in May of 1563 to investigate conditions on the north coast. Felipe ordered Barros to oversee compliance with orders to plant oak trees in the jurisdiction of each *corregidor*, two leagues from the coast in the regions of Guipúzcoa, Vizcaya, Cuatro Villas, Asturias, and Galicia. He was to record in a book the exact quantity of oaks planted annually in

---

<sup>87</sup> AGS, GA, leg. 70, fol. 296-7.

<sup>88</sup> *Ibid.*, leg. 71, fol. 179.

<sup>89</sup> *Ibid.*, fol. 111; see William D. Phillips, Jr., “Spain’s Northern Shipping Industry in the Sixteenth Century,” *The Journal of European Economic History*, v.17 n.2 (Fall 1988), 297.

<sup>90</sup> AGS, GA, leg. 67, fol. 7. For more on relations between the crown and Guipúzcoa, see below, Chapter 3, “Growth and Persistence of Habsburg State Forestry in the Seventeenth Century” and Carla Rahn Phillips, “Naval Recruitment and Basque Resistance in Early Modern Times,” *ITSAS Memoria: Revista de Estudios Marítimos del País Vasco* no.5 (2006), 173-185.

each location, in both private and communal forests. Jurisdictions that did not plant new trees would incur fines.<sup>91</sup>

In addition to improving the forests, Felipe wanted Barros to reward shipbuilders who built larger vessels by providing them with subsidies from the crown. The types of ships the crown wanted did not always correspond to the types of ships investors, shipbuilders, and merchants wanted. While shippers sought the best possibilities for profit, the crown prioritized naval defense over maximizing economic opportunities.<sup>92</sup> Naval defense required large, heavily armed vessels, and the crown wanted to be able to lease such vessels from the commercial sector during wartime. As an incentive to shipbuilders and merchants, the crown would give larger ships in port priority in loading goods for export.<sup>93</sup> A set of navigation acts proclaimed by the Catholic Monarchs had prohibited the use of non-Spanish vessels for commerce when native vessels were available.<sup>94</sup> However, merchants tended to prefer smaller vessels that were more capable of entering inland ports. Barros continued to defend the crown's case that bigger was better,<sup>95</sup> but he could not settle the debates over the best ship design, which continued well into the next century.<sup>96</sup>

Neither could Barros stop the cuttings and burnings that were destroying the forests. The state tried to show communities in Asturias and Galicia that the adherence to

---

<sup>91</sup> AGS, GA, leg. 71, fol. 111; *Ibid.*, leg. 347, fol. 15-16.

<sup>92</sup> Phillips, "Shipping Industry," 289.

<sup>93</sup> *Ibid.*, 277.

<sup>94</sup> Lynch, *Spain 1516-1598*, 170.

<sup>95</sup> Phillips, W., p.278; *Colección de documentos y manuscritos*, compilados por Fernández de Navarrete (reprinted Nendeln, Liechtenstein, 1971), vol. 22, part 1, p.192-205; Barros argued that smaller ships did not protect the cargo as well as larger ships, loading times of much larger ships were not much greater than smaller ships, and even the Flemings built large ships, despite having shallower harbors than Spain.

<sup>96</sup> See José Luis Rubio Serrano, *Arquitectura de las naos y galeones de las flotas de Indias, vol. I (1492-1590), vol. II (1590-1690)* (Málaga: Ediciones Seyer, 1991).

plantation quotas had much to offer the local community, but still Barros observed many instances of noncompliance.<sup>97</sup> Certainly, in some regions, plantings occurred successfully, particularly in Vizcaya and Guipúzcoa, but Barros noted that farther west “there is little care, or none, in planting, and great disorder in cutting, burning, and wasting the forests.”<sup>98</sup> The shortage of timber had caused a sharp rise in its price, adding to the troubles of a general decline in shipbuilding in the area. On December 7, 1574, as a response to these increasing problems, the king named Cristóbal de Barros superintendent in charge of planting and conserving trees along the whole north coast from France to Portugal. During Barros’s tenure, he ordered that oak trees could only be cut for shipbuilding or house construction, that a commissioner should be appointed under each *corregidor* to oversee planting and stewardship, that city councils should be responsible for the costs, and that some new roads would need to be built to generate easier access to forests.<sup>99</sup>

Felipe II continued to issue legislation to improve forest conditions throughout Spain, not only in shipbuilding regions. He reconfirmed the 1518 pragmatic in 1567, but that year he also acknowledged that his father’s legislation was not working. He said,

“The old forests are cleared and damaged, cut and felled, and they plant few new ones. Neither trees nor plants are placed along rivers, on common lands or private lands. And the land for the most part is deserted or cleared, without any trees. Firewood and timber have become so scarce that already in many parts people are unable to live. Since forests are

---

<sup>97</sup> AGS, GA, leg. 347, fol. 17.

<sup>98</sup> Phillips, “Shipping Industry,” 298.

<sup>99</sup> *Ibid.*

important for the sustainability for raising livestock and the life of men, not enforcing this remedy will result in intolerable destruction and injustice.”<sup>100</sup>

Five years later, Felipe issued his own *real orden* (royal order), “On the conservation and augmentation of the forests.” The king ordered all citizens to plant twenty trees per head in those locations with *regidores* and to ensure they take root.<sup>101</sup> Felipe also wrote in 1572, “One thing that I desire to see addressed is the issue of the conservation of forests and their expansion. That is very necessary. I believe that they are disappearing. I fear that those that come after us will have much to lament as we leave them with wasted forests and resources. I pray to God that we do not see that in our days.”<sup>102</sup>

Felipe took special interest in regional forest ordinances near shipbuilding centers. In Galicia, he requested to see the ordinances proposed by the regent and *alcaldes mayores* there, then mandated ordinances for the region himself.<sup>103</sup> In 1579, he ordered a complete prohibition on cutting timber in Galicia and called upon his officials to

---

<sup>100</sup> Muñoz Goyanes, 102, “Los montes antiguos están desmontados y talados, y rozados, y sacados de cuajo, y de nuevo son muy pocos los que se han plantado, ni los árboles, ni plantas que se han puesto en las riberas y otros lugares públicos concejiles y de otros heredamientos particulares. Y que la tierra, en la mayor parte de estos reinos está yerma y rasa sin árboles ningunos, que la leña y madera han venido a faltar, de manera que ya en muchas partes no se puede vivir. Y que no poniendo en esto remedio, siendo como es tan principal sustentamiento para la cría y alívio de los ganados, y el vivir de los hombres, vendría a ser el daño y perjuicio intolerables.”

<sup>101</sup> Carlé, 373.

<sup>102</sup> Muñoz Goyanes, 103, “Una cosa deseo ver acabada de tratar, y es lo que toca a la conservación de los montes, y aumento de ellos, que es mucho menester, y creo que andan muy al cabo. Temo que los que vinieran después de nosotros han de tener mucha queja de que les dejemos los bosques y sus riquezas consumidos; y plegue a dios que no lo vemos en nuestros días.”

<sup>103</sup> AGS, GA, leg. 78, fol. 76-81, 107-8, (1579). *Alcaldes mayores* were *corregidores* in places that were *señoríos*, or lordships. Martínez Ruiz, 23.

“redouble their vigilance in the Kingdom of Galicia, Navarre, and the ports of Spain.”<sup>104</sup>

Felipe also remained committed to renewing ship construction in Catalonia and called for more plantations there, as well as the conservation of wood in the arsenal of Barcelona.<sup>105</sup>

Overall, the 1560's and 1570's witnessed a new direction for naval policy and a new commitment for long-term naval defense. Reports of deforestation and commercial decline only added to the need to gain greater control over forest management. As we have seen, Felipe placed a royal representative directly in charge of forest conservation not just in Guipúzcoa and Vizcaya, but also in Galicia, Asturias, and Cuatro Villas. For the Mediterranean coast, Felipe sent experienced personnel from the Basque region to revive shipbuilding in Barcelona. This form of territorialization prepared Spain for a tremendous output of vessels once a more favorable financial situation developed. Such a windfall occurred in the early 1580s, allowing Spain to build up its shipping capacity sufficiently to plan an invasion of England.

### *The Enterprise of England: Preparation and Recovery*

An upswing in the Indies trade after 1578 led to years of prosperity, especially between 1584 and 1586. The volume of trade increased by fifty percent between 1576 and 1586. Moreover, Felipe's accession to the Portuguese throne in 1580 meant a more secure transportation and communication network in the Atlantic, helping to make the Indies convoy system work more efficiently. As an added bonus, international politics remained relatively calm in this period. John Lynch wrote, “Trade and treasure

---

<sup>104</sup> AGS, GA, leg. 92, fol. 76-81. “...de redobla la vigilancia en el Reino de Galicia, Navarra, y los puertos de España.”

<sup>105</sup> Ibid., leg. 81, fol. 315 (1576); Ibid., leg. 88, fol. 21 (1578).

multiplied, and it was in these years that Spain earned the great surpluses which financed the Armada and its rapid replacement.”<sup>106</sup> The idea of an invasion of England appears to have formed in 1583, after the Spanish secured the Azores by defeating a combined French and English fleet. Tensions had been escalating between England and Spain due to Francis Drake’s harassment of Spanish shipping in the Indies between 1577 and 1579 and Queen Elizabeth I’s support of Drake’s activities. The Marqués de Santa Cruz urged Felipe to seize the moment and prepare for an expedition to invade England. Felipe was noncommittal, but indicated that he was taking steps to prepare. He wrote to Santa Cruz, “The situation is such that it is not possible to speak with certainty at the moment...but I am ordering provisions of biscuit from Italy, and expediting the construction of galleons and the hire of ships in Vizcaya, and everything else which seems necessary in preparation for a favorable opportunity.”<sup>107</sup>

Felipe’s concern for forests in Catalonia did not slacken during preparations for the Enterprise of England, which took place for the most part in Portugal and the north coast. In 1586, a *veedor* and *contador* (accountant) named Pedro de Isunza inspected forests along Catalonia’s coast and near Barcelona to learn what wood was available for galley construction.<sup>108</sup> In January of 1588, Felipe wrote, “It is necessary to increase the plantation of trees in Catalonia because the forests are going to disappear.”<sup>109</sup>

---

<sup>106</sup> Lynch, *Spain 1516-1598*, 246.

<sup>107</sup> Cesáreo Fernández Duro, *La armada invencible* (Madrid: Suces. De Rivadeneyra) v.i, 241-3; and Lynch, *Spain 1516-1598*, 440.

<sup>108</sup> AGS, GA, leg. 195, fol. 136 (1586).

<sup>109</sup> *Ibid.*, leg. 220, fol. 211 (1588). “Es necesario incrementar la plantación de árboles en Cataluña porque se van acabando los bosques.”

As devastating as the enterprise of 1588 eventually was for Spain, it was not decisive in the long run.<sup>110</sup> Felipe and his government worked hard to rebuild Spanish naval forces, both to fight the then open warfare with England and to prevent continued attacks along coasts and trade routes. The king quickly received a lot of support from his officials and the nobility. In the months immediately after the disaster, Cristóbal de Barros was at work in Santander repairing the armada.<sup>111</sup> Felipe read reports on the wood taken from Ribadeo, on the Asturian-Galician border, for the repair of remaining ships from the armada in Galicia.<sup>112</sup> In December, a nobleman near San Sebastián offered to cut down trees in his own forest to build replacements for ships lost in the “enterprise of England.”<sup>113</sup> The king received a report describing types of trees growing near Barcelona that would be available for building galleys in 1589.<sup>114</sup> In February of 1589, the Duke of Medina Sidonia sent timber from southern Spain to El Ferrol, Santander, and Bilbao to build new galleons,<sup>115</sup> where at least twelve were under construction.<sup>116</sup>

While all of this activity was impressive, such pressure on traditional sources of timber for shipbuilding sent Felipe in search of new sources. It is well known that in the period after the Armada, Spain was forced to import more materials and a greater number of ships. The fact that Felipe also searched for more sources of timber within Spain itself is often overlooked. Felipe received reports on forests near Gibraltar and Málaga.<sup>117</sup> The

---

<sup>110</sup> For the 1588 armada against England, see Felipe Fernández-Armesto, *The Spanish Armada: The Experience of War in 1588* (Oxford: Oxford University Press, 1988); and Colin Martin and Geoffrey Parker, *The Spanish Armada* (New York: Norton, 1988).

<sup>111</sup> AGS, GA, leg. 227, fol. 182, (Sept.-nov., 1588).

<sup>112</sup> *Ibid.*, leg. 236, fol. 97 (1588).

<sup>113</sup> *Ibid.*, leg. 242, fol. 58 (1588).

<sup>114</sup> *Ibid.*, leg. 227, fol. 148 (Sept.-nov., 1588).

<sup>115</sup> *Ibid.*, leg. 281, fol. 27.

<sup>116</sup> *Ibid.*, leg. 285, fol. 48 (June 1589).

<sup>117</sup> Regarding Gibraltar, *Ibid.*, leg. 264, fol. 184 (1589).

*corregidor* of Antequera responded to the king's need for new vessels and made a case that his forests would be very useful to build ships "for the sea of England."<sup>118</sup> Since it was necessary to use the best timber possible at the lowest cost, the *corregidor* stated that there was very good timber near Antequera, which is only seven leagues by road from Málaga, where they could build the vessels.<sup>119</sup> In Aragón, deep into the Pyrenees near the French border, the crown built a road to the forests of the remote village of Broto to facilitate the extraction of timber for galleon construction, much to the dismay of the people of Broto.<sup>120</sup> Such roads opened municipal forests to naval access, altering the traditional balance of forest management.

Timber shortages at a time when rebuilding the armada was so important, along with the search for new timber sources, led to the creation of a very interesting map and report in March of 1589. In December of 1588, the governor of Castellón de la Plana, *don Luis Castelvy*, notified authorities in Barcelona of two forests potentially suitable for shipbuilding near the border of Valencia and Catalonia.<sup>121</sup> In early 1589, the Viceroy of Catalonia, *don Manrique de Lara*, responded favorably to the idea of finding new sylvan wealth and sent a captain and *veedor* from Blanes named Antonio de Alçatte with a crew of shipbuilding specialists, including a master shipbuilder from Barcelona and an engineer named Jorge Setara, to inspect the forests. Setara would be responsible for making a map to accompany the report by Alçatte.<sup>122</sup>

---

<sup>118</sup> The idea of a second armada against England was shared by many, including the king. Lynch, *Spain 1516-1598*, 462.

<sup>119</sup> AGS, GA, leg. 347, fol. 88.

<sup>120</sup> *Ibid.*, leg. 284, fol. 51 (May 1589).

<sup>121</sup> *Ibid.*, leg. 246, fol. 283 (23 January 1589).

<sup>122</sup> *Ibid.*, fol. 281 (Alçatte's full report).

First, they went to the city of Valencia to secure support from the viceroy, the Marqués de Aytona, who added a royal bailiff and other Valencian officials to accompany the entourage from Catalonia. Next, they ventured into the Catalonian forests of Acenias and Valcanera and found great quantities of pine trees. However, only the very best trees from these forests would be useful for naval shipbuilding and they found many to be growing in rocky soil, creating timber that “it seems would be more appropriate for building houses and small boats than galleys.”<sup>123</sup> The forest of Valcanera was six Catalan leagues from the coastal town of Vinaroz. Four leagues from Vinaroz on the same road was the Monastery of Benifasar. Alçatte said that if the king was interested in using the pines of Valcanera, they would have to build a road of two leagues from near the monastery, at a cost of 1,500 *ducados*. The forest technically belonged to the king, but use of it had been granted to the city of Tortosa and the towns of Asenia and Uldecona. Alçatte also mentioned that the friars of Benifasar were selling a forest that contained trees well suited for smaller vessels.

From Valcanera the commissioners traveled five leagues to a forest in Valencia, named Valivana. In contrast to Valcanera, this forest had no pine trees, but it featured very abundant (*abundantísimo de*) oak trees, mostly very old. The master shipbuilder from Barcelona believed the larger ones would be suitable for shipbuilding, but there were few that could be used for the joints and braces. The town of Morella owned the forest “where, in the summer, a great number of livestock enter the forest and forage there.”<sup>124</sup> There was no road to cover the six leagues from the forest of Valivana to

---

<sup>123</sup> “Y parece que sería mas apropiada para hacer casas y barcas de poco porte que no fabricas de galeras.”

<sup>124</sup> “La propiedad y uso de del dicho bosque dicen que es de la villa de Morella y de otras siete villas de su jurisdicción adonde en verano se recoge mucho ganado por haver pasto para ellos en aquel bosque.”

Vinaroz, but Alçatte claimed that it would be easy to build one, since the land was entirely flat for four of those leagues.

While it was clear that these forests contained timber that could benefit the king, Pedro de Isunza, a *veedor* who, as mentioned above, had experience inspecting forests all along the Catalan coast in 1586, expressed some doubts.<sup>125</sup> Even before Alçatte left on his expedition, Isunza had listed several reasons that made the extraction of timber in these forests not very practical for naval shipbuilding. He said the transportation of timber from these mountains by land to Vinaroz or Tortosa would be costly. Even to get to Barcelona by sea from Vinaroz, while not as costly, was dangerous “por causa de los moros,” because of the Moors that navigated the waters around the Alfaques, or the Ebro River delta, who were expert at naval attacks. To build vessels in the port of Vinaroz would make transportation less costly and less dangerous, but it lacked the infrastructure and personnel of major shipbuilding sites such as Barcelona and Genoa. Roads would need to be built, supplies shipped in, and experts relocated in order for Vinaroz to be productive.<sup>126</sup> Alçatte, in a section tacked on at the end of his report, echoed Isunza’s concerns. Nonetheless, extracting timber from Valencia and Catalonia still may have been preferable to relying on foreign suppliers.

In order to illustrate how these forests would be accessible, Jorge Setara drew a map based on the expedition [Figure 1], depicting the forests (with tiny green tree shapes), mountains, rivers, roads, bridges, towns, and the political border between Valencia and Catalonia.<sup>127</sup> The map takes the viewers’ eyes from the dark forests in the

---

<sup>125</sup> AGS, GA, leg. 246, fol. 283 (January 23, 1589).

<sup>126</sup> *Ibid.*

<sup>127</sup> *Ibid.*, Mapas, Planos y Dibujos, 05/079.



Figure 1: Jorge Setara's map of the forest inspection in Catalonia and Valencia, 1589. (AGS, MPD, 05-079).

west, at the top of the map, down the rivers and roads to the Mediterranean in the east. With the map and the written report, state officials in Valencia, Barcelona, and Madrid would know not only what kinds of trees these forests contained, but also exactly where they were and the best routes to travel there.

Setara's map is special because it does not fall easily into any category of maps from this period treated by historians of cartography. It is not strictly political, topographical, or topological, but it shows where the important towns and natural features were located in the borderlands of Valencia and Catalonia. It is not a map of a military campaign such as a battle, but it was produced by an expedition with a clear military purpose. Overall, the map demonstrates the complementary roles of map making and bureaucratic inspections for enabling state officials to visualize and comprehend resource accessibility. It had a very practical use for the crown and played an important role in the process of territorialization of forests in Spain for state interests.

In a further indication of the importance of forests for the crown's naval goals, the superintendent of forests and plantations, Cristóbal de Barros, was named chief purveyor of shipping in Spain in 1591. In a *real cédula* written to all *contadores mayores*, Felipe II wrote that all assessments and audits of vessels in the service of the king had to go through Barros. Apparently, the differences in measurements and accounts in different ports had caused too much confusion. Felipe wrote that "to remedy this, all [accounts] pass through one hand, and that is to be of Cristóbal de Barros, my servant."<sup>128</sup>

Barros would soon move to Seville, leaving behind his forest visitation duties. In 1594, however, he wrote a final report, which provided the groundwork for a smooth

---

<sup>128</sup> Ibid., GA, leg. 326, fol. 183 (1591). "Para remedio de esto he mandado que todo ello pase por una mano y que esta sea por la de Cristóbal de Barros mi criado."

transition to a new superintendent, Fernando de la Riva Herrera, the author of the *cédula* from 1597 discussed at the beginning of this chapter. The next chapter will begin with this transition after Barros and the extension of the forest superintendency.

### **Conclusion: A New State Forestry for a New Global Age**

Jorge Setara's map, royal legislation for the forests of Guipúzcoa and Vizcaya, Galicia's new forest ordinances, road construction in Broto, forest inspections in Catalonia, and other developments, all contributed to the territorialization of state power in Spain from the middle of the sixteenth century. Carlos I and Felipe II ruled Spain during a period characterized by religious warfare, dynastic conflict, and colonization on a scale not seen before. In order to gain access to resources for imperial defense, the crown began pursuing multiple approaches simultaneously to obtain actionable intelligence of Spanish geography.

The crown did not abandon its traditional concern for the general population's access to forest resources. It could not prevent people from cutting timber for individual use, because so many people depended on the forest, and any attempt by the crown to dissolve completely the long established legal tradition that protected local rights would have disrupted the social order. Rather, the crown only moderately and progressively regulated local behavior in certain territories. People in important shipbuilding regions risked being fined if they did not plant a quota of trees, and certain trees were off limits to needs other than major building projects. The source of the laws was no longer the municipality, but the king and the Council of War. The crown's identification of valuable forest regions expanded during this period, beginning with Vizcaya and Guipúzcoa and

eventually included the entire north coast and even Gibraltar and Valencia. These were not minor changes, but neither were they particularly severe or drastic. The limitations of early modern state control over resources, compared to the modern state control as studied by theorists of territoriality, meant that territorialization could not happen much quicker or smoother than it did.

The unprecedented demands on Spanish government during the sixteenth century helped generate a new state forestry for a new global age. Spain's population and economy grew for most of the sixteenth century, but by the end of the 1590s, a complex coincidence of economic crises, bad weather, overextension of resources, and a rise of powerful states in northern Europe posed a new set of challenges for Spain. The goals and form of state forestry would change little over the next one hundred years, but the real challenge would be the retention of state control over forests in a period of political and economic readjustment.

### Chapter 3 – Growth and Persistence of Habsburg State Forestry in the Seventeenth Century

Fed up with years of non-compliance, the Superintendent of Forests and Plantations of Guipúzcoa, Domingo de Idiáquez, a former soldier of the Army of Flanders, ordered the seizure and imprisonment of the mayor of Asteasu, Domingo de Lizarraga in 1609. Idiáquez incarcerated Lizarraga for refusing to submit testimonies of tree plantings made by his townspeople. Such village testimonies from towns along Spain's north coast contributed to the crown's knowledge of local forest conditions and shaped its evolving policy of forest management. Instead of submitting the testimonies to Idiáquez, however, Lizarraga submitted them to the local *junta* of administrators as a form of resistance to stronger royal oversight. The mayor had shown his concern for local interests in forest conservation by ultimately sending the testimonies to local authorities. Unimpressed, the royal superintendent did not release the mayor until the town relinquished the testimonies fourteen days later.<sup>1</sup>

This example shows one way that royal officials met local resistance against state forestry policies. Guipúzcoans, in this case, simply ignored the orders from the forest superintendent for several years. By the early seventeenth century, the crown enforced its policies of forest conservation through a network of forest superintendents rather than relying solely on new legislation as had been done multiple times since 1547.<sup>2</sup> The superintendents inspected the towns' written testimonies to know if the towns had

---

<sup>1</sup> Ricardo Gómez Rivero, "La superintendencia de construcción naval y fomento forestal en Guipúzcoa," *Anuario de historia del derecho español* v.56 (1986), 617.

<sup>2</sup> See previous chapter, 47.

reached their planting quotas or had fallen short, thus incurring a fine. The seizure of the mayor of Asteasu was a turning point in the superintendent's authority in Guipúzcoa.

Such blatant resistance from Guipúzcoan towns would not be as widespread after 1609.

In the seventeenth century, the king placed superintendents in multiple regions, including Galicia, Asturias and Cuatro Villas, Vizcaya, Guipúzcoa, and Catalonia. Each region responded to the encroachment of royal power into the forests in different ways. The division and multiplication of the office of the forest superintendent extended state power to more local levels. More bureaucrats meant more observation and more information for the crown. The proliferation of forest superintendents and the establishment of family lines in each region to inherit the office became a key component of Habsburg state forestry in the century. The effectiveness of these bureaucrats depended greatly on the personal character of the superintendent, the traditional experiences and expectations of local forest communities, and the evolving broader historical context of the economy: international politics and naval power.

In this chapter, I analyze the territorialization of forests by Habsburg state power in the forms of bureaucratic administration and forest legislation from 1598 to 1700. For the first half of the seventeenth century, Spain struggled to maintain its primacy in European affairs by defending its interests and possessions in Europe and around the globe.<sup>3</sup> The demands of these wars continued to place great strains on Spanish forests, which were managed closer than ever by accomplished men with expertise in naval and

---

<sup>3</sup> Relevant secondary literature on this period is extensive and I have drawn heavily from R.A. Stradling, *Europe and the Decline of Spain* (London: George Allen & Unwin, 1981), J.H. Elliott, *Spain and its World, 1500-1700* (New Haven: Yale University Press, 1989), David Goodman, *Spanish Naval Power, 1589-1665: Reconstruction and Defeat* (Cambridge: Cambridge University Press, 1997), and Carla Rahn Phillips, *Six Galleons for the King of Spain: Imperial Defense in the Early Seventeenth Century* (Baltimore: Johns Hopkins University Press, 1986).

maritime matters such as ship construction and naval service. The transition of power from Cristóbal de Barros, Felipe II's representative in charge of overseeing forest conditions, to his replacements in the late sixteenth and early seventeenth centuries was not always smooth, but the crown eventually established a greater and more regular presence on the north coast. I will examine the lives and careers of several bureaucrats from the early seventeenth century to understand better their policies, the operation of forest conservation in this period, and the establishment of virtual dynasties of hereditary superintendents.

From about 1630, Spain saw its position in European politics change as France, England, and the Netherlands became imperial powers. In these countries, forest conservation became a pressing concern of government as it had been in Spain, but each state approached the challenges of resource management in different ways. I will offer a comparative analysis of approaches to forest conservation from Spain's rivals, France and England, to provide a comparative context and a broader understanding of Spain's distinctive forest history.

Studying resource control strategies is particularly well suited for Spain in the later seventeenth century. Some authors have remarked on how population decline and a depressed shipbuilding sector meant less demand for timber. The naval decline of the period has even caused some scholars to believe that state forestry under the later Habsburgs was virtually non-existent.<sup>4</sup> It might seem logical that if the crown did not use timber to build many ships and the population of its monarchy did not need to extend arable land into upland forests due to demographic stagnation, the state would not require

---

<sup>4</sup> Erich Bauer Mandersheid, *Los montes de España en la historia* (Madrid: Fundación Conde de Valle de Salazar, 2003), 174.

any forest administration system. However, in the final section of the chapter, I study the persistence of Habsburg state forestry in an era not noted for Spanish naval activity. By studying Spanish attempts to affect, influence, and control forest communities' relationships to forest resources, we can study forestry that does not necessarily involve resource extraction and deforestation.

In other words, I am not concerned here with the changing forest cover in Spain, but rather with forest management and the politics of control over forest access. Just because the crown built fewer ships does not mean that it stopped territorializing or caring for its forest resources. In fact, I argue that the Habsburg crown took some very important steps in the later seventeenth century that in many ways helped enable a revival of shipbuilding under the Bourbon dynasty in the eighteenth century. After 1630, in an era frequently described as one of naval decline, the Habsburgs carried out resource control strategies aimed to maintain and improve access to forests for crown interests. They maintained the bureaucratic network of forest superintendents, issued new forest regulations based on local-level experience, decreed more stringent forest legislation that enhanced royal control of behavior in forests, and commissioned more forest reconnaissance missions to locate new domestic and accessible timber areas in which the crown could exercise a greater influence.

### **The Commitment to State Forestry in Times of Peace and Global Conflict in the Early Seventeenth Century**

Toward the end of Felipe II's reign, Spain entered a prolonged period of demographic and economic crisis, made worse by the increasing expenses of maintaining

its possessions in Europe and defending its empire against its rivals.<sup>5</sup> During the 1590s, Spain was facing war on all fronts in Felipe II's attempt to prevent English encroachment in the Americas, Dutch independence, and a Calvinist-ruled France. Military victory remained elusive, and the cost of maintaining the Army of Flanders, along with maritime defenses in the North Sea and the Atlantic, increased Spain's debt to eighty-five million *ducados*, nearly ten times its annual revenue.<sup>6</sup> The crisis led the king to scale back and seek peace with France. In 1598, Felipe II signed the Treaty of Vervins with France and accepted Henri of Bourbon's claims to the French throne, after Henri returned to the Catholic fold.<sup>7</sup>

Felipe III (r.1598-1621) continued with his father's overall strategy of defending the empire against rivals and heretics. Initially, he increased Spanish military involvement in Europe by landing a force in Ireland and increasing the tempo of war in Flanders. He also renewed Spanish commitment to fighting Islamic forces based in North Africa and sent a force against Algiers in 1601. However, victories were few and Felipe III soon began to seek peace as well. The death of Queen Elizabeth I in 1603 opened the way to peace with England under her successor, James I, in 1604. In the Netherlands, the Spanish siege of Ostend in 1604 came at a great cost, leading to devastating mutinies from unpaid soldiers. The Dutch and the Spanish signed an armistice in 1607 and a twelve-year truce in 1609. The search for peace in the early seventeenth century resulted from Spain's financial, economic, and psychological exhaustion.<sup>8</sup>

---

<sup>5</sup> Phillips, *Six Galleons*, 8.

<sup>6</sup> Paul Allen, *Philip III and the Pax Hispanica, 1598-1621: The Failure of Grand Strategy* (New Haven: Yale University Press, 2000), 2.

<sup>7</sup> Stradling, 31.

<sup>8</sup> Elliott, *Spain and its World*, 116.

The era of peace did not result in a complete suspension of hostilities outside of Europe, however, nor in a cessation of naval construction.<sup>9</sup> Spanish forces fought the Dutch in the Caribbean and in East Asia during the twelve-year truce. The crown also turned its attention to the Mediterranean and its problems with piracy and the presence of Islam in the Iberian Peninsula. The expulsion of the Moriscos from Spain in the years from 1609 to 1614 required heavy logistical support from the army and navy.<sup>10</sup> While the crown succeeded in its goals of removing the Moriscos, some of the exiled population exacted revenge against Spain by joining the corsairing forces of Algiers and Salé. A special naval force, the Armada de la Guardia del Estrecho, served to protect Spanish waters and the Strait of Gibraltar in this period. Beginning around 1617, in the midst of the twelve-year truce with the Netherlands, Spain began an active shipbuilding program. Felipe III did not neglect naval forces during this era of European peace. He remained committed to overseeing his forest resources to ensure access to shipbuilding materials.

Many authors have argued that the architects of peace wanted to use the time to place Spain in a better position vis-à-vis the Dutch once hostilities in Europe restarted, which seemed inevitable.<sup>11</sup> Spanish ambassadors in central Europe had reactivated close relations with the Austrian branch of the Habsburg family in the early seventeenth century.<sup>12</sup> After much debate, Spain promised to help Germany fight its rebels, hoping to receive the favor in turn once the truce with the Dutch ran out. War broke out in 1618 in central Europe and in the Netherlands in 1621. For much of the next decade, Spain

---

<sup>9</sup> Goodman, 16-17.

<sup>10</sup> Moriscos were Muslims who had been baptized and outwardly converted to Christianity.

<sup>11</sup> For example, Allen, 238.

<sup>12</sup> J.H. Elliott, *The Count-Duke Olivares: The Statesman in an Age of Decline* (New Haven: Yale University Press, 1986), 56.

experienced a string of military and naval successes.<sup>13</sup> Spanish armies helped defeat a protestant army at White Mountain in 1620, secured key Alpine passes, and occupied strategic territory in Alsace and the Lower Palatinate. Ambrosio Spínola captured the important town of Breda in the Netherlands in 1625. Naval victories that same year included the recovery of Portuguese Bahía in Brazil from the Dutch and the defense of Cádiz, both led by Fadrique de Toledo. Spain also sent aid to the Portuguese in the Persian Gulf and the Indian Ocean, and sent multiple fleets to protect the Philippines.<sup>14</sup> The global successes in this decade would stand as the high point of Spanish power in the century.

One of the boldest elements of Spanish strategy in the 1620's, championed by the Count-Duke Olivares, but developed before his time, was an economic blockade of the Dutch through the control of the North Sea and the Baltic.<sup>15</sup> Control of this area would also guarantee access to Baltic pine and fir trees, used for masts by all European navies. The Dutch controlled the trade and carried masts from Norway, Sweden, Danzig, and Riga. During times of war, Spain's geographic position made access to Baltic resources very difficult. Access to Baltic timber was so important, however, that Felipe IV (r.1621-1665) relaxed prohibitions against Dutch shipping in Spanish ports solely for importing masts.<sup>16</sup> Such a grand strategy to control the North Sea indicates the great lengths to which the crown was willing to go to ensure access to forests. Changes in fortune for the Spanish navy and financial troubles in the late 1620's and 1630's meant the plan never

---

<sup>13</sup> Stradling treats these successes together in his chapter, "From little wars to total war, 1610-1628," 50-84.

<sup>14</sup> Goodman, 15.

<sup>15</sup> Stradling, 62-64.

<sup>16</sup> Goodman, 139.

succeeded, which reinforced the crown's desire to open access to greater stands of domestic timber.

The kings of Spain continued to rely on the bureaucracy to govern and administer the empire. Forest superintendents acted as purveyors of shipbuilding as well, joining both sets of responsibilities. Ultimately, this insured that the crown's forest and naval policies remained closely aligned. During the 1620s and 1630s, the crown relied on the zeal and dedication of bureaucrats, nobles, and military officers when finances and supplies fell short.<sup>17</sup> This strain could only be withstood in the short term, but despite the defeats suffered after about 1630, Spanish forces were able to retain most of the empire. Throughout, the bureaucracy, including the forest superintendents, continued to operate and supply the crown with valuable information and resources.

The Spanish monarchy remained a collection of political units that maintained separate governing structures, currencies, and law courts. At times, the bureaucracy faced severe resistance to crown policies in territories with strong *fueros* that protected local rights. For a century, Castile had been bearing a disproportionate share of the burdens and costs of empire compared to the Crown of Aragón, and Olivares sought reforms to the tax structure of the monarchy to receive a more even contribution from the regions.

Olivares's Union of Arms of 1626 was an ambitious attempt at a new territoriality of Castilian power. The logic behind the attempt was that by unifying the laws of the empire, removing internal customs barriers, and receiving equal tax and military contributions from all regions, the king could deploy his bureaucrats anywhere and monarchical power would greatly increase. Spain could then afford to face all of its

---

<sup>17</sup> Phillips, *Six Galleons*, 220.

imperial commitments. Such notions were too radical for the constitutional diversity of the monarchy, however, and the reforms met with considerable resistance.<sup>18</sup> One example of local resistance to policies formulated in Madrid arose in response to attempts to institute an obligatory naval registration program in the Basque region in the early seventeenth century. Traditionally, naval enlistment was voluntary, with the exception of rare levies in wartime. In 1605, Felipe III ordered all mariners in Guipúzcoa to register so they could be recruited more efficiently in times of conflict. The king added that only registered sailors could continue to fish and make a living from the sea. Local authorities in Guipúzcoa responded that such a decree violated traditional rights and liberties, which had been protected by royal decrees in the past. After years of correspondence, the crown realized the region would continue to resist with “respectful non-compliance.”<sup>19</sup> Outbreak of war in 1618 and 1621 renewed the crown’s efforts to register Basque sailors and Felipe IV issued a new decree in 1625. Again, Guipúzcoans resisted the orders. The Superintendent of the General Registry on the north coast, Martín de Aróstegui, himself a Basque, recommended that local men assist in the recruitment efforts because of the delicate relations of the region with the crown. The government’s need for Basque mariners meant the king had to continue with traditional methods and with the help of local officials and naval experts.<sup>20</sup>

Forest superintendents would face similar resistance when they implemented royal policy, but the crown in the early seventeenth century expressed a vigorous commitment to greater control over forest resources to help in its wars and overall

---

<sup>18</sup> Elliott, *Spain and its World*, 179.

<sup>19</sup> Carla Rahn Phillips, “Naval Recruitment and Basque Resistance in Early Modern Times,” *ITSAS Memoria: Revista de estudios marítimos del País Vasco* no.5 (2006) 175.

<sup>20</sup> *Ibid.*, 173-6.

strategy in the Atlantic, Mediterranean, and North Sea. After 1598, Felipe III and Felipe IV installed a greater number of forest superintendents on the north coast and divided jurisdictions to enable better coverage and increase the number and rate of forest visitations.

### **The Transition to a New Generation of Forest Inspectors: Barros's letter to Riva Herrera, 1594**

Spanish commitments around the globe ensured that the need for naval resources only escalated after the failed armada against England in 1588. We saw in the last chapter that a period of rapid recovery and frantic shipbuilding in the 1590s unfolded in many regions in Spain.<sup>21</sup> In this context, a new generation of forest superintendents gained their experience in naval or military matters, and their descendants would oversee Spanish state forestry for most of the next century.

By 1592, Cristóbal de Barros had left his position as Superintendent of Forests and Plantations for a post as *proveedor* (purveyor) in Seville. He was succeeded as superintendent by Hernando de la Riva Herrera, who had begun inspecting forests in Asturias and around Santander at this time.<sup>22</sup> Riva Herrera observed during his forest inspections in the summer of 1594 that towns failed to achieve their planting quotas.<sup>23</sup> Probably confused about how he was to be effective at overseeing forest conservation in the thousands of towns in his jurisdiction, two leagues from the sea along the coast from Portugal to France, he contacted the crown and his predecessor Barros for some direction.

---

<sup>21</sup> See Chapter 2, 62-64.

<sup>22</sup> Archivo General de Simancas (Hereafter, AGS), Guerra Antigua (Hereafter, GA), Legajo (Hereafter, leg.) 403, Folio (Hereafter, fol.) 99.

<sup>23</sup> Goodman, 75.

There is no known copy of an appointment letter for Riva Herrera, which would have outlined his duties. Most likely, they were not very different from Barros's, but the uncertainty of the specifics of the job left some unanswered questions and required clarification. To help with the transition, Barros wrote a letter in October of 1594 to report on his experience as forest superintendent and told Riva Herrera what he should do and expect while on the job.<sup>24</sup> The letter is an important document articulating the transition of power from the first forest superintendent to the second.

In his letter, Barros began by stating generally how important forests were for shipbuilding, house construction, foraging animals, and hunting, demonstrating a clear awareness of forests as sites of multiple uses. In the regions of Guipúzcoa and Vizcaya, shipbuilding and iron making had put a great strain on forests, so the crown felt an urgency to conserve forests in these regions especially, although Riva Herrera's total jurisdiction was far larger. Barros told his successor that he had only tried to persuade each resident to plant two oak trees every year and had refrained from forceful methods. He said that he was not obligated to visit all of the plantations within this jurisdiction, nor did he need to make specific visits at specific times, "as Riva Herrera supposed."<sup>25</sup> Barros worked without taking money from anyone and estimated that his work had cost him 3,000 *ducados*.

Above all, his job was to persuade people to plant trees and make the orders of the king clear, while local justices had the responsibility for collecting fines, although Barros admitted that "the desire of most was not to plant to manage and clear the forests."<sup>26</sup>

---

<sup>24</sup> AGS, GA, leg. 403, fol. 102.

<sup>25</sup> "...como Riva Herrera lo presupone."

<sup>26</sup> "Aunque el deseo de los mas era no plantar a provecharse y disipar los montes."

Barros told Riva Herrera to ensure that other personnel involved with forest conservation performed their duties responsibly, including the local justices. Riva Herrera had to ensure that he or other officials continued to make visits into forests “from France to Portugal,” and not just around Guarnizo, one of the most active shipbuilding centers on the north coast. Justices that did not conform to the king’s demands should be punished, typically with a fine.

Barros also instructed Riva Herrera on how to make proper plantations. For new plantings, a hole two feet in circumference was required so that grass and other weeds would not prevent the sapling from taking root. The hole also collected water, allowing for healthy growth. For these young trees, Barros liked to plant thornbushes around them to protect them from livestock. The young trees should be planted in February or March in the low, humid lands so that winter rains did not rot the roots. Then they would grow in the moderate moisture of the summer. The trees planted in the wetter lowlands grew thicker than in the highlands. As a result, Barros wrote, trees in the highlands needed to be planted farther away from one another, and he warned that they grew more slowly. Vizcaya was the area best suited for shipbuilding, but some of its best trees were being used for other things, such as making charcoal. Barros noted some of the biggest trees came from this region, including some that grew four *brazas* wide,<sup>27</sup> which could produce one hundred cartloads of firewood. Barros implied that such trees should be reserved for naval use.

---

<sup>27</sup> A *braza* was about 1.67 meters.

Barros conceded that “it is almost impossible [for the superintendent] to visit every plantation.”<sup>28</sup> Knowing that Riva Herrera would have to prioritize his visitations, Barros made clear that Vizcaya and Cuatro Villas were the most important areas, requiring the most attention. Barros noted that when he did carry out visitations, his precise planting directions worked. The territory he could effectively control, however, was clearly far smaller than the territory of his full jurisdiction, and he was unable to carry out frequent visits to observe the growth of new plantations.

Since Barros only attempted to persuade local populations to plant trees and left the enforcement up to the local justices, most towns had simply ignored his instructions. Still, Barros’s approach may have been part of a conscious strategy, since he presumably knew that harsher tactics would have led to stronger resistance and social unrest. Given that background, it is not surprising that in the short-term Riva Herrera witnessed non-compliance in his inspections of 1594. On the positive side, Barros’s approach did not result in the kind of resistance I will discuss in later years under superintendents who used stronger methods. In fact, town councils in Cuatro Villas in 1594 “said they were won over by the leniency of the superintendent who, instead of imposing heavy fines, asked them to make good the planting quotas they had failed to fulfill.”<sup>29</sup>

The crown’s response to Riva Herrera’s concerns over jurisdiction in the 1590’s eventually led to a new period of state forestry territorialization. His precursor Barros, as able a bureaucrat as any serving Spain at this time, had been unable to visit everywhere in his jurisdiction to carry out his duties. Beginning in 1598, the job he once held was

---

<sup>28</sup> AGS, GA, leg. 403, fol. 102. “Esto bien que pensar que el superintendente lo a de visitar todo, es casi imposible.”

<sup>29</sup> Ibid., fol. 98, Gonzalo del Rio, testimony of inspection of forests, 16 July 1594, Santander; translation to English from Goodman, 104.

divided into smaller territorial units in order for more efficient forest conservation. In the seventeenth century, there were separate forest superintendents for Galicia, Asturias and Cuatro Villas, Vizcaya, Guipúzcoa, and Catalonia.<sup>30</sup> Riva Herrera became the superintendent of Asturias and Cuatro Villas, a region in which he had shipbuilding experience.<sup>31</sup> The letter Barros wrote in 1594 remained influential for the methods of forest inspection and new plantations, but later superintendents would employ new methods of enforcement.

### **The Formation of Forest Superintendent Dynasties**

Cristóbal de Barros had been named the first forest superintendent by extension of his expertise in ship construction and other naval matters. His promotion to *proveedor* for the entire Armada indicates that the position of forest superintendent was a highly regarded and important office. It should not be a surprise, therefore, that his successors were for the most part accomplished servants of the state with similar naval expertise. One that stands out above the rest, however, was the superintendent of forests in the shipbuilding region of Vizcaya, Agustín de Ojeda.

---

<sup>30</sup> Whereas the superintendents of the coast from Portugal to France combined the duties of ship construction and forest conservation, Catalonia had its own forest *conservador*, who worked closely with the superintendent of the *atarazanas*, the shipyards of Barcelona. Goodman, 74.

<sup>31</sup> Goodman says Hernando and Fernando were two different people, father and son, but I have not found any evidence that they were two people. In fact, in a list of superintendents from Cuatro Villas in the Museo Naval, Fernando is listed right after Barros, starting in 1593. There is no Hernando in the list. (Museo Naval, Ms.1294) The names Hernando and Fernando were often interchanged; for example, Christopher Columbus's son's name has been written as both.

Ojeda was one of the most important and most prolific shipbuilders of the early modern era.<sup>32</sup> Between 1589 and 1598, he built thirty galleons and two *galizabras* for the crown. His appointment in 1598 as “*Superintendente de fábricas y arqueamiento de navíos, y conservación de montes y plantíos en el Señorío de Vizcaya*” was the culmination of a long and distinguished career that totaled fifty-six years of royal service. Kings and councils sought his expertise until his death in 1619. In January of the following year, his widow wrote to Felipe III to ask for some financial assistance since their family had fallen on hard times. To make her case, she reported on the distinguished years of service performed by her late husband, providing us a good sense of the career of Agustín de Ojeda, which set him on the path to being forest superintendent of Vizcaya.<sup>33</sup>

Before he built galleons, Ojeda worked on the Indies run and helped prepare for the Armada against England. In 1578, he commanded a *flota* carrying silver, cochineal, and over 20,000 *ducados* worth of cargo from Santo Domingo back to Spain. On his way home, however, he was captured in the Azores, which had entered into rebellion against Felipe II’s accession to the Portuguese throne.<sup>34</sup> Ojeda managed to escape to Lisbon, and he informed the king about what was occurring in the islands. In 1589, Ojeda’s shipbuilding career began when Cristóbal de Barros sent orders from the king to build twelve galleons. Six were to be built by Hernando de la Riva Herrera, the future

---

<sup>32</sup> María Isabel Vicente Maroto, “Agustín de Ojeda y la construcción de navíos a finales del siglo XVI,” in María Isabel Vicente Maroto y Mariano Esteban Piñeiro (coords.) *La ciencia y el mar* (Valladolid: Sever-Cuesta, 2006), 311-344.

<sup>33</sup> AGS, GA, leg. 1003, “El 18 de agosto de 1629, el Consejo de Guerra hace recuerdo a V.Mgd. volviendo a sus reales manos la inclusa Consulta sobre la pretensión de Doña Antonia de Velasco, viuda del capitán Agustín de Ojeda, Superintendente de fábricas y plantíos en Vizcaya.” Discussed in Vicente, 313-4.

<sup>34</sup> The Portuguese succession crisis began after the death of King Sebastian I at the Battle of al Qasr al Kabir in Morocco in 1578. Felipe II of Spain claimed the throne, but “Most of the Azores archipelago refused to recognize the Spanish succession, instead acknowledging the claim of Dom Antonio, prior of Crato, Sebastian’s illegitimate cousin.” In 1582 and 1583, two Spanish fleets were sent to end the resistance. From Parker, *Grand Strategy*, 167.

Superintendent of Forests in Cuatro Villas, and the other six by Ojeda. In 1594, in another example of how forest superintendents in this period knew each other well, Ojeda worked alongside Antonio de Urquiola, a future superintendent of Guipúzcoa, in preparing galleons in Pasajes, near San Sebastián. Over the next four years, the crown commissioned Ojeda to build twenty-four more galleons, an astonishingly high number for such a brief period. During Felipe II's urgent program to rebuild the navy after the Armada of 1588, three future forest superintendents received important experience in royal naval service.

There is evidence that Ojeda assumed Barros's job in Vizcaya by 1596, but he was not appointed superintendent of the *señorío* officially until 1598.<sup>35</sup> His early inspections revealed that forests were being consumed rapidly and there had been no planting for many years. Over the course of Ojeda's career, we can see that he effectively increased the timber stocks in Vizcaya. Between 1602 and 1615, the people of Vizcaya planted 467,036 trees in the region.<sup>36</sup> In 1603, the king commissioned Ojeda to serve as superintendent in Galicia as well, which had not had a forest superintendent up to this point, to oversee a contract with Isidro Sánchez de la Mota, who supplied timber for shipbuilding.<sup>37</sup> In 1612, Ojeda returned to Galicia to visit the forests there and established conservation practices similar to those outlined in Barros's letter to Riva Herrera. An inspection by Ojeda's successor in Galicia, Bernabé Márquez, in 1624 indicates that timber stocks had increased since his 1612 visit.<sup>38</sup>

---

<sup>35</sup> Vicente, 316.

<sup>36</sup> Goodman, 105.

<sup>37</sup> Vicente, 318.

<sup>38</sup> Goodman, 104. The comparatively late arrival of a full-time forest superintendent in Galicia meant that episodes of resistance did not occur until the 1620's and 1630's. Ofelia Rey Castelao wrote that the first

Ojeda succeeded at his forest superintendent duties without having forestry experience, but he was an able administrator and had a great deal of knowledge about the kind of timber that naval shipbuilding required. His real expertise was in ship construction, and the crown sought his advice in 1607 and 1610 when the top mariners in Spain came together to discuss ordinances for regulating ship design. Scholars have shown that Felipe III's reign was a turning point in naval policy.<sup>39</sup> During his reign, policy-makers sought ways of perfecting ship design, and in 1605 the king called an assembly of Spain's maritime experts to establish optimum design specifications. In 1607, eleven experts, including Ojeda, met in Madrid to debate recommendations for the best length to beam ratios and establish a formula for calculating a ship's capacity from its dimensions.<sup>40</sup> This was not the last of such meetings during the reign; other groups of experts continued to debate the matter before the crown issued ordinances in 1613 and 1618.

Ojeda by this time was one of the most accomplished shipbuilders and naval administrators in the monarchy. The king wanted to make sure the job of forest superintendent of Vizcaya stayed in Ojeda's family.<sup>41</sup> However, his two sons died before he did, serving in the navy. As a result, the king said that whoever married his eldest daughter would succeed Ojeda, if approved by the Junta del Señorío de Vizcaya. It turned out that both his daughters married highly accomplished mariners. One daughter married Martín de Aróstegui, who was the *veedor general* of the entire Atlantic fleet and

---

formal protest against royal forest inspectors in Galicia occurred in 1629, in Ofelia Rey Castelao, *Montes y política forestal en la Galicia del Antiguo Régimen* (Santiago de Compostela: Universidad de Santiago de Compostela: Servicio de Publicacións e Intercambio Científico, 1995), 171.

<sup>39</sup> Phillips, *Six Galleons*, 28.

<sup>40</sup> Vicente, 319; Goodman, 116.

<sup>41</sup> AGS, GA, leg. 1003.

mentioned above as part of the crown's naval recruitment efforts. Ojeda's other daughter, María, married her father's successor, Martín de Vallecilla y Ochoa del Casal. Vallecilla descended from a well-established family from Portugalete and was admiral of the Indies escort squadron. The daughter of María and Martín would marry Francisco Díaz y Pimienta, who would become captain general of the Indies escort squadron and then of the Atlantic fleet.<sup>42</sup> The responsibility for conserving Vizcaya's forests remained in Ojeda's family for at least sixty-two years, not just because of strategic arrangements made within the family, but because of direct royal involvement.

During his career, Ojeda faced severe money shortages, skyrocketing timber prices, and personnel shortages. However, he asserted his authority as superintendent in both Vizcaya and Galicia and was able to improve the forests and fulfill his duties in ship construction, helping to set the standards in ship design of the day.<sup>43</sup> Vallecilla succeeded Ojeda and, according to a detailed study of his tenure,<sup>44</sup> was very diligent in recording the successful plantings in Vizcaya. Although Vallecilla often had to face the competing interests of the region's flourishing iron industry, the establishment of the forest superintendent's territorial control in Vizcaya occurred rather smoothly compared to other regions.

The effective establishment of the superintendent's office in Guipúzcoa took longer. In 1598, the king appointed Antonio de Urquiola, a Basque who directed the arsenal of Pasajes, built ships for the king alongside Ojeda, and served as captain general

---

<sup>42</sup> Vicente, 315.

<sup>43</sup> For details on the evolution of Spanish ship design, see José Luis Rubio Serrano, *Arquitectura de las naos y galeones de las flotas de Indias, vol. I (1492-1590), vol. II (1590-1690)* (Málaga: Ediciones Seyer, 1991).

<sup>44</sup> Goodman, 105-108.

of the squadron of Cantabria. However, as superintendent he spent little time in Guipúzcoa, and when he did, the towns rarely complied with the planting quotas. The king and Urquiola both took a moderate approach to the situation, aware of the region's sensitivity to royal intervention, and they said they wanted to persuade people to make the plantations, but did not want to violate the region's *fueros*. Such an approach produced very little new forest growth, but neither did it promote serious conflicts between crown and province.

Urquiola died in Madrid in 1600, and the province thereupon declared a return to their observance of the forest conservation ordinance of 1548, no longer recognizing the office of the superintendent.<sup>45</sup> Ignoring that provocative act, the king looked for a replacement for Urquiola, and we have a copy of the appointment letter of his successor, Domingo de Idiáquez Goicoechea, from July 21, 1601.<sup>46</sup> Since we do not have a copy of Urquiola's appointment, Idiáquez's letter is the earliest appointment letter we have for Guipúzcoa; most likely, the letters were very similar. Contrary to what Cristóbal de Barros had written to Riva Herrera, Idiáquez's appointment letter said he needed to make visits at least twice a year to all towns and villages in his jurisdiction two leagues from the sea or a navigable river, in the company of a local justice. In other words, rejecting past approaches, Idiáquez's appointment letter enhanced the authority of, and added new responsibilities to, the office of forest superintendent.

Idiáquez was ordered to signify which trees were best suited for shipbuilding and to allocate the quantity of new trees to plant in each region, bearing in mind the

---

<sup>45</sup> Ricardo Gómez Rivero, "La superintendencia de construcción naval y fomento forestal en Guipúzcoa, 1598-1611," *Anuario de historia del derecho español*, v.56 (1986) 606.

<sup>46</sup> Museo Naval, Colección Vargas Ponce, Tomo 31, Documento 31, Folios 170-174. A copy of the full text is in Gómez Rivero, 626-30.

suitability of the terrain. During his visitation, he was required to take testimony from each location specifying the quantity of trees planted, so that on his return trip he could take an account from the justices and *regidores* to see if they had complied with the stated quota. For each tree that they were short, the justice, mayor, or other responsible parties would be fined one *real*. The total fines collected by the superintendent would be divided three ways, with one-third going to the person who called attention to the infraction,<sup>47</sup> one-third to pay for the superintendent's visits, and the remaining third to the crown. This three-part division of fines followed standard Habsburg practice. Each year, Idiáquez needed to make a full report of the quotas he set and of the testimonies from the towns. Finally, like Barros and Urquiola before him, Idiáquez had to oversee the disbursement of loans to shipbuilders working for the crown to build vessels of at least 300 *toneladas*.<sup>48</sup> His salary amounted to 800 *ducados* per year. This salary would remain unchanged for Idiáquez's successor, and the letter of appointment stipulated that anyone who performed the job of interim superintendent would be paid 400 *ducados* per year.

Idiáquez's appointment letter indicates that the superintendent had a tremendous amount of control over people's behavior in the forests, at least on paper. The superintendents monitored forests and forest communities more closely than ever before, and the fact that a crown official (essentially someone viewed as an outsider by the forest communities of Guipúzcoa) assigned tree plantings had unsettling effects in some areas. In an act of territoriality, a superintendent identified an area and signified to the community the number of trees they needed to plant in a certain amount of time. He

---

<sup>47</sup> In the letter, this is written as the "denunciador."

<sup>48</sup> For details on how the tonnage of a Spanish ship was calculated, see Phillips, *Six Galleons*, 60-1 and 259, footnote 50.

brought with him royal authority and the power to fine those that did not comply. Such methods were an unwelcome change from Barros's and Urquiola's techniques. Much like royal decrees on naval recruitment, the king's assertion of rights to control local forests was challenged by Guipúzcoans' claims to autonomy, based on *fueros* and traditions. It is well to remember that all of the royal superintendents in Vizcaya and Guipúzcoa were Basque by birth, but this did not seem to enhance their authority in the eyes of local officials.

In September of his first year on the job, Idiáquez sent letters to town councils urging them to plant before his visitations in the spring.<sup>49</sup> He said that for each tree cut from common, as well as private land, two more needed to be planted. For new plantations, trees needed to be spaced eight *codos* from each other. Before the month was over, Idiáquez received word from the towns of Tolosa, Oyarzún, and San Sebastián that they did not want a superintendent and they planned to submit forest testimonies to the local *junta*, as they had been doing, not to Idiáquez.<sup>50</sup> In November, after complaining to the king of such resistance, Idiáquez received a *real cédula* confirming his role as superintendent, which he took with him on his forest inspections. Nonetheless, by the spring, Idiáquez had not received any testimonies, though the towns had sent them to the local *juntas*.

In July, Idiáquez, an upright former soldier not tolerant of such disobedience, decided to fine officials in Azpeitia one thousand *reales* for not planting.<sup>51</sup> Idiáquez

---

<sup>49</sup> Gómez Rivero, 607.

<sup>50</sup> The town of San Sebastián added that they would rather plant trees 10 *codos* from each other, not 8 as ordered by Idiáquez. Gómez Rivero, 609. The *codo real* used in ship construction was 22 inches or 565 millimeters long. See Phillips, *Six Galleons*, 228.

<sup>51</sup> Gómez Rivero, 612.

probably meant to make an example of Azpeitia rather than fine them for not planting exactly one thousand trees. This failed to set other towns straight, however, and they continued to send their testimonies to local *juntas*. At the end of 1602, Idiáquez wrote to the king that he could not perform his duties. The king once again reconfirmed his authority as superintendent in 1603 and said simply that he must make the people obey his orders. Meanwhile, the province continued to ignore the superintendent. Over the next several years, Idiáquez continued to invoke the king's orders, tried to make inspections, and issued new quotas, but the towns of Guipúzcoa continued to flout his authority.

Idiáquez had run out of options by 1609. His seizure and imprisonment of Domingo de Lizarraga, the mayor of Asteasu, for not submitting testimonies of plantings made in his jurisdiction was a desperate effort to establish his authority in the region. Idiáquez had gone to great lengths to assert that authority, and it appears that his tactics finally had the desired effect. After the episode in Asteasu, most towns began cooperating with the superintendent. Even the most resistant town, San Sebastián, submitted testimonies withheld since 1605.<sup>52</sup> Not surprisingly, Idiáquez was not a popular figure in much of the region. The town council of Zumaya expressed its delight when Idiáquez left for his appointment as governor of Melilla in 1611 and asked the crown not to name a new superintendent.<sup>53</sup>

Idiáquez's tenure in Guipúzcoa demonstrated that the crown's forest conservation bureaucracy did not immediately establish a secure position of authority, though his high-handed tactics did much to overcome resistance from the town councils. As with Agustín de Ojeda in Vizcaya, Idiáquez's replacement would stay in the family, but his son Alonso

---

<sup>52</sup> Ibid., 618.

<sup>53</sup> Ibid., 619.

was away serving in the navy in 1611. Domingo de Echeverri served as interim superintendent until 1618, receiving half salary. Echeverri managed to continue cooperating with Guipúzcoa and received testimonies directly from the mayors and *regidores*, although not all the time. Alonso de Idiáquez would eventually serve a long and distinguished career as forest superintendent from 1618 to 1645.<sup>54</sup>

In Catalonia, the job of building galleys and inspecting forests went to two different people, but they frequently worked together closely on forest matters.<sup>55</sup> Antonio de Alçatte, who carried out an inspection of forests in Catalonia and Valencia in 1589,<sup>56</sup> served as the director of Barcelona's *atarazanas* (shipyards) into the early seventeenth century. The *atarazanas* was the most important center for galley building in Mediterranean Spain. Alçatte's son, Carlos de Alçatte, replaced his father and served from 1607 until 1623.<sup>57</sup> The Alçatte family and multiple forest superintendents had trouble finding adequate supplies of timber near Barcelona; this had been the problem that led to Alçatte's forest inspection of 1589. The difficulties securing timber arose for other reasons besides deforestation. Timber sellers would refuse to sell to the crown, which offered less money and was less reliable in making payments than private buyers. As in Guipúzcoa, the crown urged superintendents in Catalonia not to harass local populations about tree plantings, but to try to persuade them to plant more trees. The royal forest of Tortosa became a valuable exception, since it both belonged to the king and was near Barcelona.

---

<sup>54</sup> Goodman, 262, Appendix A: "Superintendents of Forest Plantations, 1574-1660."

<sup>55</sup> *Ibid.*, 74.

<sup>56</sup> See previous chapter, 64-68.

<sup>57</sup> Goodman, 125.

About the time when the crown's strategy to control the North Sea and access to Baltic pine forests began to falter, the crown investigated ways to gain access to the great pine forests of Navarre via the Ebro River. If the crown could find a way to use the pines of Navarre, perhaps it could stop relying on Baltic timber for masts. The plan to build a road to one of the Ebro's tributaries in Navarre came from Pascual de Atocha, a shipbuilder from San Sebastián.<sup>58</sup> The king approved a reconnaissance mission in 1637, adding, "This is of greater importance than anything in Spain."<sup>59</sup> Despite the great distance of 160 leagues, ninety days of travel, the employment of several skilled raftsmen, and great costs to build the roads and clear the river of obstacles, the possibility of domestic self-sufficiency led to a full inspection of the river network and supply system. Unfortunately, after the sample of pines arrived in Barcelona in 1639, authorities decided they were of inferior quality and too short to serve as masts. Nonetheless, the chance of finding better trees nearby encouraged the crown to attempt similar reconnaissance missions multiple times over the next one hundred years.

On the north coast, in the region known as Cuatro Villas and Asturias, Hernando de la Riva Herrera continued to serve until 1605, when his son Fernando possibly took over and served until 1632. As in other regions, the job remained in the family, and Fernando's nephew, Fernando de la Riva Herrera y González de Acevedo, served until 1647. It took a couple of generations, but after the death of Cristóbal de Barros, the Spanish forest inspection bureaucracy had grown to include powerful bureaucratic dynasties with broad powers to monitor and control forest management from Galicia to Catalonia. The reign of Felipe III and the early years of Felipe IV's reign essentially

---

<sup>58</sup> AGS, GA, leg. 3168, August 12, 1637.

<sup>59</sup> Quoted in Goodman, 139.

created a new Habsburg forest territoriality. Beginning in about 1598, the crown gradually established, formalized, and centralized control over extensive forest resources for the interests of the navy through its bureaucracy.

### **The Persistence of State Forestry in the Later Years of the Reign of Felipe IV: Toribio Pérez de Bustamante's *Instrucción* of 1650**

Recently, Erich Bauer Mandersheid wrote, "From 1630, naval construction decayed so much that the government became obligated to rent foreign squadrons. The one hundred years until approximately 1730 signifies a certain interval of tranquility for the forests of the country."<sup>60</sup> He says that during a period of naval shipbuilding decline, the crown placed a lot less pressure on Spain's forests, allowing them to recover from the decades of deforestation of the sixteenth century. One could add to this argument that population decline, or at least a plateau of growth, in this period also reduced the rate of deforestation, since the extension of agriculture had traditionally been a greater threat to forests than shipbuilding. Guillermo Muñoz Goyanes, who has also written on forests and forest legislation in Spain, has noted that measures for defending forest resources during a period of civil conflict after 1640 were notably absent.<sup>61</sup> With such contributions to our knowledge of forests in the seventeenth century, why bother studying state forestry in an era of naval decline, that is, from about 1630 to 1730?

The answer is clear. By exploring the idea of territoriality in the context of Spain in the later seventeenth century, we can study an aspect of forestry history that does not

---

<sup>60</sup> Bauer, 174.

<sup>61</sup> Guillermo Muñoz Goyanes, *Crónica sobre bosques y montes de la Península Hispánica* (Madrid: Fundación Conde del Valle de Salazar, 1983), 112.

necessarily involve resource extraction and deforestation. Instead, the resource control strategies of the crown aimed to maintain and improve access to forests for crown interests. Such strategies included the continuation of the bureaucratic network of forest superintendents, the production of forestry advice based on local-level experience, more stringent forest legislation that enhanced royal control over behavior in forests, and more forest reconnaissance missions aimed to locate new domestic and accessible timber areas into which the crown could project greater authority. Such activity is reason enough to study state forestry in an era of naval decline and not to dismiss the period as one of tranquil forest recovery lacking royal involvement.

By the time war broke out in 1618 and 1621 after a decade of peace, the forest superintendents had established their authority in northern Spain. The high demands of war for the next forty years put great strains on financial, material and human resources, and the crown relied on the bureaucratic network of forest inspectors to help ensure access to shipbuilding timber. Olivares held naval power in high esteem and worked to override regional liberties, the same ones that had been giving superintendents such as Antonio de Urquiola and Domingo de Idiáquez trouble, in order to help meet the crown's need for resources.

After a decade of military and naval success, Spain's fortunes began to wane after 1627. That year, Felipe IV declared bankruptcy and rescheduled his debts. The following year, at this crucial financial juncture, the Dutch captured an entire treasure fleet in Matanzas Bay, Cuba. In 1629, Olivares gambled on a quick intervention in the succession of Mantua to help prevent the title going to the French-born Duke of Nevers. At the time, France, under the leadership of Louis XIII and Cardinal Richelieu, was busy fighting the

Huguenot-controlled city of La Rochelle. Olivares believed France with Richelieu's leadership posed Spain's greatest long-term threat and thus wanted to make a preemptive strike against French interests in Italy, while France was busy with internal affairs.<sup>62</sup> However, the Spanish siege of Casale in Mantua took longer than planned, and France sent forces to Italy to prolong the struggle for three years. The War of the Mantuan Succession was a costly distraction for Spain following the loss of the 1628 treasure fleet, and it unfolded at a time of poor harvests and rising food prices. John Elliott wrote "In retrospect, the years 1627-1629 seem to be the turning-point in the history not only of the Olivares administration but also of the attempts of Habsburg Spain to retain its European primacy."<sup>63</sup> However, at the time, this was not clear. Spain would continue to pursue its ambitious foreign policies and, at the very least, survive in its wars against the Dutch, the English, and the French. Nor did the crown abandon its commitment to conserve timber resources through the efforts of its forest superintendents and forest legislation.

While Spain suffered many losses after 1630, its military and naval forces could still mobilize effectively at crucial moments. Its ability to repeat extraordinary feats against all odds eventually waned, but the process unfolded slowly. In 1630, the Dutch returned to Brazil, and Spain sent another relief force to repel them, but the Dutch eventually established a long-term foothold in northeast Brazil. Dutch and English encroachment in the Caribbean also accelerated in this period, eroding the Spanish monopoly of American trade. The Dutch took Curaçao and the English established control in Barbados, Bermuda, St. Kitts' and Nevis. The 1630's also witnessed the beginnings of a serious naval threat from France. Richelieu had forty warships by the

---

<sup>62</sup> Elliott, *Spain and its World*, 126-7.

<sup>63</sup> *Ibid.*, 125.

middle of the decade.<sup>64</sup> War broke out with France in 1635, which at the same time threatened Spain's most important forest regions in the Basque country and Catalonia.

In 1636, the Habsburgs of Germany and Spain launched a joint invasion of France, nearly reaching Paris. Over the next four years, however, Spain suffered some of its most demoralizing setbacks. The Habsburg invaders were soon expelled from France, and the Catalan army collapsed under desertions and conflicts within its ranks.<sup>65</sup>

Richelieu opted to invade the Basque region rather than take advantage of the growing tensions in Catalonia. In 1638, the French blockaded the Guipúzcoan coast, attempted a siege of Fuenterrabía, destroyed ships under construction in Pasajes, and defeated a Spanish fleet off the coast near Guetaria.<sup>66</sup> Spain suffered even greater defeats in 1639 when a fleet sent to recover Brazil failed, and *don* Antonio de Oquendo lost thirty-two of his forty-seven combat ships at the Battle of the Downs.<sup>67</sup>

In 1640, Catalonia and Portugal revolted against Castile. Castile could not face both fronts at once and gave Catalonia primary attention. Olivares could not overcome such disasters, and Felipe IV removed him from power in 1643. Spain sought peace with the Dutch to face the rebellions and the invading French forces in Catalonia. In 1648, Spanish representatives signed the Treaty of Münster, in which Spain finally recognized Dutch independence. Spain allowed the Dutch to provide shipping for Spanish commerce and the Dutch promised to end interference with Spanish trade in America. Fortunately for Spain, France descended into the civil conflict known as the Fronde later in 1648, allowing Castile a chance to recover Catalonia. In 1652, rebel authorities in Barcelona

---

<sup>64</sup> Goodman, 24.

<sup>65</sup> Stradling, 94.

<sup>66</sup> Goodman, 24.

<sup>67</sup> Phillips, *Six Galleons*, 218-9.

capitulated to *don* Juan José, an illegitimate son of the king, ending the Catalan revolt. The recapture of Dunkirk that same year indicated that Spanish power had not completely disappeared. In fact, victories against France at Pavia in 1655 and in Flanders in 1656 brought France's Cardinal Mazarin to Madrid for peace talks.<sup>68</sup>

In the 1650s, however, the rising power of England during the Protectorate of Oliver Cromwell aimed to destroy Spanish sea power by gaining greater influence in America, weakening the Spanish position there. England combined forces with France, leading to another series of setbacks for Spain, including the definitive loss of Dunkirk (1658), and finally leading to the Peace of the Pyrenees in 1659. For Spain, peace provided an opportunity to deal with the Portuguese rebels, but support from England and France gave Portugal the means necessary to resist Spanish invasions in 1663 and 1665. Spain finally made peace with the rebels and recognized Portuguese independence in 1668. Spain made some commercial and colonial concessions to England as well, laying the groundwork for peace until the next century.<sup>69</sup>

The Spanish population failed to grow in this period, and its economy continued to stagnate, restricting supplies of men and money for its military forces. Concerns for supplies, such as shipbuilding timber, also continued throughout this period. The crown made incredible demands on its bureaucracy, but it managed to find loyal subjects willing to serve the crown, often at great personal cost. Clearly, Spain remained quite active militarily after the "turning-point" of 1627-9, and it achieved many significant naval victories. What was also clear, however, was that by 1668, Spain had fallen to second-rate power status behind France and England. Nonetheless, throughout this period of

---

<sup>68</sup> Stradling, 123.

<sup>69</sup> *Ibid.*, 144-7.

economic depression and political realignment, the crown's concern for its forest resources remained at a high level. In 1656, for example, at a time when Spanish naval power was on the wane, Felipe IV confirmed the most important forestry document of the seventeenth century – the regulations written by Toribio Pérez de Bustamante.

Bureaucratic experience in dealing with the local forest communities had already resulted in various innovations and new tactics in forest management for state interests. The most influential piece of state forest writing in the entire century, however, came in 1650 from the forest superintendent of Cuatro Villas, Toribio Pérez de Bustamante, as a result of two years of service in the region.<sup>70</sup> King Felipe IV confirmed Pérez de Bustamante's forestry instruction, originally meant for Cuatro Villas alone, for all of Spain in 1656.<sup>71</sup> So far, this study has focused on the ways that policies from the center changed local level forest management. Sometimes, however, local conditions directly influenced centralized policies.<sup>72</sup>

In 1648, Pérez de Bustamante, a purveyor of armadas, became Superintendent of Forests and Plantations in Asturias and Cuatro Villas. Two years later, he wrote an *Instrucción* on the conservation of forests located two leagues from the sea or a navigable river. In it, he wrote that copies of the instruction “should be made and distributed to the justice and *procurador* of each town council so that nobody could claim ignorance [on

---

<sup>70</sup> AGS, GA, leg. 3309, February 15, 1650, Santander. A copy exists in AGS, Secretaría del Despacho de la Marina (Hereafter, Marina), leg. 571.

<sup>71</sup> Muñoz Goyanes, 113.

<sup>72</sup> For example, in Rentería in 1618, a parish priest presented a series of ordinances aimed to conserve the local forests. One section of the forest would be reserved for the iron works. The rest would be divided into twelve equal parts, identified with numbers and a name of an apostle on stone posts. In any one year, the town could only take from one of the twelve sections, leaving the other sections alone. Philip III approved the ordinance and ordered them to be applied to all municipal forests. The king appreciated the effectiveness of this local plan and hoped it would be effective elsewhere as well. Goodman, 95.

these topics].”<sup>73</sup> He ordered the towns to read the instruction publicly in churches when all the townspeople were together inside. Pérez de Bustamante’s instruction would be the most important forestry document until the 1748 forest conservation ordinance, and would be referred to in court cases<sup>74</sup> and forest policy discussions in government<sup>75</sup> until the 1748 ordinance superseded it. While the frequent appearance of a forestry ordinance might indicate continued noncompliance, the fact that other legislation did not replace the 1650 *Instrucción* for nearly a century warrants a closer examination of its contents.

At its heart, the instruction was a message to forest communities about the benefits that forest conservation gave to everyone, from His Majesty the king to the lowly peasant. If the crown could convince local populations that obeying the superintendent was good for them, the king would face less resistance and improve his timber stocks. This general approach was not new. However, Pérez de Bustamante took it to new levels of sophistication. As he noted, it was important to conserve the forests because, “if those that came before us did not conserve them, they could not be enjoyed by us today. And if we do not conserve them, they will not be available to future generations.”<sup>76</sup> He went on to say, “I do not want to order you to plant more than your customary ordinances demand, but if you do, you will see benefits for yourselves.”<sup>77</sup> He then provided a financial argument to address those concerned with the cost of planting. This was a new approach. He said, “it costs one half a *real* to plant one tree, but after twenty years,

---

<sup>73</sup> AGS, GA, leg. 3309, February 15, 1650, Santander. “Se da copia auténtica a la justicia y procurador de cada consejo para que no puedan alegar ignorancia.”

<sup>74</sup> For example, in the Archivo Real Chacillería, Valladolid, Pl Civiles. Fernando Alonso (F) Caja 2719.0003/2720.0001.

<sup>75</sup> AGS, Marina, leg. 571, 1743.

<sup>76</sup> “Y si los pasados no huvieran conservadolos, no los gozaran los presentes. Y si los presentes no los conservan, no los tendrán los venideros.”

<sup>77</sup> “No quiero ordinar que planten en ellos mas de los que por sus ordenanzas tienen de costumbre: pero si lo hicieren, harán bien para sí mismos.”

without giving it much thought nor requiring any extra exploitation, other than leaving it up to God and the weather, it will be worth 15, 20, or 30 *reales*, plus you would be enjoying the acorns, leaves, and firewood the entire time.”<sup>78</sup> Finally, he said, “Although the trees are planted for His Majesty, the fruit of the trees are to be enjoyed by everyone. When the king needs wood for his vessels, (they are his forests, after all), he pays a reasonable price to encourage vassals to plant, and looking at it this way, although the plantations are the king’s in form, in substance they belong to the vassals.”<sup>79</sup> As a result, he said, everyone should take great care in observing the laws and planting new trees.

Pérez de Bustamante urged all types of forest owners to conserve and enhance their forests. Those that cut down trees without permission would be “castigated with rigor” (“serán castigados con todo rigor”). Such a strong-armed approach came as a response to people abusing permission to cut down trees for various construction projects and personal needs by cutting more than they were granted and leaving many trees cut to the trunks. With the authority given to him by the king in his jurisdiction, Pérez de Bustamante ordered people to obtain a license before making cuts, to gain consent of the town council, and to make cuts in the presence of officials or reliable townspeople to reduce damages to trees. When the council provided a license to cut trees, it was of “urgent necessity” (“con urgente necesidad”) to plant two, three, or more for every one tree removed.

---

<sup>78</sup> “Siendo cierto que un árbol de estos puede tener de costa su plantío medio real, y al cabo de veinte años, sin darle mas caba ni hacerle otro beneficio, sino dejandole a Dios y a las inclemencias del tiempo, vale 15, 20, y 30 reales, ultra de averse gozado en este tiempo el fruto de la bellota, hoja, y leña.”

<sup>79</sup> “Aunque de verdad estos plantíos se hacen para S.M., el fruto de ellos las Republicas lo gozan; y cuando S.M. necesita de madera para sus fábricas, sin embargo de ser los plantíos suyos, paga las mas veces por cada árbol un precio razonable para más animar a los vasallos a plantar, y mirandolos por este lado, aunque los plantíos son de S.M. en la forma, en la substancia vienen a ser de ellos mismos, y así, como tales, los deben mirar para el plantarlos, conservarlos, y aumentarlos.”

He noted that the proper time to make cuts was from the middle of December to the middle of February. Trees cut in these months during a waning moon would be less likely to rot and putrefy than those cut in the hot summer months. Also, more laborers were available in the winter months than during the harvest season of summer.<sup>80</sup> Pérez de Bustamante wrote that it was worthwhile to locate terrain suitable for plantations, or people would waste time planting trees that would fail to grow. He also noted that in the same winter months, but during a waxing moon, people should plant thornbushes to protect saplings from livestock. To help protect the saplings against strong winds, he told people to tie them to stakes and plant them close together, not far apart, so they would help shelter one another. He also urged people to clear the underbrush annually during the two months between the middle of December and February to help prevent forest fires, but not to clear near new saplings, because the underbrush also helped protect the saplings against winds and livestock. Pérez de Bustamante noted that livestock posed a much greater threat than fires, since animals passed through forests nearly every day, whereas fires occurred more rarely. However, he added that justices and officials needed to remain vigilant against the outbreak of fire and they needed to reprimand severely those that caused the fires, or, he said, “notify me and I will do it.”<sup>81</sup>

Pérez de Bustamante stated that each citizen needed to plant two gall oaks every year. He specifically forbade planting chestnut trees, which were not as highly valued by the navy, next to or within gall oak plantations and gave three insightful reasons why. First, the chestnut trees would become the dominant species and prevent the oaks from

---

<sup>80</sup> Vicente, 323.

<sup>81</sup> “Las justicias y oficiales han de estar vigilantes y castigar rigurosamente a los que los causen, o darme noticia para que yo lo haga.”

growing. Interestingly, Jean-Baptiste Colbert's famous French forest legislation from 1669 did not include such a clause, and eventually French officials complained of faster growing trees preventing the growth of young oaks.<sup>82</sup> Second, Pérez de Bustamante argued that owners of the chestnut trees would take the fruit from their trees and then inevitably take material from the municipality's oak trees as well, resulting in fights and disputes. Finally, if people were allowed to plant chestnut trees and oak trees together, people with "bad souls" ("gente de tan mala alma") who sought better terrain for their trees would not hesitate to remove the oak trees to replace them with chestnut trees. In order to avoid such problems, Pérez de Bustamante notified owners of chestnut trees to uproot or cut down their trees within ten days of notification if their trees were next to the gall oak plantations, or else face a penalty of 10,000 *maravedís*.

Pérez de Bustamante also identified goats as serious threats to forest plantations, as they caused much damage, especially to small trees. He ordered the owners of goats to take them to graze in the high sierras where the animals would cause less harm. Goat owners whose herds continued to damage forests would be fined 2,000 *maravedís* the first time, 4,000 the second time, and 10,000 for the third time.

Finally, Pérez de Bustamante reminded people in his jurisdiction to keep a book of accounts and record the oaks that they planted and the ones that they cut down every year, including testimonies regarding the purposes for cutting down trees. The town councils were to place the books in safekeeping for the justices and *regidores* to inspect, since damages to the forests were ultimately their responsibility.

---

<sup>82</sup> See below, 111.

The crown relied on obedient subjects to comply with royal policies, and Pérez de Bustamante worked toward this end by making some strong arguments about the long-term benefits of forest conservation for everyone. For as long as the crown had written forest legislation, it had conveyed a message that forest conservation was important to the population as a whole, but some of the arguments Pérez de Bustamante stated clearly for the first time. He also made clear that those who did not comply would be fined severely. He had the foresight and environmental knowledge to avoid future local level disputes, ordering people to keep oak tree plantations for the king separated from other private plantations. Although he referred to naval shipbuilding specifically only once, the importance of these new forests for the king's navy underlies each point of the Instruction.

### **Early Modern Forest Territoriality in Comparative Context**

To help contextualize the structure and aims of Spanish state forestry, it is instructive to compare similar issues in other places. In this section, I discuss two cases of state forestry efforts from the 1660's. During this period, two of Spain's maritime imperial rivals, France and England, produced landmark documents addressing forest conservation. In 1669, France's finance minister Jean-Baptiste Colbert issued the *Ordonnance des eaux et forêts*, which set the standard for French forestry for decades and had great influence on European forestry in general. In England, John Evelyn wrote *Sylva, or A Discourse of Forest Trees and the Propagation of Timber in His Majesty's Dominions* in 1662 as a response to a request from the Naval Board for suggested

methods to relieve the timber shortage. Reforestation efforts noticeably increased after its publication.

To compare these other cases with Spain, several questions come to mind. What were the state forestry goals and forest legislation in these other cases? How consistent were the central authorities in supporting forest conservation? Did other states territorialize forest resources in similar ways, for example, by focusing on domestic supply, establishing a network of bureaucratic forest superintendents, conducting forest reconnaissance missions, depending on the cooperation of local populations, and dealing with local resistance to centralized policies? The cases show that states responded to timber shortages in different ways, and they created a range of solutions to conserve and expand forests.

While the Spanish crown had been closely involved in forest management for over a century, France and England made few and inconsistent centralized conservation efforts before the 1660's. In France, as in Spain, early legislation on forest use began in the thirteenth century. The most complete forest legislation of the medieval period came in 1376 from King Charles V, which included details on provisioning the navy and other guidelines for stewardship.<sup>83</sup> This legislation regulated the exploitation of forests near Rouen, home to a naval base and galley yards. Most of the early French legislation before the 1660's regulated the use of forests around Paris and in Normandy. However, few French kings were as devoted to naval power as Charles V, so French forests continued to

---

<sup>83</sup> Roland Bechmann, *Trees and Man: The Forest in the Middle Ages*, tr. by Katharyn Dunham (New York: Paragon House, 1990), see Chapter 12.

shrink in the early modern era. Louis XIV's minister, Colbert, remarked in 1662 that his king "had a great distaste for the affairs of the navy."<sup>84</sup>

England had suffered heavy deforestation by the Tudor era, when forests only covered about ten percent of the land.<sup>85</sup> The crown did little to stop the rate of cuttings, and Henry VIII sold most of the forests he confiscated with England's church lands, resulting in further deforestation. Elizabeth I continued to sell forest cutting licenses without strong regulations, causing at least one forest to dwindle from 92,232 oaks in 1560 to 5,896 trees by 1587.<sup>86</sup> Wood sales continued under James I and Charles I, but the civil war and interregnum proved to be even more destructive. By 1660, the Royal Navy depended on a precarious supply of oak from crown lands and private estates.<sup>87</sup>

Deforestation in domestic forests forced both England and France to depend on Baltic pine and fir for masts and at times even oak for hulls. English merchant networks and diplomatic efforts helped maintain their access to Baltic markets, often pushing out the French. In the Mediterranean, the French bought timber from Italy and Albania, but acquiring passports (*firmans*) in Ottoman lands was difficult at times.<sup>88</sup> Both England and France eventually put greater effort into exploiting American forests, but particularly in the case of France, such efforts proved expensive and the timber quality varied.

As in the Iberian Peninsula, French and English authorities developed territorial strategies of timber accessibility that were shaped by geographic realities and

---

<sup>84</sup> Paul W. Bamford, *Forests and French Sea Power, 1660-1789* (Toronto: University of Toronto Press, 1956), 5.

<sup>85</sup> John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: University of California Press, 2003), 221.

<sup>86</sup> Robert Albion, *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862* (Cambridge, MA: Harvard University Press, 1926), 123.

<sup>87</sup> Richards, 226.

<sup>88</sup> Bamford, 104.

technological restrictions. France was well forested and contained several long and navigable rivers. However, it contained few good harbors at the mouths of these rivers and required dangerous coastal transportation, which left timber supply ships open to attack. Only the port of Rochefort sat at the mouth of a timber supply river. The dockyard of Brest was strategically situated near where the English Channel and the Atlantic Ocean met, but it was difficult to supply because of its proximity to hostile navies. On the Mediterranean, Toulon was the most important port, but it also required coastal shipments of timber. In general, timber mostly came from Normandy, the Massif Central, the Pyrenees, and the eastern woodlands of Burgundy.<sup>89</sup>

English dockyards were located almost entirely in the south and along the River Thames. Only a few forests remained dependable sources in the island. These included the Forest of Dean, which supposedly had been a target for the Spanish Armada in 1588,<sup>90</sup> and various oak forests in Hampshire and especially Sussex, all in the south near the dockyards.

The motivations behind John Evelyn's *Sylva* and the French *Ordonnance* were quite similar. In France, Colbert assessed forest conditions and naval timber requirements in the 1660's, limiting forest cuttings until he issued the *Ordonnance* in 1669. He believed that with proper regulation, the forests of France could supply the navy for all its needs. Colbert and a 21-man committee called for forest inspections and set out hundreds of articles to regulate forest management. Relatively few articles directly addressed naval timber, but they gave the navy priority over trees ten leagues from the sea or two leagues

---

<sup>89</sup> Ibid., 49.

<sup>90</sup> Albion, 108.

from a navigable river.<sup>91</sup> Colbert wrote to one of his forest inspectors, “You must reserve all trees that can be transported by navigable rivers, and sternly prohibit the conversion of [great] trees into planks and lesser works...[for it is] of very great consequence to the general welfare of the realm that trees of such location and quality be reserved for the navy.”<sup>92</sup> Officials stamped naval trees with the arms of the king, and masters of waters and forests were ordered to force people to leave at least ten trees on each *arpent* of land to ensure future supplies of seeds and mature trees suitable for shipbuilding.<sup>93</sup> The *Ordonnance* in many ways simply compiled older laws, but this time the legislation had support from a motivated and committed central government concerned with the viability of its naval power.

In England, the Naval Board appealed to the Royal Society to provide recommendations on how to curb the deforestation that was threatening English naval power. Evelyn wrote *Sylva* as a response to this crisis. *Sylva* encouraged estate holders to plant more trees, and the king and parliament supported its message. In 1668, the crown successfully implemented a policy to plant oaks in an enclosed section of over 4,000 hectares in the Forest of Dean. The nature of forest cover in England, however, meant that most of the navy’s domestic timber came from private lands of noble and gentry landowners. Early on, naval officers meticulously searched out dozens of owners and contracted several sales from relatively small lots.<sup>94</sup>

In short, France and England did not make a commitment to forest conservation in the interests of sea power until the 1660’s, when it became clear that having a strong

---

<sup>91</sup> Bamford, 22-3.

<sup>92</sup> *Ibid.*, 19.

<sup>93</sup> As a unit of area, 1 *arpent* was about 1.26 acres.

<sup>94</sup> Albion, 57.

navy was in each state's long-term interest, and that if nothing was done soon, they would run out of timber. Nonetheless, the scope of both Evelyn's *Sylva* and Colbert's *Ordonnance* was broader than anything issued in Spain. That is, the French and English cases treated forests in all parts of the country and did not explicitly limit their territorial scope to forests for the navy. Colbert gave the navy priority in the accessible coastal zone, but most of the ordinance concerned France as a whole. In this respect, both documents were much more ambitious than anything written in Spain, but this may only have led to greater problems of enforcement.

In France, the ability to enforce the *Ordonnance* was limited by its ambitious goals. Paul Bamford wrote of the legislation, "Its significance carried far beyond the confines of naval affairs and bore upon the whole welfare and economic power of French society, reflecting the intention of Colbert and the will of Louis XIV that a great natural resource should be protected and augmented to sustain the power of the monarch and his heirs."<sup>95</sup> Efforts to enforce the reforms made slow progress in some places and very little in others. Naval officers were never able to apply forest law effectively in provincial regions that held on to traditional methods, particularly in the Pyrenees. Enforcement problems also arose from issues of administrative jurisdiction. Forest management in France fell within the jurisdiction of the Ministry of Finance. The navy had no jurisdiction in France's forests but still attempted to exercise forms of surveillance, which caused resentment in the finance ministry when forest inspections led to misdemeanors that were ultimately their responsibility.<sup>96</sup> Since the Ministry of Finance oversaw forest

---

<sup>95</sup> Bamford, 21.

<sup>96</sup> *Ibid.*, 81.

resource management, long-term conservation goals were often sacrificed for immediate financial needs by allowing more frequent and more severe cuts in royal forests.

In England, monopolistic forest contracts for purchasing timber were supported by a Parliament wary of activity that resembled absolute royal power, such as primary authority over all suitable timber for shipbuilding. Over time, the system of purchasing contracts became dominated by powerful intermediaries, eliminating the need for royal naval inspectors to actually visit and inspect the forests. However, corruption in the contract system and monopolistic forest contractors made the enforcement of strong conservation policies difficult.

Despite the broad scope and great length of Colbert's *Ordonnance*, compared to Spanish legislation, it lacked effective reforestation techniques. The French naturalist René Antoine Ferchault Réaumur wrote in 1721 that one of the greatest shortcomings of the 1669 ordinance was that it was "a poor resource for reforesting the realm with full-grown trees."<sup>97</sup> The law failed to provide technical guidelines to replenish forests after cuts. The ordinance does not contain anything like Pérez de Bustamante's restrictions on planting more dominant, faster-growing species in oak plantations. Bamford wrote, "By allowing the exploitation of too many of the older trees, royal regulations actually encouraged invasions of fast-growing *bois blanc*, like birch, that tended to choke out slow-growing hardwood seedlings, and sprouts from the stumps, thus bringing on qualitative deterioration of the growing stock.... The law thus failed, not only to provide for satisfactory reproduction, but also to protect seedlings and young trees when they

---

<sup>97</sup> Ibid., 83-4.

were produced.”<sup>98</sup> In both England and France, there were no guidelines for systematically enforcing plantation quotas, and, unlike in Spain, there was no comparable regular territorial bureaucracy that worked directly for naval interests.

It seems that Spain did not depend on foreign supplies as much as France or England. The Spanish government controlled domestic forested areas more closely than France or England, with a full-time network of forest superintendents and specific territorial jurisdictions. France in the Pyrenees faced resistance against centralized control, but the English Parliament may have represented the greatest resistance to central authority by maintaining the contract system and preventing primary access to forests for the crown. English naval officials maintained the superiority of English oak over all other types, causing an aversion to foreign oak and heavier exploitation of domestic timber. In all cases, the early modern states relied on local populations to carry out state goals, either by planting new trees, managing plantations, transporting timber, or settling new lands. Each state government faced similar technological limitations that made overland transport of timber difficult, and each state had to determine forest accessibility based on specific local geographic conditions. France and England were expanding maritime powers that wound up searching the globe for timber. Meanwhile, Spain had been suffering a century of economic difficulties and saw its relative political power wane. Despite this, the Spanish crown would remain committed to conserving trees and protecting access to forests even in the era of decline at the end of the Habsburg dynasty.

### **Habsburg State Forestry in an Era of Naval Decline**

---

<sup>98</sup> Ibid, 84.

The reign of Spain's Carlos II (r.1665-1700) was characterized by the growing militarism of France under Louis XIV and struggles over influence at the court of the feeble king in Madrid. Carlos was only four years old when his father died in 1665. His mother, Mariana of Austria served as Regent until he came of age in 1675. However, Carlos was the product of generations of inbreeding, and he had shown few signs of being capable of ruling alone by that time. The committee (*junta*) of officials set up by Felipe IV, along with Mariana and her favored ministers, continued to rule. *Don Juan José*, an illegitimate son of Felipe IV, had many years of dedicated service to Spain, including leading the recapture of Barcelona in 1652 and taking part in the setback at the Battle of the Dunes in 1658. It was no secret that he had pretensions to play a central role in government under the new king, his half-brother. His father had excluded him from the governing *junta*, and he believed Carlos had become too dependent on Mariana, leading him to attempt a coup in 1669, which led to the ouster of Mariana's favorite, Father Nithard and *don Juan José's* retreat to Aragón. Mariana and her new favorite, Fernando de Valenzuela began to alienate the nobility and *don Juan José* attempted another coup, this time with success, in 1676. *Don Juan José* had proven to be a skilled leader, and Spaniards placed high expectations on his arrival in Madrid. It was a rather difficult time to be entering royal government, however, since the demographic stagnation of the time made it difficult to supply men for the military, and economic stagnation coupled with famine intensified in the 1670's.<sup>99</sup>

After four years of peace, Spain entered war against France in 1672. Louis XIV had invaded the Spanish Netherlands in 1667, "part of which was held to have 'devolved'

---

<sup>99</sup> See Henry Kamen, *Spain in the Later Seventeenth Century, 1665-1700* (New York: Longman, 1980).

to France through the non-payment of the...dowry [of Louis's Spanish wife]."<sup>100</sup>

Moreover, Louis had felt betrayed by a guarantee of protection to Spain from the United Provinces (Netherlands) and England against further French aggression in Flanders in 1668. Two years later, though, Charles II of England defected to support France, ending the Anglo-Dutch guarantee. In 1672, Louis attacked the Dutch, and the Count of Monterrey, the governor of the Spanish Netherlands, decided on his own to come to the aid of the United Provinces. French victories in parts of the Low Countries, Catalonia, and Sicily, as well as the capture of the Habsburg homeland, the Franche-Comté, led to the peace of Nijmegen in 1678. Juan José felt strongly about the need to make peace with Louis, believing it was in Spain's long-term interest, and he followed up the peace by arranging a marriage between Carlos II and a Bourbon princess, María Louisa of Orleans. *Don* Juan José did not live to see the union, however, and died in 1679.

The 1680's was a peaceful decade for Spain, save for a short war against France in 1683-4, and witnessed effective financial reform and population growth that helped set the country on a road to economic recovery. The war had been a response to continued French bullying of frontier populations of Flanders. France occupied Strasbourg in Alsace and Casale in Mantua in 1681 and invaded Luxembourg in 1683. Spain responded by declaring war without the aid of its former allies. France invaded Catalonia and Flanders and punished Genoa for aiding Spain in the Mediterranean. The French had demonstrated that they had the capacity to wage war on several fronts at once, but when Luxembourg conceded defeat in 1684, France and Spain agreed to seek peace.<sup>101</sup>

---

<sup>100</sup> Stradling, 147.

<sup>101</sup> *Ibid.*, 176.

The next time Louis XIV started a war in 1688, Spain tried to stay out of it. William III's succession to the English throne, and the Dutch and Austrian appeals for help, eventually led Madrid to enter the war in 1690. In the Nine Years' War (1688-97), France invaded Catalonia, Italy, and Flanders again. While France demonstrated a great deal of military power, it was unable to achieve any real victory. By combining naval forces and essentially surrounding France, the allies worked together to achieve peace at Rijswijk in 1697. France maintained its prestige and some territorial gains but restored Barcelona and Luxembourg, hoping to preserve favorable relations with Spain for the impending succession crisis. Carlos's marriages with María Luisa of Orleans and then with Maria Ana of Neuburg had failed to provide an heir, and the king's declining health had captured the attention of the rest of Europe.

Even though the reign of Carlos II was a difficult time for Spanish forces, the regency council and the king himself maintained an active involvement in the conservation and management of Spanish forests. The bureaucracy continued to inspect trees and send reports to the crown, the crown issued new forest legislation, and it ordered new forest reconnaissance missions to find and gain access to new supplies of domestic timber, even in an era of naval decline.

The appointment letter issued to Domingo de Idiáquez in 1601 turned out to be the model for any seventeenth-century forest superintendent of Guipúzcoa. Unfortunately for them, so was the salary. The 800 *ducados* a year remained unchanged for the entire century. An appointment letter from January of 1690 given to *don* Francisco Joseph de Nicolalde for the job of forest superintendent in Guipúzcoa sounds strikingly familiar to

Idiáquez's letter from eighty-nine years earlier.<sup>102</sup> Nicolalde needed to reside in the province, visit twice each year every location two leagues from the sea and along navigable rivers, and inspect the forests with local justices. He was responsible for identifying the locations of new plantations and allocating to different areas the number of trees to plant. He also instructed the people in his jurisdiction to avoid damage from livestock by planting thornbushes around saplings, an idea originally explained by Barros in 1594. When people cut down timber to build houses, churches, or mills, they had to plant two or three new trees in the same location for each felled tree. Nicolalde, like his predecessors, had to gather and record testimonies of plantings made, so the next time he went out for a visit, he took account of whether the justices had complied with the quota. For each tree not planted, the fine remained one *real*. Finally, the superintendent continued to be responsible for issuing subsidies to encourage shipbuilders to produce vessels suitable for the crown to rent in wartime.<sup>103</sup>

Nicolalde replaced his father, who had served for fifty-two years.<sup>104</sup> The continuity and stability of this bureaucratic network was an essential part of Habsburg state forestry in the later seventeenth century. Several letters from bureaucrats in the 1720's, after the Bourbons had replaced the Habsburgs, complained that oversight of forests had become ineffective and indicated that the lull in shipbuilding likely contributed to greater absenteeism in the offices of forest superintendents.<sup>105</sup> It is probable that some superintendents devoted their efforts to other jobs elsewhere

---

<sup>102</sup> AGS, Libros de Registros, Libro 414 (1689-1692), fol. 63-7, "*don* Francisco Joseph de Nicolalde, Superintendente de Guipúzcoa," January 28, 1690.

<sup>103</sup> See Kamen, 115, for evidence of continued ship construction in the Basque regions in the later seventeenth century.

<sup>104</sup> AGS, Libros de Registros, Libro 414, fol.63.

<sup>105</sup> See below, 128-131.

beginning in the later seventeenth century, but it is possible that the War of Succession (1701-14) that established the Bourbons on the throne was more damaging to the management of forests in Spain than the preceding era of naval decline. Instead of dismissing the entire later seventeenth century as irrelevant to state forestry, we have seen that the king continued to receive reports on forest conditions from his forest superintendents.

In fact, in Galicia, royal oversight even intensified. Bureaucrats wrote in the 1720's that Galicia had the most effective forest administration of all, and this was arguably due to forest legislation issued in the later seventeenth century. Galicia had been at the margins of royal forest territoriality in earlier times, being far from the active shipbuilding centers in and around Santander, Bilbao, and San Sebastián. It was the last region in the north to get its very own forest superintendent.<sup>106</sup>

A *real cédula* written in the name of the Queen-mother Mariana of Austria in 1675 to Juan de Paredes, the forest superintendent in Galicia, placed the forests of his jurisdiction under the direct authority of the Council of War and the *Junta de Armadas*.<sup>107</sup> This meant that officials in Madrid, rather than local justices, would now settle disputes over fines and plantations. This was the closest royal involvement in forest management anywhere in Spain up to this point. In order to improve forest conservation in the region, the queen-mother declared that the superintendent had “absolutely independent administrative and judicial power and was subordinate only and directly to the Council of

---

<sup>106</sup> Ojeda served for both Vizcaya and Galicia in 1612, then Juan de Morales replaced Ojeda in Galicia. By then, all other provinces had established superintendents. See Vicente, 343, and Goodman, 262.

<sup>107</sup> I only have a 1743 copy from AGS, Marina, leg. 571, dated February 10, 1675, placed directly after a copy of Bustamante's 1650 *Instrucción*. It is also mentioned in Muñoz Goyanes, 114.

War and Junta de Armadas in Madrid.”<sup>108</sup> The rationale for this change in royal tactics was that heavy deforestation in Galicia had been reported, and forest conservation techniques were not succeeding. The 1675 *cédula* stated that, “The forests are found greatly reduced today... Seeing that this resource is for the common good of the monarchy (for the wood enables the construction of the warships in royal service), this *cédula* gives the necessary measures to achieve the best conservation and expansion of royal forests.”<sup>109</sup> If employed well, the queen believed, the actions outlined in the *cédula* would make local residents stop destroying trees suitable for shipbuilding.

Mariana specified methods of visitations and plantations and the types of cuttings that were acceptable, drawing heavily on precedents set a century before. The *jueces de montes* should visit forests and plantations every year to examine conditions and provide reasonable remedies for conservation problems. Mariana ordered the superintendent to identify and allocate the location and quantity of new trees to plant. The local population was required to have a license issued by the superintendent to undertake any kind of timber extraction. If they damaged trees without a license, they would receive a fine that corresponded to the crime. Mariana ordered the superintendent to carry out visitations in her name in the spring and summer each year. Galicia was larger than the other superintendents’ jurisdictions, so the *cédula* ordered half the forests of Galicia to be inspected one year and half the next. This was a method unique among the provinces of the forest superintendents. “Otherwise,” the queen said, “quality visitations would be

---

<sup>108</sup> AGS, Marina, leg. 571, February 10, 1675, “Declaro que el officio de Juez de Montes y Plantíos de dicho Reino tiene jurisdicción privativa absolutamente independiente en lo formal y judicial y solo es subordinado y dependiente inmediatamente del Consejo de Guerra y Junta de Armadas.”

<sup>109</sup> “Se hallan hoy en gran menos cabo y conviniendo tanto mirar por ella para el bien común de esta monarquía por las maderas que frutifican para la fabrica de los bajeles de guerra en que tanto interesa el real servicio y dar la providencia necesaria a fin de la mejor conservación y aumento de los dichos montes y bosques reales.”

impossible and towns would not have time to execute what you order.”<sup>110</sup> She wanted the superintendent to make his visits during times that were convenient for the farmers, so that he could get the full attention of the towns. The superintendent was to bring a bailiff and a scribe on each inspection to prevent disputes.

Perhaps the most important task ordered was the proper maintenance of the testimony books. In addition to containing information on any new plantations and tree cuttings, Mariana wanted the books to contain information on the forests and districts the superintendent visited, their distances to ports and the closest harbor, navigable rivers nearby, and the towns that were part of the forests. In other words, she wanted testimonies with richer geographical information than had been typical in other regions in the past. The books should also contain a record of the penalties made by the justices in the locations where they worked. The superintendent had the power to issue fines to those illegally cutting trees or setting fires. Finally, Mariana reiterated that any problems with the orders would be dealt with by the *Junta de Armadas* and its treasurer, *don Pedro de Guzmán*.

This *cédula* offered some innovations to Spain’s forest territoriality. Galicia for the first time became the most closely managed region. By the mid-eighteenth century, Galicia became the most important and productive shipbuilding area in the Iberian Peninsula. Perhaps the Habsburgs understood the potential role an area like El Ferrol could play as a strategic naval shipbuilding center. Perhaps the closer management of forests in Galicia in the later seventeenth century contributed to its selection as an important shipbuilding center under the Bourbons. Either way, we see a greater interest in

---

<sup>110</sup> “No se podrian hacer las visitas en la buena forma y con tan perfecto reconocimiento y examen como conviene ni tampoco tener tiempo los pueblos para ejecutar y cumplir lo que en cada visita se dispusiese.”

the region from the crown at this time. The queen-mother asked for more information than her predecessors had, including detailed information regarding the surrounding geography of each forest. Knowledge of nearby ports and navigable rivers could help a superintendent decide if building a road from a certain forest was an economical option, thereby making the process of finding new timber stands more efficient. The general goal remained the same as it had been for the rest of the century: the crown wanted to gain access to the greatest number of forests as quickly as possible and at the least possible cost. Mariana also asked for a report from the head officials of shipyards on the types and sizes of lumber stored in arsenals in Galicia. She encouraged the shipyards' officials to visit and examine the forests that supplied their timber, probably because their expertise would help the crown locate more usable timber in the vicinity.

Many of the rules and directives in the document originated earlier in the century, but its focus on Galicia can be seen as an extension of forest territoriality. As in other regions, in Galicia the crown expressed its dependence on local residents to help conserve forests and make plantations. The legislation also revealed firmer methods to control the population to ensure compliance, including oversight by the combined authority of the superintendent and local officials, more complete written testimonies, and a broader knowledge of suitable forest locations. This occurred at a time when Spanish naval power was in decline, but the crown understood the importance of maintaining access to the supply of a crucial natural resource in bad times as well as good.

Additional legislation from Carlos II in 1694 and 1695 reinforced the jurisdiction of the *Junta de Armadas* over forests with trees destined for royal arsenals.<sup>111</sup> He issued a

---

<sup>111</sup> Muñoz Goyanes, 115.

royal decree in December of 1694 specifying that all forests with trees destined for shipbuilding in Galicia, within the usual two leagues from the sea or a navigable river, fell within the purview of the Council of War and the *Junta de Armadas* directly. About two months later, the king issued a royal order, addressed specifically to the justices of Galicia. It clarified that the districts in which the superintendent had authority corresponded legally to the jurisdiction of the Council of War and *Junta de Armadas*.

Finally, in addition to the continued interest in reports from the bureaucracy and in stronger forest legislation, the crown continued to search for more supplies of domestic timber, particularly pine from Navarre. In 1677, Carlos II approved a plan very similar to the one attempted in 1637 to gain access to the pine trees of Navarre via roads that would take the trees to a tributary of the Ebro River, which would carry them to the Mediterranean Sea and to the arsenal of Barcelona.<sup>112</sup> The earlier venture had failed, but the potential of finding better forests in Navarre or Aragón had led to another expedition. The urgency to remain self-sufficient in shipbuilding materials is apparent.

Forest reconnaissance missions that aimed to extend the resources of the navy, and therefore to extend the territorial range of state forestry, had been carried out multiple times before and would be carried out multiple times in the eighteenth century as well. Notable past ventures included explorations of forests in northern Valencia in 1589 during a frantic period of rebuilding after the Armada against England; notable future ventures included similar explorations in the strategically situated Sierra de Segura (Andalusia) in 1738, which included the sources of both the Guadalquivir River, which flowed to the Atlantic, and the Segura River, which flowed to the Mediterranean. The

---

<sup>112</sup> AGS, Sección Contaduría del Sueldo, segunda serie, legajo 32, asiento with Lorenzo de la Bastide, July 1, 1678, Madrid; mentioned in Goodman, 140.

forest reconnaissance missions of the early modern era thus helped state authorities gain information about unfamiliar areas under its nominal control, extend bureaucratic authority over new resources, and expand its internal transportation infrastructure. The missions were an essential aspect of Spanish forest territorialization in the sixteenth, seventeenth, and, as we shall see, the eighteenth century.

## **Conclusion**

Throughout the peaks and valleys of Spanish fortunes in the seventeenth century, the successive rulers of the monarchy maintained not only an appreciation of the value of forests for state interests, but also an active involvement in conserving forests and ensuring that new plantations could serve future generations. The Spanish government developed a system of forest conservation a century before the French and English and continued to revise the ways it convinced local populations to adhere to this system. Rather than lose interest in forest conditions during a period of naval decline, the Habsburgs oversaw improved administrative methods, enhanced royal authority through forest legislation, and commissioned explorations of potential timber sources within its own borders.

The Bourbons relied on the Habsburg state forestry system for Felipe V's first quarter century of rule, and many naval experts who served under the Habsburgs continued to serve under the Bourbons. Historians seldom question the decline of the Spanish navy in the later Habsburg period, and they rarely connect the Bourbon naval renewal of the early eighteenth century to Habsburg precedents. However, the bureaucracy and forest legislation of the seventeenth century helped lay the groundwork

for the Bourbon naval renewal by creating and maintaining state access to strategic forests. The deforestation of the sixteenth and early seventeenth centuries, caused mostly by demographic and military expansion, has led some historians to conclude that the decline in shipbuilding from the middle of the seventeenth century until about 1730 meant that Spanish forests experienced a period of ecological reprieve. However, legislation that gave the crown primary access to shipbuilding timber in the later seventeenth century ensured that there was no corresponding political reprieve. The crown supported and enhanced its system of forest management near shipbuilding centers even during a period of shipbuilding decline.

On November 1, 1700 Carlos II died without an heir and war broke out over the Spanish succession. Carlos had named Philippe of Anjou, Louis XIV's grandson, as his successor, but England, Austria, the United Provinces, and other states feared a unification of Spanish and French power in western Europe. Spain relied on the French navy during the war, but participation of Spanish mariners who had also served the Habsburgs would be crucial to the successful transition to Bourbon power in Spain, including power over the management of forests under the new regime.

## Chapter 4 – Internal Expansion, Forest Reconnaissance, and Dynastic State Territoriality under the First Bourbon

*Doña Catalina de Pando* awoke in the middle of the night on October 7, 1740, to the sound of her neighbor chopping down a tree near her house. She and her children got out of bed, opened their windows and doors, and started pelting Juan de Cuero y Arce with stones. Cuero and his accomplice managed to finish the job, removing the tree that Cuero claimed was getting in the way of his garden. The sizeable oak tree that shaded Catalina's house in Selaya, in the northern province of Cantabria, was gone.<sup>1</sup>

In an earlier time or in a different region, a town council might settle the dispute arising from that evening's disturbance and the removal of a single tree, as they traditionally had done in previous centuries and in different forested areas of Spain. This dispute, however, not only wound up at the Royal Chancellery Court in Valladolid, northern Spain's highest court of appeals, but also involved the most prominent Spanish administrators of the day, including the Marqués de la Ensenada.<sup>2</sup> *Doña Catalina de Pando*, a widow, charged *don Juan de Cuero* with removing a tree suitable for shipbuilding in the royal dockyards of Guarnizo, located only a few miles away to the north. Such an act was potentially damaging to naval interests, and Catalina de Pando, acting in the name of royal service, directed the attention of *Comisario de la Marina, don Manuel García Gómez* to the matter. Catalina de Pando and Juan de Cuero's case, which

---

<sup>1</sup> Archivo General de Simancas (Hereafter, AGS), Seretearía del Despacho de la Marina (Hereafter, Marina), Legajo (Hereafter, leg.) 553, Guarnizo, June 15, 1741, Jacinto Navarrete. Other documents related to this case are in the same legajo.

<sup>2</sup> Local forestry disputes often wound up at Spain's chancellery courts but typically involved issues of jurisdiction of entire forests and involving entire towns rather than single trees.

did not settle until 1743, demonstrated that by the middle of the eighteenth century, high imperial defense concerns played a central role in local neighborly disputes and *vice versa*.

The context of coastal forest management had changed significantly between 1700 and 1740. During the War of Spanish Succession (1701-1714), Spain had no significant naval forces of its own, and depended on the support of the French. The Spanish Bourbons did not want to be dependent on the French for long, however, and aimed to develop Spain's ability to defend its empire and to restore its *reputación* on Europe's political stage. By the end of the reign of the first Bourbon king, Felipe V (r.1700-1746), the government's administrative reforms led to considerable changes in forest territoriality. Purchases of foreign materials continued, but self-sufficiency became more important than ever, as reflected in royal policy.<sup>3</sup> Perhaps it seems counterintuitive for sea power and maritime affairs to drive the internal expansion of state power into the sylvan sierras of Spain, but Felipe V's reign witnessed the extension of naval bureaucratic oversight to new regions, including to some located over one hundred miles from the sea. In addition to an expansion of territorialization in the Iberian Peninsula, ministers controlled forests more closely, including those near the productive shipyard in Havana, Cuba.

Not long after the War of Succession, top officials in the Spanish navy, such as Nicolás Manrique and Antonio Gaztañeta, informed Madrid of worsening conditions in

---

<sup>3</sup> For histories of the early Bourbons, see John Lynch, *Bourbon Spain, 1700-1808* (Oxford: Basil Blackwell, 1989), Henry Kamen, *The War of Succession in Spain 1700-1715* (London and Bloomington, 1969), Henry Kamen, *Philip V of Spain: The King who Reigned Twice* (New Haven: Yale University Press, 2001), Ricardo García Cárcel, coord., *Historia de España siglo XVIII: La España de los Borbones* (Madrid: Cátedra, 2002), Ramón Menéndez Pidal, *Historia de España, tomo XXIX: La época de los Borbones – La nueva monarquía y su posición en Europa (1700-1759)* (Madrid: Espasa-Calpe, 1985).

the forests along the north coast, due mostly to a lack of administrative oversight. They argued that the condition of Spain's forests reflected the condition of Spain itself in the sense that without healthy forests, there would be no national security, no trans-Atlantic commerce, and continued dependence on foreign nations for support. A nation-wide search for forest resources unfolded in the years 1737-1739, resulting in a significant increase of geographic knowledge and an expanded presence of the crown in forest communities, particularly through the reconnaissance missions by Juan Valdés y Castro in virtually unknown regions of Andalusia and Catalonia. The reign of the first Bourbon, therefore, brought the first systematic assessment of accessible forests on a national scale.

The Bourbons extended and intensified forest territoriality shortly before the publication of the era's most comprehensive forest legislation in 1748.<sup>4</sup> The prolific period of naval construction in Spain during the second half of the eighteenth century has affected the ways scholars have studied Spanish forests.<sup>5</sup> Most of the scholarly attention given to forests and sea power takes the 1748 naval forest conservation ordinance as the starting point for studies on state forestry in Spain. However, the territorialization of forest resources helped to make Spain's naval construction in the second half of the eighteenth century possible. Despite this reality, scholarship lacks a serious study of the historical context of forestry and Spanish sea power leading up to the 1748 ordinance.

In what follows, I analyze descriptive reports, correspondence, and tabular data generated by naval bureaucrats during various forest reconnaissance missions that expanded state forestry under the first Bourbon king. The documents reveal significant

---

<sup>4</sup> *Novísima recopilación de las leyes de España*, tomo III, libro VII, título XXIV, ley XXII, 516-523.

<sup>5</sup> Towards the end of the 1700's, the navy employed 65,000 men and operated 64 ships of the line, 40 frigates, and 100 lesser vessels. See Carla Rahn Phillips, "'The Life Blood of the Navy': Recruiting Sailors in Eighteenth Century Spain," *The Mariner's Mirror* 87, No. 4 (November 2001) 420-445.

continuities to state forestry in Spain, while revealing equally important changes. The primary aim of state forestry in the early eighteenth century continued to relate more to dynastic state goals of naval self-sufficiency than to mercantilist, commercial, or scientific forestry revenue. Scholar James Scott wrote, “The early modern European state, even before the development of scientific forestry, viewed its forests primarily through the fiscal lens of revenue needs.” I argue that this is not true for Spain at this time, and that the navy’s concerns for shipbuilding timber primarily directed state forestry policies.<sup>6</sup>

The foreign policy ambitions of King Felipe V and his second wife, Queen Isabel Farnese, conditioned the government’s approach to forest resource control. The period of greatest urgency for locating new supplies of domestic timber, for example, came during a period of imminent war with Britain. The functionality of coastal woodlands for state interests remained essentially the same since the late sixteenth century. That is, the monarchy sought control over forests that were accessible and useful for naval shipbuilding. The restrictions in geography and technology that defined accessibility remained the same as those in the sixteenth and seventeenth centuries. As a result, it is important to treat the early decades of Bourbon rule in much the same way as the era of Habsburg state forestry, but scholarship often treats Bourbon forest conservation as part of a new and distinct era of enlightened reforms.<sup>7</sup>

---

<sup>6</sup> Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed* (New Haven: Yale University Press, 1998), 11-12.

<sup>7</sup> See, for example, Carlos Tarazona Grasa, *La Guardería Forestal en España: Conservación de nuestros bosques a través de los tiempos* (Barcelona: Lunwerg, 2002); and Luis Urteaga, *La tierra esquilhada: Las ideas sobre la conservación de la naturaleza en la cultura española del siglo XVIII* (Barcelona: Serbal, and Madrid: CSIC, 1987).

The most distinctive aspect of state forestry during the reign of Felipe V was the systematic effort to gather information on forest conditions throughout Spain, which extended the royal bureaucracy into forest communities unfamiliar with its presence. Forest superintendents repeatedly called such measures necessary for the public well-being, saying that to rebuild Spain's navy required unprecedented measures such as the elimination of local liberties and the participation of everyone, regardless of title or traditional exemption, in meeting planting quotas and in remaining vigilant over new plantations. The chief minister, *don* José Patiño (d. 1736), took steps toward creating a unified national approach to resource management by creating a new political geography for naval administration. Reports from reconnaissance missions requested by the Marqués de la Ensenada beginning in 1737 generated a new phase of dynastic state territoriality by describing new forests, outlining management procedures, expressing ways to categorize and record forest resources, and defining regulations for local communities that were intended for all of the forests of Spain.

### **Voices from the North Coast**

Spain's north coast remained the main shipbuilding region in the eighteenth century. Local conditions in the forests of the region had influenced royal policy many times in the past, most notably in 1656 when Felipe IV adopted Toribio Pérez de Bustamante's Instruction for Cuatro Villas as a nation-wide policy. That same year, one of Spain's most notable seamen, Antonio Gaztañeta, was born in a seaside town in Guipúzcoa. Gaztañeta would go on to be a distinguished mariner and ship builder for the Habsburgs as well as the Bourbons; he commanded fleets under both dynasties. In 1702,

he became a superintendent and inspector of forests in Cantabria. In 1717, he became the director of the new shipyard in Guarnizo. While there, he played an important role in revising regulations for naval recruitment.<sup>8</sup> The British captured him at the Battle of Cape Passaro in 1718, but he returned to Spain and achieved the rank of *Teniente General* (Lieutenant General) in 1720. Based on a lifetime's experience, he wrote multiple treatises that revised accepted notions of ideal ship configurations.<sup>9</sup> A *real cédula* from 1721 made his rules for ship construction the official rules throughout the monarchy. By the early 1720's he knew the conditions of Spain's most active shipbuilding region better than anyone else.<sup>10</sup>

In addition to all he had to say about ship construction, naval recruitment, and piloting, Gaztañeta expressed ideas about forest conservation in Spain. In a letter sent to Spain's top minister, *don* José de Grimaldo, on July 18, 1723, he gave an account of continuous illicit cuttings made in the forests near the Basque town of Aramayona. He warned that if no one had a prompt remedy, the king would find himself without a single valuable oak tree. Gaztañeta feared that such illicit activities required the effective enforcement of extraordinary regulations to be applied within one year to all of the monarchy's maritime provinces.<sup>11</sup>

---

<sup>8</sup> Phillips, "Recruiting Sailors," 425.

<sup>9</sup> Carla Rahn Phillips, *The Treasure of the San José: Death at Sea in the War of the Spanish Succession* (Baltimore: Johns Hopkins University Press, 2007), 19.

<sup>10</sup> José Merino Navarro, *La armada española en el siglo XVIII* (Madrid: Fundación Universitaria Española, 1981) and Didier Ozanam, "La política exterior de España en tiempo de Felipe V y de Fernando VI," tr. José Luis López Muñoz in Menéndez Pidal, Ramón, Dir. *Historia de España, tomo XXIX: La época de los Borbones – La nueva monarquía y su posición en Europa (1700-1759)* (Madrid: Espasa-Calpe. (1963-) 1985), 441-699.

<sup>11</sup> AGS, Marina, leg. 552, Gaztañeta to Grimaldo July 18, 1723. "...en las Provincias Marítimas de estos Reinos, que año tomarse alguna eficaz y extraordinaria providencia succederá infaliblemente, lo que recela *don* Antonio Gastañeta."

Other prominent ministers from northern Spain shared and expressed similar concerns. The Marqués de Villareal, the Superintendent of Forests in the Señorío de Vizcaya, reported that failure on the part of the *señorío's audiencia* to address complaints of abuse by local inhabitants had led to continued injustices in the forests.<sup>12</sup> Villareal proposed stronger regulations and laws, along with harsher penalties for abusers in the region in order to stop the destruction. He said that annual forest inspections would provide valuable information about the rate of deforestation over time, which would help the authorities assess the problem and reduce the abuse.<sup>13</sup> *Don* Vicente de Velasco, a *visitador* (inspector) in Cuatro Villas and Asturias, wrote about resistance and complaints from several communities in Asturias that argued crown regulations on planting quotas and cutting restrictions abused their traditional liberties and exemptions.<sup>14</sup> In August of 1723, a treasurer named Nicolás Manrique de Lara advised the government to rectify excessive abuses committed in the forests of Navarre and near the border with France.<sup>15</sup>

While these officials from Asturias to Guipúzcoa had different ideas regarding the root causes to the problem, they all believed that the crown needed to curtail abuses in the navy's most valuable region of forestry resources. Gaztañeta thought that a combination of unruly locals and bad weather had contributed to the abuses he observed. Villareal laid the blame on an ineffective *audiencia*. Manrique blamed a lazy and incompetent class of royal bureaucrats, who had become used to inheriting their offices. All proposed that

---

<sup>12</sup> *Audiencias* were courts of appeal. The highest courts of appeal were the *Chancillería* courts in Valladolid and Granada, but other regions in Spain and possessions outside Spain had subsidiary *audiencias*.

<sup>13</sup> AGS, Marina, leg. 552, De oficio, Madrid, 27 August 1723, Consejo de Guerra.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*

Spain needed greater observation of forest activity and stronger enforcement of regulations, but only one of them spelled out in detail what he thought would work.

Based on this flurry of letters from concerned ministers, *don* Nicolás Manrique composed a document of seventy-seven points addressing the principal aspects of forest and plantation conservation, forest visitations, and proper cutting methods in the manner best suited for building naval vessels. He sent his document to Grimaldo and the king, including a copy of Pérez de Bustamante's instruction from 1656. There is a good chance that Nicolás Manrique de Lara had some relation to Manrique de Lara, the Viceroy of Catalonia who oversaw the 1589 inspection of forests in the borderlands between Valencia and Catalonia.<sup>16</sup>

Manrique divided his seventy-seven points into eight sections. The first twelve points served as an introduction. In referencing the concerns of Gaztañeta and the other ministers, he began by describing the poor conditions of the kingdom's forests. He argued that no one was doing anything to stop the usurpation of forests by the local population. He said that all of this is damaging to "Your Majesty and the public interest," and if they "do not attack the disorders of the region promptly, ...before you know it, Your Majesty will find himself without one venerable oak tree in the entire peninsula."<sup>17</sup>

Manrique had harsh words for the ministers who had been allowing such abuses. He named *don* Vicente Velasco, the *visitador* of valleys in the Cuatro Villas region as someone who superficially imposed fines but did not ensure that villages fulfilled

---

<sup>16</sup> Ibid., *don* Nicolás Manrique, Madrid, 27 August 1723.

<sup>17</sup> Ibid., article 1. "Siendo todo lo referido en tan gracie perjuicio a S.M. y de la causa pública, que si promptamente no se atajen tales desordenes con leyes providencias y castigos, quando menos se piense se hallará S.M. sin un roble en toda la Peninsula de que pueda valerse en llegando el caso de necesitarlo como repetidas veces ha hecho presente *don* Antonio Gastañeta"

planting quotas. Vizcaya had an able minister in the Marqués de Villareal, but he had been too busy serving the king in his other position as *teniente* (lieutenant) to stop abuses. In Guipúzcoa, Gaztañeta had cited problems in Aramayona, but Manrique claimed similar abuses were occurring in other places in the province. Galicia, by contrast, seemed to be in good shape under the veteran *don* Joseph Bermúdez de Castro. Álava, Navarre, and Catalonia contained vast forests suitable for shipbuilding, but they had been without a superintendent, leading to unchecked abuses in the region.<sup>18</sup>

Manrique claimed that only immediate enforcement of forest regulations, inspections, and fines could help the king. He said the construction of ships for war and commerce depended on these forests, which protected the monarchy from its enemies. In addition, forests and their resources were “venerated by everyone [for their] pasture and protection of livestock, [their fuel for] factories of iron and carbon, [their building materials for] temples, houses, bridges, mills, and other necessary materials that establish a happy Kingdom.”<sup>19</sup> Overall, he said – in perhaps his most important point – the regeneration of these forests would enable the Treasury to stop buying costly foreign ships. The king could find all he needed within his own kingdom, and he could choose the best trees at a low cost. To Manrique, this goal required the inclusion of all forests, not just royal forests. He said that although it might appear contradictory to the liberty and nature of the area to prohibit people from doing whatever they wished in the forest, it would not be unjust to ensure the conservation of the forests and to apply severe penalties to those who destroyed valuable trees. He reemphasized that this approach was in the

---

<sup>18</sup> Ibid., articles 3-7.

<sup>19</sup> Ibid., article 9. “...venerado de todas las naciones el Pasto y abrigo a los ganados, las fabricas de ferrerias y carbon, las de templos, casas, puentes, molinos, y otros utensilios necesarios a la vida que constituyen feliz aun reino.”

public interest; the king's uses of the forests were for the benefit of everyone.<sup>20</sup> In order to improve conditions, Manrique wanted to establish forest visitations to conserve and foment plantations, prevent further cuttings and extractions, facilitate the transportation and sale of wood, and regulate the cuttings.

The remaining sixty-five points explained how these goals should be accomplished. In the section, "Methods to prevent damages and assert regulations," Manrique repeated Gaztañeta's recommendation that a judge and two foremen should accompany the *visitador* of each province to inspect each forest's "fertility, distance to the sea or navigable river, abundance of, and quality of oaks, beech, ash, pine, walnut, alder, and other [trees] useful for vessels."<sup>21</sup> To make the timber extraction more affordable in the long run, Manrique called for a commitment to improve transportation to the shipyards from the mountains.<sup>22</sup> Several points deal with protecting new plantations, which were the most vulnerable to disturbances.<sup>23</sup> Judges needed to ensure that laborers planted new trees intended for the navy in areas conducive to healthy growth, for example, not exposed to heavy winds, but still near rivers and ports, while separately designating plantations that ironworkers would eventually use for fuel. Judges should provide oversight through annual inspections and appoint two or more guards to protect the new plantations on a day-to-day basis.

---

<sup>20</sup> Ibid., articles 10-12.

<sup>21</sup> Ibid., article 13. "Medios para precaver los daños y asegurar los providencias...Haga visita de ojos muy particular de los montes a cada una de estas partes, sus situaciones, fertilidad, cercanía a la mar o rios navegables, abundancia y calidad de los robles, ayas, fresnos, pinos, nogales, alisos, y otros que a les quiera a como dados a la construcción de bajeles."

<sup>22</sup> Ibid., article 14.

<sup>23</sup> Ibid., articles 15-21.

The third section of Manrique's report included ideas regarding the "Mode and Form of Provincial Visits."<sup>24</sup> This section exemplified a form of early modern forest territorialization in the ways that Manrique identified territory, outlined monitoring techniques, described methods of categorizing and quantifying resources, and recommended rules for controlling behavior at the local level. Primarily, every valley that fit the specific geographic criteria of accessibility had to be required to allow inspections by *visitadores*. Private forests and village commons that sloped to the coast or were near navigable waterways were not exempt. Provinces from Álava to Tortosa needed to install new *visitadores*, because the vast forests of the region had been without them for an extended period. A new *visitador* could not simultaneously serve as *teniente*, which would interfere with his duties, unless he received approval for a proper substitute. Manrique wanted the inspections to be brief, but thorough, so that the *visitador* could see every new forest plantation. The *visitador* would be required to record the planting obligations of each community, the number and quality of the trees, remark on any illicit cuttings or usurpations, and identify the culpable parties. *Visitadores* had to reprimand criminals promptly, but no longer could they penalize towns or communities in general. They had to name specific parties as those responsible for damages.

Manrique noted that valleys contained about twenty or thirty towns, and in many instances, the people were poor and needed to leave the valley to find seasonal work elsewhere. The annual flight of the population made planting quotas difficult to achieve for town officials such as the *alcaldes* (mayors) and *regidores* (town councilors). Manrique declared that plantation quotas had to be a priority before people left the valley.

---

<sup>24</sup> Ibid., articles 24-35. "Modo y forma de las visitas provinciales."

If the villages did not meet requirements, the *alcaldes* and *regidores* had to answer to the *visitador*. Officials had to send visitation reports to the *Consejo de Guerra* and send the Secretary of the Navy reports on fines and appeals.

In his conclusion, Manrique said he had stepped outside his specialty as a treasurer to report on matters perhaps better suited for a mariner or farmer, but he was certain he was doing a service to the royal and public interest. He offered...

“...just and suitable measures to achieve goals of the utmost importance and extinguish once and for all the damages and clearings experienced over the past two centuries, recognizable in the *consultas*, *instrucciones*, and *providencias* that have been given to stop them, especially the *pragmáticas* and laws from the Catholic Kings in 1480 and 1496, from *don Carlos* in 1537 and 1548, and *don Felipe III* in 1609. Given that such disorders and injustices against the public well-being continue, extraordinary remedies through penalties, fines, and condemnations are required, because crimes that are indulged persuade and encourage delinquents to continue.”<sup>25</sup>

As part of his plea, Manrique pointed out that trees take a long time to grow, and during the long early stages they are very delicate. While people can use timber and fruits

---

<sup>25</sup> Ibid., article 74. “Conclusión del Papel: Esto es lo que al fiscal ha parecido hazen presente al consejo para que siendo servido lo ponga en la Real noticia como medios que a juzgado los mas proporcionados para conseguir fines de tanta importancia , y que se exterminen de una vez las talas y rozas que por más de dos siglos se han experimentado como se reconoce de las consultas, instrucciones, y providencias que se han dado para atajarlas; y en especial de las Pragmáticas y Leyes Incorporadas en la Recopilación y ordenadas a este asunto por los Reyes Católicos en los años de 1480 y 1496, *don Carlos* en el de 1537, y 1548, y *don Felipe* tercero en el de 1609. Y siendo tan inveterado el mal tan continuos estos desordenes y tan perjudiciales a la Pública Causa se haze preciso sean extraordinarios los remedios de penas, multas, y condenaciones; porque los delitos con el disimulo se persuaden y se alienta a los delinquentes a que los continuero y la cortedad de penas, por no equivaler a las utilidades que consiguen de sus excesos tampoco puede ser remedio que los ataje.”

for various things after only a few years, it takes longer than fifty years of observation and management for trees to become suitable for naval uses. Therefore, he said, the trees that he and others benefited from in the present were there because of careful conservation in the past, echoing the words of Toribio Pérez de Bustamante from seventy-three years earlier. It was up to everyone in the present to care for the trees that would benefit future generations.<sup>26</sup>

In a period of recovery after the War of Succession, Spanish ministers made clear the distressing state of forestry in northern Spain. Manrique, Gaztañeta and others viewed the local populations as incapable of seeing the big picture the way they could. In some ways, however, they were sympathetic to what they considered the shortsighted focus of local residents, understanding the value of forests for their everyday lives. They also did not lay all the blame on local villages. Manrique seemed to be more concerned about an ineffective administration than an unruly peasantry, accepting that locals would continue to destroy the forest if the crown did not prevent them. To Manrique, the cutting of trees for naval shipbuilding, by contrast, would not be damaging to the forests, since such activity would be selective and closely monitored. He believed that the War of Succession had left northern Spain with a lack of effective oversight for its forests, perhaps with the exception of Galicia. The decade after the war had shown few signs of recovery of forest management control. By 1726, however, forest ministers saw someone who held their interests in high esteem rise to power at the Bourbon court.

### **Patiño's Tenure and the Formation of the *Almirantazgo***

---

<sup>26</sup> Ibid., article 76.

José Patiño became the *Intendente General* of the navy and President of the Tribunal of the House of Trade on January 28, 1717. Cardinal Giulio Alberoni, Spain's top minister of the time, bestowed numerous powers on Patiño in these posts, including the administration of plantations and forests. That year, Patiño placed Gaztañeta in charge of the Guarnizo shipyard, which would become Spain's most important shipyard for the early eighteenth century. More ships came out of Guarnizo than any other site in the peninsula between 1715 and 1759.<sup>27</sup>

Patiño pursued a long list of naval reforms related to naval recruitment, arsenals, and primary resources, but Alberoni's foreign policy ambitions would not allow Patiño a chance to carry out all his plans. Patiño may have been an administrative reformer, but he was primarily a servant of the state who worked for the interests of the king and queen.<sup>28</sup> Queen Isabel Farnese exercised great influence over Spain's foreign policies. Alberoni, who had helped arrange her royal marriage, worked closely with her on devising plans to recapture the Italian possessions lost at the Treaty of Utrecht (1713) so that her sons could have a proper inheritance. First on her list were Sardinia and Sicily. Alberoni told Patiño to arrange a *flota* for the expedition to the Italian islands in 1717. Patiño abandoned his administrative plans in order to buy foreign ships and prepare merchant vessels for war. He managed to assemble twenty-two *navíos* in 1717 and forty in 1718. Patiño placed Gaztañeta in charge of the fleet, which left from Barcelona. The activity stirred the British navy into action in the Mediterranean, leading to a surprise attack off Cape Passaro, Sicily, on August 18, 1718. Spain's poorly prepared fleet was nearly wiped out, while Gaztañeta was taken prisoner. Things only got worse for Spain the following

---

<sup>27</sup> Ozanam, 489.

<sup>28</sup> Lynch, *Bourbon Spain, 1700-1808*, 91.

year, with a defeat at Messina and a combined French and English invasion of Spain itself. England invaded Galicia, and France crossed the border into the Spanish Basque region, destroying ship construction sites in Pasajes and in Santoña near Santander. The series of disasters and a new Quadruple Alliance of England, France, the Dutch Republic, and Austria against Spain led to Alberoni's ouster.

Patiño retained his posts but did not yet move up in the bureaucratic hierarchy. The queen's ambitions did not subside after the War of the Quadruple Alliance, and she sought to make a deal with Austria for a favorable marriage arrangement for her sons and the acquisition of Tuscany, Piacenza, and Parma. Johann Wilhelm, known as Baron Riperdá, once a Dutch ambassador sent to the court in Madrid, rose in power by sticking close to the queen and devoting himself to Spanish government. The queen sent Riperdá to Vienna to negotiate a treaty with Austria in 1725. The agreement with the emperor proved unfavorable to Spain, granting Austria major commercial concessions in return for only vague promises of a marriage to one of the emperor's daughters and support to recapture Gibraltar. While the monarchs did not see the treaty as all bad, other powerful Spaniards called for Riperdá's ouster. The Baron sought shelter with the English in Madrid, but the Spanish arrested him and imprisoned him in Segovia.<sup>29</sup>

The bold ambition of Alberoni and the foolishness of Riperdá failed to reestablish a favorable reputation for Spain in Europe. José Patiño aimed to build a solid foundation for naval power and renewed respect for Spain, and the king and queen gave him his chance in 1726, naming him the Secretary of the Navy and Indies in May and of the Treasury in November. In 1731, he became the head of the Department of War, and in

---

<sup>29</sup> For events in this period, see Lynch, *Bourbon Spain, 1700-1808*, 73-89; Kamen, *Philip V*, 119-138; and Ozanam, 573-604.

1733, he was formally recognized as the Secretary of State, a job he had been performing in effect since 1728.<sup>30</sup>

During Patiño's tenure, which lasted until his death in 1736, Spain acquired more than fifty warships, alarming the British ambassador Benjamin Keene. Spain held its own in a war with Britain in 1726-1728, took the strategic outpost of Oran in 1732, and invaded Naples and Sicily in 1734, securing for the queen's son, Charles, an Italian kingdom. Most importantly for the administration of Spain's forests, Patiño created a new naval political geography to organize the administration of naval resources. To carry out his goals, he created three Departments, with headquarters in Cádiz, Ferrol, and Cartagena. Patiño had plans to build technologically advanced arsenals in each to meet the demands of naval construction. A similar arsenal would be built in Havana, Cuba, a shipyard that would become the most productive in the entire monarchy during the first half of the century.<sup>31</sup>

Patiño's death left a power vacuum, and his posts went to several different ministers. The king filled part of the void by creating a new institution, the *Almirantazgo*, or Admiralty, on March 14, 1737. Based partially on the English Admiralty, the King intended it "to help coordinate the revitalized registration drive for naval recruitment" and placed his son, Prince Felipe in charge as the *Almirante*.<sup>32</sup> The secretary of the *Almirantazgo* was *don* Cenón de Somodevilla, the Marqués de la Ensenada. Ensenada

---

<sup>30</sup> See Lynch, *Bourbon Spain, 1700-1808*, 90-98; Ozanam, 459-460 for details on Patiño; also Ildefonso Pulido Bueno, *José Patiño: El inicio del gobierno político-económico ilustrado en España* (Huelva: I.P. Bueno, 1998).

<sup>31</sup> Ozanam, 489.

<sup>32</sup> Phillips, "Recruiting Sailors," 425. The citation is from the Archivo General de la Marina, Viso, Reales Órdenes, Cádiz, Legajo 6457, document dated March 14, 1737. The prince was not the first in line to succeed his father. Felipe was the younger brother of Carlos, the future Carlos III. Both brothers were sons of King Felipe V's second wife, Isabel Farnese.

had worked his way through the bureaucracy under Patiño and gained his title of nobility after organizing the expedition to Naples in 1734.

By 1736, Spain had recaptured Naples and Sicily, territories lost in the War of Succession, and had a standing navy of thirty-four ships of the line, nine frigates, and sixteen lesser ships.<sup>33</sup> This demonstrated an impressive expansion, despite several years of war. The British increased their complaints about Spaniards harassing their merchant shipping in the Caribbean. By April of 1738, the British ambassador in Madrid was demanding compensation for damage done to English shipping.<sup>34</sup> The memorable example of Captain Robert Jenkins exhibiting his severed ear in a jar to the House of Commons in 1738, sliced off seven years earlier by the Spanish as punishment for encroaching on Spain's claimed monopoly in the Caribbean, fanned the flames of war hysteria in England and led to the War of Jenkins' Ear. England's decision to fight a preemptive war with Spain in 1739 indicated the effectiveness of Patiño's policies to increase Spanish naval power and overseas commerce.

For Spain, however, this was not a good time for conflict with Britain. While the navy had come a long way, it was far from equal to the size of the British navy. The years 1734 to 1739 delivered the century's severest subsistence crises in the Iberian Peninsula, and in 1739, the crown declared bankruptcy and rescheduled its debts.<sup>35</sup> In short, the state of Spanish resources on the eve of war with Britain was dire. It was becoming more crucial by the day for the government to become self-sufficient with affordable, accessible war supplies, principally timber for shipbuilding from Spain's forests.

---

<sup>33</sup> Lynch, *Bourbon Spain, 1700-1808*, 129.

<sup>34</sup> Kamen, *Philip V*, 207.

<sup>35</sup> *Ibid.*, 209.

In the early eighteenth century, more often than in the early seventeenth century, deforestation in the regions accessible to the navy stalled shipbuilding operations or forced the government to purchase foreign timber.<sup>36</sup> In responding to the problems of increased deforestation, and in ensuring the continued expansion of naval construction, the government would rely heavily on administrators in the three naval districts created by Patiño.

### **Forest Reconnaissance: Department of Ferrol**

Scholars may be familiar with the role of the *Almirantazgo* in naval recruitment, but its role in gathering information on forests is not widely known. Within the first three years of the *Almirantazgo*, Prince Felipe and Ensenada sent several direct orders to superintendents and other forest inspectors to conduct reconnaissance missions in accessible forests for trees suitable for shipbuilding, and to report back to Madrid or to their department's *intendente*.

In a letter sent in March of 1738 to *don* Juan de Revollar, the superintendent in Cantabria, Ensenada stated that the *Almirante* needed to know about the forests along the coast in this very important region, “because the forests grown in this region have never failed the king (in their use in shipbuilding).”<sup>37</sup> Revollar sent a report in December and added some of his own ideas on how to stop abuses.<sup>38</sup> The *Almirante* contacted *don* Juan de la Pedrueca, in charge of Cuatro Villas, for a report on the condition of forests in his

---

<sup>36</sup> Extensive commentary and information on the topic of timber shortages in Cádiz in 1738 from *don* Ciprián Autrán and *Intendente* Francisco de Varas y Valdés can be found in AGS, Marina, leg. 553.

<sup>37</sup> AGS, Marina, leg. 552, Madrid, 12 March 1738, from the *Infante Almirante* to *don* Juan de Revollar in Cantabria. “Porque nunca falta al Rey madera criada en esos montes.”

<sup>38</sup> *Ibid.*, Avilés, December 27, 1738, from *don* Juan de Revollar, “Acompaña relación del estado en que se hallan algunos montes de barios consejos que a reconocido en aquél principado proponiendo algunos abusos dignos de remedio.”

region. He had to delay his response because he was away at Guarnizo.<sup>39</sup> He did answer, however, to an inquiry by the *Almirante* on the timber gathered at the port of La Chata.<sup>40</sup> A few years earlier, he had written a ten-page report on fires and other damages that occurred in the forests of the region, an issue that also affected the nearby royal iron foundries of Liérganes and La Cavada.<sup>41</sup>

That same month of March, 1738, the *Almirante* asked for a report on the forests of Galicia and on the timber sitting in the arsenal of La Graña, the precursor to the state-of-the-art arsenal in El Ferrol, from Superintendent *don* Bernardo Freyre.<sup>42</sup> Freyre responded with a report on 524 pieces of timber gathered in the arsenal in May, but did not present a report on forest inspection.<sup>43</sup> Galicia had been an exception in Nicolás Manrique's report on forest abuses, thanks to the service of *don* Joseph Bermúdez de Castro. Bermúdez had died on November 30, 1735, but he had left several reports on the condition of Galicia's forests.<sup>44</sup> Perhaps Freyre referred the *Almirante* to these reports, but there is no proof of this. Vizcaya was also part of the Department of Ferrol. The

---

<sup>39</sup> Ibid., Suances, March 2, 1738, *don* Juan de la Pedrueca.

<sup>40</sup> Ibid., Guarnizo, April 17, 1738, *don* Juan de la Pedrueca.

<sup>41</sup> Ibid., Guarnizo, October 13, 1735, *don* Juan de la Pedrueca, "Representa las talas e incendios hechos en aquellos montes (10 pages);" For a good study of the iron foundries, see José Alcalá-Zamora y Queipo de Llano, *Historia de una empresa siderúrgica española: Los altos hornos de Liérganes y La Cavada, 1622-1834* (Santander: Centro de Estudios Montañeses, 1974).

<sup>42</sup> AGS, Marina, leg. 552, Madrid, March 12, 1738, *don* Bern.no Freyre, A Galicia.

<sup>43</sup> Ibid., Aranjuez, May 13, 1738, A *don* Bernardino Freyre, "Que remita una relación prompta de los árboles del norte que existen en aquel arsenal para arboladura de los navíos;" Ibid., Graña, 22 de Mayo de 1738, *don* Bernardino Freyre, "Con estada de los palos de pino para arboladura existentes en aquel arsenal."

<sup>44</sup> Ibid., Graña, December 6, 1735, *don* Bernardo Freyre, "Que murió *don* Joseph Bermúdez Juez Conservador de Montes." After a reconnaissance of the forests on Galicia in 1719 (Ibid., 1 May 1719, Reconocimiento de Montes de Galicia, in French), Bermúdez carried out his own inspections in 1724, 1729, 1730, and 1733. See Ofelia Rey Castelao, *Montes y política forestal en la Galicia del Antiguo Régimen* (Santiago: Universidad de Santiago de Compostela Servicio de Publicacións e Intercambio Científico, 1995). In 1737, *don* Benito Salgado inspected the forests of Tuy in southern Galicia. An inspection in 1749 compared changes in forest cover, see below, 203.

Marqués de Villareal had issued reports on forest visits there in 1733 and 1734.<sup>45</sup> In 1738, *don Felipe Uriarte* submitted a report on the forests of Navarre that were accessible by river.<sup>46</sup>

Considerable traffic grew between Guarnizo and La Graña in these years.<sup>47</sup> They were part of one department, and as El Ferrol became a *de facto* capital, the personnel and materials of Guarnizo transferred there. The relocation of smaller shipyards related to the disasters of the War of the Quadruple Alliance. Traditional sites in northern Spain, such as Pasajes and Santoña, had been too exposed to enemy attack. El Ferrol sat near a well-protected harbor, but the government selected the city only after a lengthy debate over other possible locations.<sup>48</sup>

The *Infante Almirante* and Ensenada had shown great interest in the forests of the Department of El Ferrol almost immediately. They received quick and informative responses from the department's top officials and, apparently, they gained knowledge about the timber available in important shipyards as well as on the general conditions of nearby forests. The *Almirantazgo* understood that the north coast was no longer going to be sufficient to supply Spain's shipbuilding timber, so they turned their interest to the other departments at the same time.

### **Forest Reconnaissance: Department of Cartagena**

---

<sup>45</sup> AGS, Marina, leg. 577, "Visitas en 1733 y 1734 dos leguas de la mar y rios navegables."

<sup>46</sup> Ibid., San Sebastián, April 21, 1738, *don Phelipe Uriorte*, "Remite relación individual de los montes que hay en aquella provincia y reino de Navarra, sus distancias a la mar, villas, y lugares a que pertenecen, de donde se pueden conducir los materiales, y a que rios."

<sup>47</sup> Ibid., leg. 553, for information on Guarnizo supplying La Graña in 1739.

<sup>48</sup> Ozanam, 491-494.

Ensenada received a review of the royal forests near Tortosa in May of 1738, from *don* Antonio Sartine, the *Intendente* of Catalonia. Sartine said the forests were of very good quality, suitable for shipbuilding. He attributed the good quality to a series of royal orders, most recently from 1720, that prohibited any kind of cuttings without royal permission.<sup>49</sup> However, tragedy struck in early August of 1738, when *don* Juan de León, a *Comisario de Guerra*, observed a large fire in the mountains outside the city of Tortosa in the royal forest. He immediately ordered the support of the royal forest guards and he got a large number of citizens to help fight the blaze. Sartine reported that over two hundred men died trying to put out the fire, which also damaged a space of five leagues of forest cover with its “extreme voracity.”<sup>50</sup> Sartine sent to Madrid a six-page list with the names of every person who helped fight the fire to save what they could of the royal forest.<sup>51</sup> The *Almirante* wrote back in October with an order to pay 10 *reales de vellón* to the people of the city of Tortosa who fought the fire.<sup>52</sup>

The forests of Tortosa had been valuable for the king and, when they were threatened, the people of Tortosa did not hesitate to risk their lives to fight the fire. It does not appear that the fire threatened the city, but was only visible at quite a distance. The fire was unusual in its size and intensity, obviously dangerous, and required a great number of men to put it out. The disaster meant that the royal forests of Tortosa would not be able to supply the arsenals of Barcelona or Cartagena for a long time, devastating news at a critical juncture for the Spanish navy.

---

<sup>49</sup> AGS, Marina, leg. 552, Barcelona, May 24, 1738, *don* Antonio de Sartine.

<sup>50</sup> *Ibid.*, Barcelona, August 30, 1738, *don* Antonio Sartine, “...con summa voracidad.”

<sup>51</sup> *Ibid.*

<sup>52</sup> *Ibid.*, Barcelona, October 11, 1738, *don* Antonio de Sartine.

Since the expedition to Oran in 1732, the Spanish outpost there had relied on the Department of Cartagena for its supplies, including timber for construction and weaponry.<sup>53</sup> In addition, plans for the arsenal at Cartagena meant the region would be producing and repairing ships in the near future, which would place a further demand on the forests of Valencia. On May 20, 1738, the Count of Clavijo notified the *Intendente don Alexo Gutiérrez de Ruvalcava* of forests in Valencia that could be useful for the navy. *Don Juan Valdés*, a *Capitán de Fragatas* had been discussing timber with Clavijo, who recommended the forests of the Valley of Cofrentes, near the Júcar River, which contained many good pine trees. He also said “good pine trees of good proportions” grew in the Marquesado de Moya, along the “Valencia River,” today the Turia River.<sup>54</sup> Extracting trees from either location would not be costly, he said, since they are rather accessible. Gutiérrez de Ruvalcava must have welcomed the news, because ten days later, he confirmed that he had a skilled and intelligent man ready to carry out the reconnaissance.<sup>55</sup>

During the summer of 1738, from July 13 to August 24, Joseph Maltés, *Ministerio Mayor de Arboladura* (Head Minister of Timber) of the Department of Cartagena gave a daily account of his trip into the mountains near the sources of the Turia and Júcar Rivers to inspect the forests of Moya and Cofrentes.<sup>56</sup> His daily log confirmed that a good

---

<sup>53</sup> Ibid., Cartagena, 11 June 1738, *don Alexo Ruvalcava*.

<sup>54</sup> Ibid., Cartagena, 20 May 1738, el Conde de Clavijo. “Hay pinares muy buenos...y de muy buenas proporciones.”

<sup>55</sup> Ibid., Aranjuez, 30 May 1738, “Acuerdo con *don Alexo de Rubalcava*, se nombre sujeto practico y inteligente que passe a hacer el reconocimiento.”

<sup>56</sup> The following text is based on: Ibid., Cartagena, 10 September 1738, *don Alexo Gutiérrez de Rubalcava*, “Con la relación que formo el Ministro Mayor de Arboladura Joseph Maltés del reconocimiento que hizo en los montes del Valle de Cofrentes y Marquesado de Moya, con express.an de la calidad y numero de árboles, que se hallan en ellos fines a que pueden applicarse, y los parages, por donde pueden conducirse a la costa. Que se dara quenta y avisara lo que S.A. resuelva dicho en 26 del mes.,” Ibid., 24 August 1738, 12

number of trees suitable for shipbuilding grew in the region along his route – however, not in the Valley of Cofrentes. Moya, by contrast, had pine trees suitable for *arboladura* for *navíos* of sixty to seventy guns. Its forests were accessible by road to the river, which eventually flowed past Valencia. He inspected more than just those two forest regions in his survey, commenting on what he saw along the way. Maltés’s methods included visiting individual households and noting the types and quantity of timber in their possession, as well as entering forests. He also noted when access to a forest required a new road. For example, a forested mountain to the southwest of Albocacer needed a road to connect to another, which would lead to the port city of Vinaroz. He commented on the conditions of the river for transporting the logs. He traveled by river from Santa Cruz and encountered several locations that would require the clearing of large rocks on the way to Valencia. Along the Júcar near Cofrentes, there was a multitude of rocks impeding transport. With the region’s predominantly hot and dry climate, the wetter and cooler mountains of Moya in northern Valencia would become the prime source of timber for the department capital at Cartagena, but would require much labor to clear the river of obstacles. The department’s arsenal became busy enough by the 1740’s for the government to officially shut down the arsenal of Barcelona and transport the entire crew to Cartagena.<sup>57</sup>

---

pages, “Relación diaria de lo que por mi Joseph Maltés Ministerio mayor de Arboladura de este Departamento de Marina, sea executado y reconocido en el viage que de orden del Señor *don* Alexo Gutiérrez Rubalcava Intendente del mismo Departamento, he hecho al Reino de Valencia, y Marquesado de Moya, y Valle de Confrentes, y del Rio Júcar, y del Rio de Valencia, al fin de reconocer las maderas, que se encuentran en diferentes montes de estos reinos, y pueden servir para las navíos de S.M. y es en la forma siguiente.”

<sup>57</sup> Ozanam, 490.

## **Forest Reconnaissance: Department of Cádiz and the Inspections of Juan Valdés y Castro in Segura and Catalonia**

The shipwright *don* Ciprián Autrán had experience in the shipyards of the north before he was promoted to *Capitán de Maestranza y Constructor* (Captain of the arsenal) at the docks of La Carraca, in the Bay of Cádiz.<sup>58</sup> Cádiz had gained prestige when the House of Trade moved there in 1714. In 1717, Patiño fixed his residence there, granting it an honorific preeminence above Ferrol and Cartagena after 1726. Cádiz, however, was far from the main forests traditionally used by the navy. Reports in 1738 showed the docks would be short on timber for the repairs it needed to carry out in the coming year.<sup>59</sup> La Carraca was used mainly as a place to repair ships, and it often imported timber from the north coast or from abroad.<sup>60</sup>

During Autrán's time in Cádiz, he became familiar with the wood from the forests of Soto de Roma in Granada and the forests near Málaga. In a letter from La Carraca in February 1738 to the *Almirante*, Autrán claimed that for the repairs needed at La Carraca, these forests were as good as the forests he had known in Asturias, Guipúzcoa, Vizcaya, Álava, and Burgos. Autrán did indeed have a lengthy career in both northern and southern Spain.<sup>61</sup> He advised the *Almirante* to start exploiting the forests closer to Cádiz to save money.

### *Segura*

---

<sup>58</sup> Merino Navarro, 48.

<sup>59</sup> AGS, Marina, leg. 553, *don* Ciprián Autrán, La Carraca, 13 September 1738.

<sup>60</sup> See José Quintero González, *El arsenal de La Carraca, 1717-1736* (Madrid, 2000); and José Quintero González, *Jarcias y lonas: El renacimiento de la armada en la bahía de Cádiz* (Cádiz, 2003).

<sup>61</sup> Merino Navarro, 56.

Autrán knew of another source that had great potential for the *Almirante*. In 1733, *don Sebastián Caballero*, the Superintendent of the *Fabrica de Tabacos* in Seville, had run out of wood for the *Fabrica*'s new building, which today houses the University of Seville, and was running dangerously low on funds to buy imported timber. He had known that, in the past, wood came to Seville from the mountains near the source of the Guadalquivir. His *Ingeniero de Obra*, *don Diego Bordic*, inspected the wood used in houses and churches in Seville made with timber from the Sierra de Segura. Bordic saw that the quality was very good, and he and Caballero sent some trustworthy colleagues into the Sierra with the instructions to inspect the wood in the forest, assess their potential utility in constructing the *Fabrica*, and see how much trouble it would be to reestablish the old traffic down the river to Seville. The group soon came back, certain of the high quality of wood and optimistic about the reestablishment of an economical Segura-Seville river transport system. Caballero and Bordic notified the Secretary of State, José Patiño, of the possibilities for tapping into the forests of Segura for finishing the *Fabrica de Tabacos*. Patiño approved sending annual shipments of timber down the Guadalimar and Guadalquivir at the end of winter, beginning in 1734.<sup>62</sup>

The navy soon took notice of the timber arriving in Seville from Segura.<sup>63</sup> In 1734, *don Vicente de Acero*, Architect and Master of Works in Seville, notified the *Intendente* of the navy in Cádiz, *don Francisco de Varas y Valdés*, of the potential of these forests for shipbuilding. That year, Varas ordered a local master carpenter, Francisco Gener, to make a reconnaissance trip with the experienced *constructor* Autrán

---

<sup>62</sup> *Expediente sobre el regimen y administración de los montes de Segura de la Sierra y de su provincia*, (Madrid: Imprenta de Miguel de Burgos, 1825, originally 1811), 29. Held at the Archivo General de la Marina (Museo Naval), Madrid, Biblioteca Museo Naval, 9550.

<sup>63</sup> *Ibid.*, 32.

to examine the forests of Segura for naval interests. They went in December of 1734 and returned in January of 1735. Like the trip by the trusted colleagues of Caballero and Bordic for the *Fabrica de Tabacos*, Gener and Autrán's inspection was cursory, and they proposed to Varas a more thorough inspection in the near future. Gener had assured Varas they would find an abundance of valuable timber.<sup>64</sup> Eventually, as with all important matters of the day, the call for an inspection of the forests of Segura wound up on Patiño's desk.

Patiño died before the inspections happened. By the time they did, word of the forests of Segura reached the *Intendente* of the Department of Cartagena, *don* Alexo Gutiérrez de Rubalcava. He wanted the inspection to include the Segura River since it emptied into the Mediterranean not far from his city. Finally, in February of 1738, the *Señor Infante Almirante* commissioned the *Capitán de Fragata* Juan Valdés y Castro [hereafter Valdés] of La Carraca and the previously mentioned carpenter Francisco Gener to inspect the *montes* of Segura.<sup>65</sup> They were to leave Cádiz on the first day of April to inspect the quality of trees in the sierra, the potential for their use in shipbuilding, and the potential for sending all of it downriver. A master carpenter and another skilled individual left Cartagena the same day to examine the entire course of the Segura River. It appears that Valdés and Gener were responsible only for inspecting forests along the Guadalimar and Guadalquivir Rivers, but their report mentioned that they inspected three leagues of the Segura River as well. They finished on April 26, 1738.<sup>66</sup>

---

<sup>64</sup> Ibid.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

The accounts of Valdés's reconnaissance are deserving of close analysis, since his work would leave a lasting legacy in the region and because historians have not given his inspections much attention. In early May, the *Infante Almirante* called Valdés to Madrid to report in person to the king's ministers. The written reports stated that the largest trees could serve the navy well for twenty years, but Valdés stressed the obligation for the local justices to keep an eye on things and oversee plantations. Valdés lamented the continuous burnings and clearings made for agriculture or livestock pasture that were destroying the forest. Roads were better near the Guadalimar and Guadalquivir, but three leagues down from the source of the Segura, where the river becomes wide enough for transport, some roadwork would be required.

Valdés and the *Capataz de Arboladura* Juan Pinzón sent a more robust report from La Carraca to the *Intendente* Francisco de Varas in nearby Cádiz a few months later, on August 6, 1738.<sup>67</sup> This report provided an overview of the system that would send trees from Segura down the Guadalimar and Guadalquivir Rivers to Seville and the arsenal of Cádiz at La Carraca, indicating in many ways the incorporation of Segura into the spatial and temporal scope of the Bourbon state. Valdés and Pinzón argued for the most efficient methods of cutting and transporting the timber, the timetable in which each transport needed to follow, the number of laborers required for its safe arrival, and the general costs for the workers' wages and the labor for making the cuts. Such a report would indicate to Varas how much timber to expect in Seville or La Carraca and the time of year such a delivery would arrive.

---

<sup>67</sup> AGS, Marina, leg. 553, 6 August 1738, "Previsiones sobre la utilidad..." 7p.

In the opening paragraphs, the authors referenced their experiences from the past year to demonstrate their credibility. They noted that they had inspected the forests themselves and worked with Francisco Gener, who by this point had the most experience, having first visited the forests of the Sierra two and a half years earlier. They referenced the recent use of timber from Segura at the *Fabrica de Tabacos*, and suggested the suitable use of this timber at the arsenal of La Carraca. The rest of the document outlined how a successful transport of two hundred trees' worth of lumber from a place called Arroyo de Peña Rubia to La Carraca might occur.

Valdés and Pinzón claimed much of the land nearby belonged to the crown, making access theoretically easier and more straightforward. Opening a road from Arroyo de Peña Rubia to Rio Badera and then to the Guadalimar, about half a league, required little work for the transportation of two hundred trees.

They stated that tree felling should occur during a waning moon in August and September or a waxing moon in December and January, explaining that such timing is believed to be more useful for the conservation of the wood. They went on to emphasize that cuttings made in August and September would be better than in December or January in that venue, because snowfall in the winter prevents access to the forests. Since the rivers at the end of the summer were always too low to carry the wood, February and March were optimal times for transportation to begin, when melting snow raised the level of the water.

The authors calculated the cost of cutting and transporting two hundred trees from the cutting site to the Guadalimar River. To carry the timber into and down the river, Valdés and Pinzón recommended employing twenty men at a fair daily wage. They

determined that the first leg of the trip, down the Guadalimar to where it joined the Guadalquivir, is about twenty-five leagues of time-consuming turns and should take two months. Because this river was so narrow, the authors argued, the group would have to keep the timber in single file. It would take three more months to travel the fifty to sixty leagues down the Guadalquivir to Seville. However, this river was wider and the wood did not need to be in single file, except when going under bridges and through dams. Likely imagining the dexterity and vigilance required by the crew to carry out such a complicated, costly, and potentially dangerous operation, Valdés and Pinzón reminded the reader at this point of how indispensable those twenty men were. Employing fewer would be a risk to the entire operation. Transporting timber from Seville to Sanlúcar de Barrameda, following a much wider and calmer section of the Guadalquivir with the same crew, would take only fifteen days. In Sanlúcar, the wood could be loaded onto two small ships and taken to La Carraca. In total, the transportation would take about five and a half months, not counting the time needed to fell the trees. Half the total cost would go towards the felling and half towards the transportation.

Valdés and Pinzón ended by estimating the costs of cutting wood into planks, beams, and other parts, but it is clear that the main goal of their report was to illustrate the feasibility of wood transport from the forests of the Sierra de Segura to the arsenal of La Carraca. In theory, the system appeared to work well, and it offered an affordable and less risky alternative to importing wood from abroad or even from northern Spain.

The report by Valdés and Pinzón described the geography of the Sierra de Segura, and provided the crown with information on the methods it would need to exploit its resources, using members of the local forest communities for their labor, materials, and

time to transport wood to the arsenal. These few years of reconnaissance initiated significant changes for the navy and the region of the Sierra de Segura. Only ten years later, King Fernando VI (r.1746-1759) signed the Ordinance for the Conservation of Forests, and designated Segura as a special province of the navy, the only territory mentioned in the ordinance that was not near a coast or previously under the jurisdiction of one of the three naval departments. The ordinance required superintendents of the navy to inspect the forests, make reports, and enforce planting quotas. The Departments of Cádiz and Cartagena both benefited from the strategically located forests and the rediscovered river transport system.

The work done by Valdés and his assistants ushered in a world of new information for the king's ministers about a forgotten region. Valdés and Pinzón demonstrated expert knowledge regarding tree felling, the Guadalimar and Guadalquivir river system, and the difficult task of transporting two hundred trees worth of timber from the sierra. By combining their knowledge of the needs of the crown with their experiences in the forests of the sierra, Valdés and Pinzón helped the Segura inspections of 1738 become one of the most successful of the many forest inspections carried out in the reign of Felipe V, from the monarchy's point of view. However, the sudden interest the crown showed in the sierra caused considerable shock to the region, ignited some resistance that did not completely disappear during the eighteenth century, and imposed an additional jurisdictional body within an already complicated socio-legal patchwork.

The long-term effects of the navy's installing itself in the Sierra are ambiguous. Jesús de Cobo Guzmán y Lechuga has argued that social and economic conditions in the

Sierra de Segura did not worsen because of the new naval administration.<sup>68</sup> He noted that conditions in the mountains had been difficult for a long time before the navy arrived, and that life was never easy in the sierra. People who could sell timber to the navy or work in the removal and transport stages could benefit from the presence of the navy. Many other scholars argue that life in the forest became more burdensome. Emilio de la Cruz Aguilar sees the involvement of the navy in the Sierra de Segura as ultimately causing deforestation and preventing adequate local access to forest resources. The jurisdiction of the navy only complicated the region's administration, he argues, because the navy did not displace the jurisdictions of the Military Orders, the Finance Ministry (*Hacienda*), or local municipalities that already existed.<sup>69</sup> Nevertheless, in terms of territorialization, the state had moved a long way toward integrating itself into the local milieu, and, largely due to Valdés's expedition of the Sierra de Segura, had identified useful territory for naval interests, redefining the political geography of Spain.

### *Catalonia*

Juan Valdés y Castro had about a month to rest before the *Intendente* Francisco de Varas, under orders from the *Infante Almirante General*, called on him to undertake an even more ambitious expedition. The instructions, written in October of 1738, told

---

<sup>68</sup> Jesús Cobo de Guzmán y Lechuga, *Estudio sobre las Ordenanzas de Montes del año 1748 y del expediente sobre el régimen y administración de los montes de Segura de la Sierra y de su provincia marítima de 1811* (Madrid, 1994).

<sup>69</sup> Emilio de la Cruz Aguilar, "La provincia marítima de Segura de la Sierra," *Boletín del Instituto de Estudios Giennenses* 107 (1981), 67-72.

Valdés to execute a reconnaissance of the pine forests of Catalonia for wood, pitch, tar, and hemp to supply the Armada.<sup>70</sup>

Catalonia at this time had been experiencing major changes. The abolition of its *fueros* in 1716 removed its distinct Catalan government. Barcelona remained an important city for the navy after the War of Succession, launching the fleet that took Sardinia in 1717, but the end of the galley era slowed production in the city's arsenal and factories for naval stores.<sup>71</sup> It had become commonplace to buy naval stores and masts abroad. The royal forest around Tortosa remained valuable, but a severe fire raged through it in the summer of 1738, mentioned above.<sup>72</sup> On top of all this, forest clearings and burnings accelerated with Spain's expanding population.

These themes were the motivations behind Varas's instructions. Although Valdés worked in the Department of Cádiz, he had demonstrated his competence during his inspection of Segura earlier in the year. The crown needed information on the condition of Catalonia's forests and its naval stores industries in order to increase efficiency and remove the need to rely on foreign materials. Three documents in particular tell the story of Valdés's trip, including his instructions, his daily log, and a final assessment in the form of a letter establishing a franchise to provision wood and naval stores to all three naval departments, called an *asiento de arboladura*.

The instructions described his intended itinerary, the time he needed to complete all of it, the types of trees to look for, and the elements he needed to include in his

---

<sup>70</sup> AGS, Marina, leg. 553, 13 October 1738, Francisco de Varas y Valdés, "El Señor Infante Almirante General ha resuelto...."

<sup>71</sup> Henry Kamen, *Empire: How Spain Became a World Power, 1492-1763* (New York: Perennial, 2002), 453.

<sup>72</sup> AGS, Marina, leg. 552, 30 August 1738, Barcelona.

report.<sup>73</sup> The instructions named a construction supervisor to travel with Valdés and summoned both of them to the court in Madrid to discuss the mission with Ensenada and the *Almirante*. The planned itinerary took Valdés from Cádiz to Madrid to Calahorra, a town on the Ebro River. Valdés was supposed to inspect several of the important rivers that flowed into the Ebro, and report on any obstructions to the transport of wood from the mountains. These rivers included the Aragón, Gallego, Aguas, Martín, Guadalupe, Nogueras, and the Segre. Along the way, Valdés was to write in his diary in detail about lands that were suitable for growing hemp and the condition of facilities used to make pitch. The instructions called for descriptions of the methods used and the quality of the pitch made in each of these locations. The navy wanted mixtures with no sand, dirt or rocks, like the kind it had been importing from foreigners. When Valdés finally reached Barcelona, he was to visit the *asentista* (contractor), *don* Joseph Basora, and inspect his rigging factory, based on a royal ordinance from December 1737 that described the proper way of making rigging and preserving the materials.

All of this was to be done in the winter, and was intended to make the most efficient use of Valdés's trek to Barcelona. For the second and more important leg of the trip, he had to wait until April because the snow in the mountains made it impossible to enter many of the forests. Once the spring arrived, he was to follow a precise itinerary, and record everything in his daily log. The instructions stipulated that he needed to record the type, size, and number of pine trees in each forest, and their distance to a road or navigable river. He was to record the condition of the roads in each area. Trees should be cut before winter, when the forest was accessible. The instructions named four types of

---

<sup>73</sup> *Ibid.*, leg. 553, 30 October 1738, "Ynstrucción que ha de observar..." 17 articles.

pine trees and ranked them by quality. They also referenced forests of supposed quality, specifically those near Sort and Riat and those northwest from Urgel. Valdés was to enlist people that could help him, apparently meaning knowledgeable local experts, not just any local peasant.<sup>74</sup> From Barcelona, he would follow a route that took him across the mountains near the headwaters of the Segre, Noguera, Gallego, and Aragón rivers. When he was done, he needed to report in person again in Madrid to Ensenada and submit his report. Francisco de Varas repeatedly emphasized the importance of this reconnaissance to Valdés and allowed him to take about four months in the spring to complete the forest inspection.

Although the instructions ordered Valdés to cover a lot of ground, the navy did not require him to inspect all the forests of Catalonia, or even those that had been historically the most important for the region, such as those near Barcelona, the shipbuilding center Sitges, or the royal forests of Tortosa. Instead, the trip aimed to expand the range of naval forestry deeper into Spain's river network and, indeed, much of Valdés's trip occurred in Aragón and Navarre, outside Catalonia. His trip was multi-purpose, indicating the myriad ways the navy felt it could improve its network of supply, particularly in becoming more self-sufficient in shipbuilding timber, rigging, and pitch. This required more information on the hemp-growing industry and the pitch factories near Barcelona and Tortosa. Overall, the instructions outlined an ambitious mission covering about one thousand miles, along a dozen rivers and over difficult terrain, to be accomplished in eight or nine months.

---

<sup>74</sup> Ibid., article 17.

It appears that Valdés did not accomplish everything listed in the instructions for the first leg of the trip from Madrid to Barcelona.<sup>75</sup> He did inspect the Cinca River from its source to the Ebro and various locations in Aragón and Catalonia suitable for growing hemp, but by January 1739, he still had not inspected the other rivers. He made a favorable report on the Cinca River and the region's suitability for hemp growing, saying there were only two sections that might block wood transport on the river, and made an estimate of 260,000 *arrobas* worth of hemp that could be harvested in Catalonia and Aragón.<sup>76</sup> It is possible that winter conditions in the region prevented Valdés from accomplishing everything, or he might have been concerned about the time he needed in Barcelona to prepare for the spring.

In and around Barcelona, from January through March, Valdés inspected pitch production facilities and factories for rigging.<sup>77</sup> Repeatedly, the facilities failed inspection. The main rigging factory in Barcelona, run by the *asentista*, don Joseph Basora, lacked proper protection of materials from the elements, and Valdés recommended building a new roof. A pitch-making center outside of Barcelona consisted of only the remains of a factory. Another made pitch with too much sand. A lack of trees in the royal forest around Tortosa meant they would have to buy trees from privately owned forests, but Valdés was certain the Armada could be well served from this location in the future. In each place, Valdés recorded that he asked about the methods in use, and gave instructions on how to improve the process. In a letter written in March, Valdés sent

---

<sup>75</sup> Ibid., 17 January 1739, letter of Valdés's arrival in Barcelona.

<sup>76</sup> An *arroba* was both a weight and volume measure equaling 25 Castilian pounds of 16 ounces; 8 azumbres or 32 pints; 11.5 kilograms. See Phillips, *Six Galleons*, 228.

<sup>77</sup> AGS, Marina, leg. 553, "Diario, especulación y reconocimiento hecho por el Capitán de Fragata don Juan de Baldés y Castro...."

a review of what he had seen, and notified the authorities that he was planning to leave Barcelona on April 6, a week or two ahead of schedule.<sup>78</sup>

The previous November, Francisco de Varas noted that he had appointed Valdés's former partner on the Segura inspection, Juan Pinzón, to go to Barcelona as a knowledgeable and experienced aid.<sup>79</sup> Valdés most likely would have been happy to reunite with Pinzón. However, it is not clear whether Pinzón went with Valdés to inspect the forests. His name does not appear in later documents and in a letter Valdés sent upon his arrival in Barcelona, he remarked that they had not seen each other yet.<sup>80</sup> Other people to join Valdés included the *Comisario de Guerra de Marina* and a Minister of the *Almirantazgo* in Barcelona, *don* Antonio Gallego y Montemayor. They employed a local carpenter and a knowledgeable assistant for the duration of the trip.

In April of 1739, almost exactly one year after his expedition to the Sierra de Segura, Valdés set out with his crew to begin his forest inspection of Catalonia, Aragón, and Navarre.<sup>81</sup> In his daily log, he followed his instructions closely. In addition, he calculated and recorded the estimated costs of repairing or improving the roads and rivers in order to facilitate access. He also specified who owned the forests he inspected, whether a noble, a town, or the king himself. The rivers he visited included the Segre, Noguera Pallaresa, Noguera Sola de Aragón (today the Noguera Ribagorçana), Noguera de Tor, Gallego, Aragón, and Esca. He maintained an official tone throughout, but commented on his delight at finding a couple of particularly rich forests in the northwest

---

<sup>78</sup> Ibid., 14 March 1739, Barcelona.

<sup>79</sup> Ibid., 25 November 1738, Cádiz, from Varas.

<sup>80</sup> Ibid., 17 January 1739, letter of Valdés's arrival in Barcelona.

<sup>81</sup> Ibid., "Diario, especulación y reconocimiento hecho por el Capitan de Fragata *don* Juan de Valdés y Castro...."

corner of Catalonia, and his disappointment in the forests near the source of the Gallego River.

In a letter from Jaca near the end of his trip in June, he disclosed that there should be enough wood for the armada for forty to fifty years, without requiring much cost to open the roads or clear the rivers. However, something had to be done about the fires that damaged the forests every year.<sup>82</sup>

For the remainder of the trip, Valdés worked hard to make up for what he had not accomplished in the winter. After finishing his forest inspections, he returned to inspect hemp production near Zaragoza and along the Aguas, Martín, and Guadalupe rivers, finishing in mid-July. By August, he had submitted his diary and presumably met with the Marqués de la Ensenada in Madrid that summer.

Although the official instructions given to Valdés failed to mention it, the *Intendente* Francisco de Varas made it clear in several letters that the navy was hoping this reconnaissance mission would result in establishing an *asiento de arboladura*, or contracting franchise that would be in charge of supplying the entire Spanish navy with wood, pitch, tar, and other naval stores.<sup>83</sup> By October, one year after Varas commissioned the trip, Valdés put together a report declaring the establishment of this *asiento*.<sup>84</sup>

The *asiento* would begin the next year in 1740, and would be granted for twelve years. Its purpose was to provide naval stores to the three naval departments, but it did not name who would receive the *asiento*. Valdés specifically cited the forests in the

---

<sup>82</sup> Ibid., 17 June 1739, Jaca.

<sup>83</sup> For example, Francisco de Varas's letter that came with the instructions mentions the *asiento*. Ibid., 4 November 1738, Cádiz.

<sup>84</sup> Ibid., "Papeles concernientes al reconocimiento de los Montes de Cataluña, hecho por don Juan Valdés Capitán de Fragata de la Real Armada: Assiento de Arboladura, Tabloneria, y Vetunes," 30p., 23 articles.

northwest corner of Catalonia, called the *montes* of Señora de Caldés and San Nicolás, as the best and the ones that should be exploited immediately. For other naval stores and hemp, he recommended areas around the *montes* de Beumor and Carén. To make pitch, Valdés preferred the royal facilities of Tortosa. He made clear the necessity to open roads and clear rivers of obstacles. The work required employing village carpenters, laborers, river specialists, and their carts and oxen to cut and transport the wood. All day wages were supposed to be paid promptly at a fair rate.

The establishment of the *asiento* after Valdés's forest inspection may have had significant long-lasting results, but more research is needed to draw this conclusion. The 1748 forest ordinance does not mention it, but an *asiento de arboladura* still existed in the 1770s.<sup>85</sup> If it was established successfully, it was due in no small part to Valdés's travels and reports. At the very least, Valdés's expedition into the forests of Catalonia, Aragón, and Navarre demonstrated the difficult situation the Spanish navy faced in this period and the interest of the crown's highest officials in improving Spain's domestic supplies of naval stores. The inspections of Valdés added new information to that collected from the inspections of the Ebro River network in 1639 and 1677.

Valdés's reports provided a lot of new information for the Bourbon government concerning the poor state of the naval stores industry, the positive outlook for hemp supplies, and the accessibility of high quality pine forests. It becomes clear in the documents that the navy required the active support of knowledgeable locals and their resources such as pack animals, carts, boats, and tools. The forest ordinance of 1748 did not refer to most of the territory Valdés inspected in Catalonia and none that he visited in

---

<sup>85</sup> Archivo General de Indias, Correos 457B, 1772, "Correspondencia y expedientes de la Dirección General de Renta."

Aragón and Navarre. Perhaps these regions were too distant or the infrastructure was too underdeveloped for the navy to incorporate a new Province of the Navy, as in Segura. In the end, the forests of Tortosa and Barcelona retained their primacy in naval matters in eastern Spain, but Valdés's reconnaissance mission reveals that the crown was at least well informed about the possible uses of other venues.

### **Accomplishments of Felipe V's Reign**

In many ways, the Spanish Bourbons differed very little from the Habsburgs in their approach to forest exploitation and stewardship. The methods of monitoring, extracting, and transporting timber in Spain had their origins in the Habsburg period. For example, the Bourbons continued to rely on the bureaucracy to monitor forest conditions and make reports. They sought the same materials; oak trees were still valuable for the hulls and pine trees for various other components, particularly masts. The same technologies existed for transporting wood, typically by floating logs downriver, carrying them on barges, or hauling them overland with oxen. As a result, the navy continued to seek materials in locations that lent themselves to existing technologies for transport. In other words, agents of the crown continued to look for trees near the coasts, on mountains that sloped to the water, or along navigable rivers. This meant that important forests for the Habsburgs remained important for the Bourbons, particularly along the northern coast. Under the Bourbons, however, ministers were eager to find more locations that fit these criteria, resulting in an expansion of state forestry sites.

After the administrative reforms under José Patiño, the forest reconnaissance missions of the 1730's under the direction of the *Almirantazgo* resulted in the production

of new information for the crown and an increased royal presence in forest communities. The reports that the forest *visitadores* produced illustrate a combination of expert knowledge of forest management, geography, hydrology, shipbuilding, and economics to indicate to the crown the potential value such forests could have for the monarchy. These reconnaissance missions aimed to expand the range of naval forestry deeper into Spain's river networks. In some cases, however, the crown must have been disappointed in what they found. Maltés's journey in Valencia proved that the forests of Cofrentes were not as good as one nobleman had claimed, and the Júcar River was too rocky to use for transporting logs. Valdés had expressed his disappointment at the condition of forests along the Gallego River in Aragón. Valdés also revealed the poor conditions of factories for rigging and pitch in and around Barcelona. Overwhelmingly, however, the crown benefited from these inspections.

Centralization of forest management increased under the first Bourbon, and forest inspectors expanded their work to new regions in the monarchy. The experiences of Ciprián Autrán and Juan Valdés y Castro show us that the three naval departments did not operate in isolation from one another. Autrán's experiences in the north became useful in his role as an official in Cádiz, and Valdés's successes in Segura led to his appointment to inspect the forests of Catalonia.

As in the Habsburg-era, exploratory missions in Valencia, Andalusia, and Catalonia, inspectors under the new Bourbon dynasty relied on the participation of local residents. While differing state and local interests in forest use led to numerous conflicts, the crown and local communities frequently relied on each other to achieve their goals. Bourbon legislation and bureaucratic reports reveal the continued need for participation

from knowledgeable local residents for forestry expertise, labor, and materials.<sup>86</sup> The limitations of early modern bureaucratic government meant that the state could not possibly maintain strict regulations of forest use and the nearly continuous observation of forest conditions enjoyed by modern governments. In other words, the territoriality I am examining was a particularly early modern form of territoriality, and it operated through a series of compromises between state goals and the realities of accessibility and control at the local level.

The collection of such a vast amount of information about its forests in a brief period revealed how much the crown still had to learn about its own geography. By 1740, officials and locals alike were monitoring the forests near Spain's coasts to a greater degree.<sup>87</sup> Whether *doña* Catalina de Pando had a real concern for His Majesty's navy in

---

<sup>86</sup> Literature that has shaped the field of forest and environmental history typically portrays the interests of the state and of local societies as completely opposed and locked in constant struggle. See, for example, Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Oxford: Oxford University Press, 1989); Nancy Lee Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley: University of California Press, 1992); James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed* (New Haven: Yale University Press, 1998). While conflicts did exist over forest resources in early modern Spain, I have found a degree of concern for broader local needs on the part of the crown that goes against the grain of most of the literature on this subject. Likewise, historians of conflicts over forest access have overlooked the level of interest members of forest societies had in royal service during the early modern period. The relatively high level of pay, the prestige, and the potential opportunities for advancement could convince many people of the sierras to cut or transport timber for naval bureaucrats or to fight life-threatening fires in royal forests. Ultimately, however, there was no option to decide whether to deal with the navy once it established its jurisdiction. Municipalities used legal recourse to maintain access when they could, but it became an uphill battle as the century progressed. The forest inspectors may have brought opportunities for paid labor to local populations, but they also imposed greater restrictions on local forest management. For example, the navy reserved exclusive rights to the biggest and strongest trees and required anyone planning to fell trees for construction or repairs to apply for approval first.

<sup>87</sup> The archives indicate that officials began coming down much harder on the export of timber to foreigners after 1738. For example, AGS, Marina, leg. 553, Madrid 14 de enero de 1739, *don* Joseph de la Torre Escovedo, "Preveniendole la orden que se comunica a *don* Juan de Rebollar prohibiendo absolutamente la corta, y extracción a reinos estraños de las maderas que puedan aprovecharse en los construcciones y carenas de los navíos del Rey, encargandole averigue, y informesi la tolerancia, consentimiento, (?), de aquel ministro a o operado a la desolación de los montes como se le imputa..."; AGS, Marina, leg. 553, Avilés 31 de Henero de 1739, *don* Juan del Revollar, "Acusa el recivo de la orden de 14 del corr.te y contexta el desorden que se ha tolerado en la corta, y quema de mucha parte de maderas de los montes de aquel Principado, y el abuso de extraerlas a dominios extrangeros. Que absolutamente no permita se vaguen

reporting her felled tree, or acted on a long held dislike of her neighbor by reporting him for felling it, her case illustrated the heightened awareness of forest conditions and heightened concern of forest matters within the Spanish government.

As we will see in the next chapter, the information gathered from forest reconnaissance missions in the 1730s led to major changes in forest management by 1748. Perhaps the amount of time and ink used in *doña* Catalina de Pando's case contributed to Ensenada's desire for a national forestry code, especially given the verdict. To compensate for his offense in cutting down a tree valuable to the navy, the court sentenced Juan de Cuero y Arce to plant the same type of tree in exactly the same location next to *doña* Catalina de Pando's house. In the short term, this was hardly compensation for the loss. In the longer term, the court's decision signaled a new resolve on the part of the crown to oversee its interests in usable timber, even if it meant intervening in what previously had been strictly local matters.

---

del Principado maderas algunas de las que directa o indirectamente puedan servir para construcción y carena sin expresa licencia de S.A.," (response from 18 feb); AGS, Marina, leg. 553, A *don* Juan de Revollar, Madrid 18 de Febrero de 1739, "Contextando VM con fecha de 31 del passado el desorden que seá tolerado en la corta y quema de mucha parte de maderas de esos montes y el abuso de extraerlas a dominios extranjeros; me manda el *don* Infante Almirante General repetir a VM que sin expresa licencia suya, no permita, y antes si prohiba, y defienda la corta, y saca de maderas que se reputen utiles para la construcción y carena de los navios del Rey, en inteligencia de que al actual viceregente de essa Audiencia se le tiene comunicada igual orden y que no se duda la observará inviolablemente aún en la parte de recoger las licencias que aya concedidas por otro que por S.A. passandoso p. VM el oficio conveniente a este fin."

## Chapter 5 – State Forestry Reforms during the Reign of Fernando VI, 1746-1759

*Don* Juan José Navarro (1687-1772) rose through the ranks of the royal bureaucracy under the guidance of José Patiño. Navarro eventually became the first Marqués de la Victoria (1744) and Captain General of the Royal Armada (1750). During his long, accomplished life, Navarro published numerous books on nautical and geographical matters. His best-known work was a collection of illustrations, completed in 1756, depicting aspects of the shipbuilding industry, the *Diccionario demostrativo de la configuración y anatomía de toda arquitectura naval moderna*, also known as the *Álbum de construcción naval*, or the *Álbum del Marqués de la Victoria*. One of the documents in this collection is a map based on Juan Valdés y Castro's Ebro River reconnaissance mission of 1738-9. In 1740, one year after Valdés completed his reconnaissance of forests in the Ebro River network, Navarro published the map to illustrate the forests, mountains, rivers, and towns covered in Valdés's mission.<sup>1</sup> The map is impressive for its artistry and for the wealth of information presented. Accompanying it are extensive descriptions of forests, hemp plantations, and tar production facilities inspected by Valdés. The text covers half of the entire document and even includes information from Joseph Maltés's inspection of the forests of the Marquesado de Moya from 1738. Always with an eye for detail, Navarro had the map drawn with the scale bar over the top of a tree stump at the bottom of the page. By including this map later in the *Diccionario*, one of

---

<sup>1</sup> Archivo General de la Marina (Museo Naval), Madrid, BMN-14430, "Álbum del Marqués de la Victoria, Hoja 22ª, Mapa topográfico de todos los bosques que el Rey tiene en el Río Ebro...." Navarro did not draw the maps and other illustrations himself, but supervised the production of the album.

Spain's most accomplished mariners demonstrated cartographically how the navy had begun taking greater territorial control over its forest resources.

The map in Navarro's album [Figure 2] combined the best of contemporary cartographic techniques with new information gathered from forest inspections ordered by Prince Felipe and his secretary in the *Almirantazgo*, don Cenón de Somodevilla, the Marqués de la Ensenada.<sup>2</sup> Such a map would not have been possible before Valdés completed his mission. The success of the forest inspections by Valdés and others led to further extensions of state forestry, not only to more provinces in the east and south, but also to areas deeper into the interior. A *real orden* (royal order) from 1742 increased the traditional range of coastal forest inspections from two leagues to fourteen leagues from the sea or a navigable river.<sup>3</sup>

The *Almirantazgo* would effectively dissolve during the War of Jenkin's Ear and the War of Austrian Succession (1739-1748). The *Infante almirante*, Prince Felipe, left for Italy in 1742, taking Ensenada with him, thereby ending their naval administrative activity in Spain. Ensenada returned to Spain after the death of José del Campillo in 1743, and was soon appointed secretary of Finance, War, Navy, and the Indies, becoming Spain's prime minister in practice. Ensenada had many ideas about how to reform the government of Spain to enhance state power, but he found it difficult to achieve anything

---

<sup>2</sup> Prince Felipe was not first in line to the throne after Felipe V. The prince was the second oldest son from Felipe V's second marriage. Felipe V's last surviving son from his first marriage would become King Fernando VI. Fernando had no children, so the next in line was his half-brother, Carlos III.

<sup>3</sup> Archivo General de Simancas (hereafter AGS), Secretaría del Despacho de Marina (hereafter Marina), legajo (hereafter leg.) 571, July 17, 1742, Madrid. Some towns disputed the change. Town officials in Osuna claimed that their forests were more than fourteen leagues from the sea. The crown responded by saying that while the town was seventeen leagues from the sea, it was fourteen leagues from Seville, which was a port, and therefore within the navy's forest jurisdiction. AGS, Marina, leg. 571, April 24, 1747.



with a king entrenched in a war that was draining military resources in Italy.

Nevertheless, in 1745, Ensenada ordered a general report on forests from all three departments, the first single representation of forest conditions near all the coasts of Spain.<sup>4</sup> Forests continued to show signs of rapid depletion,<sup>5</sup> but by the late 1740's Ensenada planned to combine information gathered from forest inspections with lessons learned over the past two centuries to produce Spain's first national forestry code. As had happened multiple times in the past, the crown sought new extraordinary measures that would reverse the trend of deforestation.

The most extraordinary of Ensenada's measures was the *Ordenanza para el aumento y conservación de montes y plantíos* of 1748. This chapter places the 1748 forest conservation ordinance in historical context and argues for its close adherence to Habsburg legislative precedents. Many of the articles in the 1748 ordinance differed little from their seventeenth century counterparts. However, the degree of territoriality represented by the ordinance was new, with important implications for the future, as we shall see.

### **Ensenada's Push for Peace and Naval Revival, 1746-1748**

King Felipe V's death in 1746 came before peace, and Ensenada wasted no time in presenting the new king, Fernando VI, with his proposals for reform and his pleas to put an end to the war. Ensenada's proposals addressed foreign relations, the state of the royal treasury, and Spanish government and power. Primarily, Ensenada wanted a single

---

<sup>4</sup> Ibid., "Estado por mayor de los árboles se han encontrado existentes en los montes de los tres departamentos."

<sup>5</sup> Ibid., leg. 554, Guarnizo, May 28, 1744, *don* Juan de Rebollar, "Sobre talas hechas en las montes de la Montaña: y la necesidad de remediar este daños."

tax based on income, and a stronger state bolstered by an enhanced navy.<sup>6</sup> The forest conservation ordinance of 1748, therefore, was part of a larger body of reforms designed to increase state control over Spain's resources. It is fair to say that the forest ordinance was among Ensenada's top priorities, though, since it was among his earliest legislative achievements.

Ensenada could not accomplish much while Spain remained committed to the War of Austrian Succession. To persuade Fernando VI that Spain required peace to generate the finances to build up its navy, he wrote numerous well-reasoned memoranda. For example, in 1747 he wrote, "There is no power in the world that is in greater need of maritime forces than Spain; it is a peninsula, and has to protect its vast American possessions."<sup>7</sup> Having a large navy, Ensenada argued, would make Spain a pivotal player in European politics once again. He understood that Spain would not be able to match the power of the English navy, but he believed Spain could be powerful enough to tip the balance in the escalating rivalry between the French and English. Ensenada argued that once at peace Spain could build a force in eight years worth the respect of both rival countries.<sup>8</sup>

At the time, however, it was not clear which side Spain preferred to support. Both France and England had advocates at court. In addition to Ensenada, José de Carvajal also rose in the government of Fernando VI, and attained the posts of secretary of state, governor of the Council of the Indies, and president of the *Junta* of Commerce in 1746.

---

<sup>6</sup> John Lynch, *Bourbon Spain, 1700-1808*, (Oxford: Basil Blackwell, 1989), 164.

<sup>7</sup> Didier Ozanam, "La política exterior de España en tiempo de Felipe V y de Fernando VI," tr. by José Luis López Muñoz, in Menéndez Pidal, Ramón, Dir. *Historia de España, tomo XXIX: La época de los Borbones – La nueva monarquía y su posición en Europa (1700-1759)*. (Madrid: Espasa-Calpe, 1963-1985), 465.

<sup>8</sup> Lynch, *Bourbon Spain, 1700-1808*, 166.

Carvajal frequently disagreed on Spanish policy with Ensenada, and argued for supporting British interests. Ensenada thought that England was the greater threat and favored an alliance with France. Generally, however, the men agreed to pursue Spanish national interests by limiting foreign influence at court.<sup>9</sup> According to John Lynch, their contentious co-administration served as more of a “medium of consensus” than as “a house divided,” and would continue in that mode until Carvajal’s death in 1754.<sup>10</sup>

Despite disagreements with Carvajal over foreign policy and economic matters, Ensenada continued to pursue his agenda of reform. These early reforms, including the forest conservation ordinances of 1748, served to improve the underlying infrastructure that would support the growth of naval power.

### **Spain’s Naval Forest Conservation Ordinance of 1748 in Historical Context**

Among some of the best-known historians of Spanish forests and forestry, there is general agreement about the historical roots of the 1748 ordinance. Scholars of Spanish forestry credit Jean-Baptiste Colbert’s *Ordonnance des eaux et forêts* of 1669 as the inspiration and foundation for Ensenada’s 1748 ordinance, drawing on the notion that the later seventeenth century was a period of naval neglect in Spain, reversed by the Bourbon dynasty in the eighteenth century. Luís Urteaga wrote that the multiple pieces of Spanish forest legislation in the middle of the eighteenth century were “inspired directly by the French forest ordinance of 1669, which served as a model for forest legal reforms in

---

<sup>9</sup> Ibid., 161. For example, Carvajal and Ensenada agreed to appoint a Spanish Jesuit to the position of the king’s confessor in 1747 to replace a French incumbent.

<sup>10</sup> Ibid., 163.

diverse European countries.”<sup>11</sup> Erich Bauer Manderscheid, author of *Los Montes de España en la Historia*, agrees that the *Ordenanzas* of 1748 were inspired by Colbert’s 1669 *Ordonnance*.<sup>12</sup> In a study of naval forests of the eighteenth century, Gaspar de Aranda identifies the character of Spanish naval forestry as “French forest science.”<sup>13</sup> And Jesús Cobo de Guzmán y Lechuga notes that the “fundamental idea” behind the 1748 forest ordinance came from the philosophy of the French physiocrats.<sup>14</sup>

It is true that the Bourbons brought some administrative innovations to Madrid, such as the regional *intendentes* and the government secretaries that largely replaced the councils used by the Habsburg kings. However, one should not assume Spain’s 1748 ordinance resulted entirely from Bourbon reforms without a closer analysis of its contents. By attributing the inspiration for Ensenada’s 1748 ordinance to Colbert’s legislation, scholars seem to suggest that the crown sought outside help to oversee its forests. While Ensenada looked abroad for expertise in some naval matters, the Spanish government at this time had no shortage of forestry experts at home. Moreover, by the middle of the eighteenth century, the Spanish crown had managed its forests for naval interests for over two centuries.

In this section, I will analyze the topics and specific articles found in the navy’s forest conservation ordinance of 1748 in order to demonstrate both that the ordinance

---

<sup>11</sup> Luis Urteaga González, *La tierra esquilhada: Las ideas sobre la conservación de la naturaleza en la cultura española del siglo XVIII* (Madrid: CSIC, 1987), 128.

<sup>12</sup> Erich Bauer Manderscheid, *Los montes de España en la historia* (Madrid: Fundación Conde de Valle de Salazar, 2003), 243.

<sup>13</sup> Gaspar de Aranda y Antón, *Los bosques flotantes: Historia de un roble del siglo XVIII* (Madrid: ICONA, 1992), 55 and table, “Modelo de los aprovechamientos forestales de la marina.”

<sup>14</sup> Jesús Cobo de Guzmán y Lechuga, *Estudio sobre los Ordenanzas de Montes del año 1748 y del expediente sobre el régimen y administración de los montes de Segura de la Sierra y de su provincia marítima de 1811* (Caja de Jaén: Obra Socio Cultural, D.L., 1994), 211. By contrast, Urteaga argues that mercantilism was the motivation for the legislation.

incorporated earlier Spanish forestry rules and regulations, and that it territorialized such rules in new ways. The ordinance itself had no organizational subheadings, only seventy-nine articles.<sup>15</sup> I discuss the material by dividing it into five different thematic categories, including inspections, plantings, fines and licenses, benefits, and territoriality. I argue that the general perception of the ordinance as a French-inspired document is misleading and overlooks the inspiration that it drew from the forestry history of Spain itself.

The ordinance began with a statement on the poor conditions of naval forests. In the voice of the king, the document recognized “the decadent state” of Spanish forests, “especially those near the sea.”<sup>16</sup> The king attributed their poor condition to “the frequent unduly cuttings, damages and burnings” committed without proper employment of plantings and visitations, “as the laws of these kingdoms and various resolutions from kings before me prescribed.” From the beginning, he invoked a lineage of Spanish kings who had attempted this sort of thing before. The preamble ended by stating that forest conservation also provided a “useful service to my vassals,” referring to the benefits they derived from forest resources.

This had been a common way to introduce forest legislation in early modern Spain. In 1518, Carlos I’s and Juana’s *Pragmática*, which was reissued several times in the sixteenth century, began with the recognition of damage and destruction to their

---

<sup>15</sup> *Novísima recopilación de las leyes de España* (Madrid, 1804-1829), tomo III, libro VII, título XXIV: “De los montes y plantíos, su conservación y aumento,” ley XXII, 532-543.

<sup>16</sup> “Hallándome enterado del decadente estado de los montes, con especialidad los inmediatos a la mar, a causa de las cortas que indebidamente se han hecho con mucha frecuencia, talas y quemas, y el ningún cuidado que se ha tenido y tiene en atender a su importante reparo por medio de los plantíos y visitas, como lo prescriben las leyes de estos Reinos, y varias resoluciones de los Señores Reyes mis antecesores, dirigidas al mayor aumento y conservación de los montes, de lo qual se sigue tanta utilidad a mi servicio y a mis vasallos.” The forests nearest to the sea had been the greatest concern of the crown since naval forestry took shape in the middle of the sixteenth century due to issues of accessibility.

forests, and they lamented how few new trees were being planted.<sup>17</sup> Toribio Pérez de Bustamante had expressed the idea that forest conservation would be good for vassals as well as for the king in 1650, as a kind of enticement to increase plantations. In 1675, Queen-regent Mariana's *real cédula* began in a similar manner by stating that people were destroying the forests of Galicia, and that conservation techniques were not working.<sup>18</sup> In the 1720's, several bureaucrats similarly warned that forests all along the north coast were disappearing, and methods to stop deforestation were not effective.<sup>19</sup> In fact, the crown had always recognized the dependence its vassals had on forest products, from building material to pig fodder. All of these government officials tackled problems of deforestation and challenges of effective enforcement. Forest legislation and state forestry policies since the sixteenth century aimed to address the crisis of increased competition over increasingly scarce resources in the coastal forests of Spain for naval shipbuilding interests.

### *Inspections*<sup>20</sup>

The first article of the 1748 ordinance stated that *intendentes* of the navy from each of the three naval departments would continue to be in charge of the coastal forests. Their local representatives (*subdelegados*) would help to carry out policy. *Intendentes* reported to the crown on private forests, common woodlands, and other various public lands in the areas that required visitations. *Visitadores* had to make annual visits to

---

<sup>17</sup> *Novíssima recopilación*, tomo III, libro VII, título XXIV, ley II. Also, see above, pages 44-5.

<sup>18</sup> AGS, Marina, leg. 571, February 10, 1675. Also, see above, pages 117-20.

<sup>19</sup> *Ibid.*, leg. 552, De officio, Madrid, August 27, 1723.

<sup>20</sup> The articles of the ordinance I consider part of this category include numbers 1-6, 15, 23, 33, 35-41, and 44-46.

forests, record the latitude of the location, its distance from the coast, the potential for road construction to the forest, and the exact quantity of trees, dividing them into three categories of “new,” “growing,” and “old.” The department *intendente* could request more frequent inspections if he felt it was necessary. Not all trees were of interest to the navy, so the ordinance specified eleven tree species the *visitadores* needed to identify. These included common oak, holm oak, cork oak, black poplar, white poplar, ash, alder, walnut, beech, chestnut, and pine. The *visitadores* had to specify which tree was most prevalent in each location in order to know which species grew best. This helped the inspectors decide which trees to plant in new plantations.

Justices from each location had the duty of providing the *visitador* with the local plantation testimonies, or the records of cuttings and plantings. Each year, the inspector visited the town and went out to inspect the forests with a local bailiff and scribe. Each night after a full day of forest inspections, the scribe had to enter information regarding each forest’s size and general quality in foliated registers under proper headings. The register had to include information on all the trees planted during the year, at least three for each citizen, and the number of all the trees cut down. For each tree cut down, the register had to say who did it, for what reason, and which type of license they received to do it. They made copies of these registers for the provincial and local naval ministers, the *intendente* of the department, and the *Secretario del Despacho de la Marina* (Secretary of the Naval Office). Salaries for the bailiffs and scribes came from fines collected from the justices and citizens. In towns that complied fully with all the regulations, the salaries came from the extra fines from other towns. Forest inspectors could not accept additional salaries or rewards, nor claim anything other than a village house in which to live while

performing their duties. The provision meant to eliminate the problem of absenteeist bureaucrats, who had inspired complaints in the 1720's.

Each villager had to plant three trees of the type specified by the forest inspector. The ordinance made clear that no private forest owner or town could claim a traditional right, or *fuero*, to excuse themselves from the duty of planting. The only people that could be excused were disabled citizens and "poor widows" ("viudas pobres") who did not have any children over eighteen years old living with them. Justices had the responsibility to oversee the distribution of the work and the proper planting procedures.

In some cases, naval ministers or forest inspectors called shipbuilding specialists from the coast into the forests to examine the quality of plantations. The specialists could judge whether the young trees would grow to produce suitable shipbuilding timber. The forest inspectors had to mark the trees they claimed for naval use, and to order replacement plantings. Inspectors also involved themselves in forestry matters not directly connected to shipbuilding. For example, they had the duty of arbitrating price disputes between firewood sellers and *asentistas*, who were under contract to supply timber for the navy.

It should be clear that forest inspection procedures described in the 1748 ordinance had much in common with earlier practices. José Patiño created the departmental administrative organization in 1726, placing the *intendentes* at the head of each department. They and their *subdelegados* and forest inspectors had evolved from the position of forest superintendent used in the sixteenth and seventeenth centuries. It had been the superintendent's duties to make annual visits, consult the annual planting testimonies, and bring along local bailiffs and scribes. Mariana of Austria had requested

the expertise of shipbuilders to assess the suitability of timber in Galicia's plantations. She had also asked for more kinds of geographic categories in the forest inspections to help understand the accessibility of forests and their potential productivity. The innovative use of three descriptive categories, "new," "growing," and "old," in the 1748 ordinance may be seen as an extension and continuation of such practices. The 1748 ordinance gave the local justices greater responsibility, especially with regard to assigning and distributing the planting obligations to the citizens. Earlier, this had been the duty of the forest superintendent. Perhaps, reports of overextension by Barros, Pérez de Bustamante, and others in earlier times, had led the crown to realize the limits of the government officials and recognize the benefits of delegating some of their responsibilities to the local citizenry.<sup>21</sup>

### *Planting*<sup>22</sup>

Rules for planting in 1748 also had much in common with earlier practices. New plantations needed to be in places that received plenty of sunlight but were sheltered from heavy winds. People were to plant seeds from the largest and strongest oak trees. The winter was the best time to plant, especially January. The ordinance stated that one should "open tiny grooves" ("se abrirán pequeños surcos") in the soil and place the seeds inside by hand, then close the grooves with the same dirt, being careful not to trample on the seeds. People should leave them like that for the "beneficio del tiempo." Nonetheless, they could not leave things completely alone once they planted the seeds, because some

---

<sup>21</sup> See David Goodman, *Spanish Naval Power, 1589-1665: Reconstruction and Defeat* (Cambridge: Cambridge University Press, 1997), 73.

<sup>22</sup> For this category, I include articles 7-16.

care was necessary to help the plantation grow successfully. Every year, people had to add manure and root out harmful weeds. Grasses and other harmless vegetation should be allowed to remain, because they retained the moisture and dew of the summer. At the three-year mark, and each year after that, people had to prune branches delicately and leave only the main trunk and the strongest branches. This could help struggling trees grow better. Pruning happened between November and February during waning moons. During these early stages, people had to be particularly vigilant against the entrance of livestock and other animals that could gnaw away at and damage the young trees.

When the trees were of a certain size, 3 ½ to 4 *pulgadas* in circumference and 3 ½ to 4 *varas* in height,<sup>23</sup> the people had to transplant them from the nursery to more protected areas of the forests. The times to do this were between the middle of December and the middle of February during a waxing moon. The ordinance stipulated that the distance between trees depended on the terrain, with poorer terrain requiring trees that were farther apart. Generally, people planted according to what they had seen in the nearby forests or according to what knowledgeable townspeople said. The hole had to be about one *vara* deep and wide to provide room for the roots. The dirt should be soft and should fully cover the roots once the tree was in the hole. The dirt should cover enough of the base of the tree so it stayed strong against the forces of winds and cattle. If the tree was still weak, people could tie a sturdy stake against it to keep it upright. Once successfully transplanted, people had to protect the trees by observing the same rules of the nurseries.

---

<sup>23</sup> A *pulgada* is about 1 inch or 2.54 centimeters. A *vara* is about 33 inches or 83.5 centimeters.

These provisions in the 1748 ordinance also echo earlier precedents. In Barros's letter to Riva Herrera in 1594, he described the need for a hole of similar size to ensure the roots took to the soil and to collect moisture for the early stages of growth. He knew people had to plant trees farther apart in poorer soils. It had also been standard practice to plant in the winter, since it was easier to deal with trees without their leaves and with a larger labor supply than in the summer. In 1650, Pérez de Bustamante clearly stated that the period between the middle of December and the middle of February was the best time to make cuts and plantings. Some of the Habsburg forestry documents even included concerns not addressed by the 1748 ordinance, including the use of thornbushes to protect plantations against livestock, and the need for vigilance not just against animals, but also against the ever-present danger of forest fires.<sup>24</sup>

#### *Fines and licenses*<sup>25</sup>

The idea of requiring licenses to cut down trees in order to curb deforestation dated at the latest to the Catholic Kings and their *Pragmática sobre cortas* of 1496.<sup>26</sup> Over time, the crown made such regulations more forceful, and installed more royal officials to oversee behavior in the forests to help enforce the law, but enforcement remained a serious challenge throughout the early modern era.

The 1748 ordinance made it clear that people still required licenses to cut down trees. The removal of single branches from a tree during pruning, or from the ground did not require a license, since these practices would not harm the trees. Article 21 stated that people

---

<sup>24</sup> See Barros's letter to Riva Herrera in AGS, Guerra Antigua, leg. 403, folio 102. Also, see above, pages 80-4.

<sup>25</sup> For this category, I include articles 17-21, 31-37, 41-43, and 49.

<sup>26</sup> *Novísima recopilación*, tomo III, libro VII, título XXIV, ley I. Also, see above, 26-27.



could not reduce a tree to a state where it could not produce new branches, however. A set of drawings from 1773 [Figure 3] helps to illustrate which kinds of cuts would or would not do long-term damage.<sup>27</sup> The top row shows cuts that would allow new branches to sprout. Several examples in the bottom row show trees that had been cut in ways that would not allow for regeneration; these types of cuts required licenses. An interesting part of this *demonstración* is that the author stated that the pruning techniques were typical of Spain and had been described in the 1650 Instruction of Toribio Pérez de Bustamante.

The main condition that came with licenses was that people had to plant three trees for each one removed. As stated earlier, the town had to keep a record of all its licenses and cuttings. The crown officials ordered fines based on the testimonies written in these books. Towns could incur fines for not making nurseries, not planting, not taking the correct precautionary measures against damages, not preventing fires, not complying with the visitations, cutting trees without licenses, or not adhering to any of the other regulations described in the ordinance. When ordering fines, the crown official had to state which provision had been broken, since article 42 stated that fines had to be justified. The forest inspectors took confessions from the lawbreakers and, with the assistance of the town's *asesor*, issued sentences. Those charged could make an appeal before the *intendente*, whose sentence could be appealed to the *Secretario del Despacho de la Marina*. The local justices were responsible for collecting and submitting the fines. If certain regions felt they needed some extra help managing their forests, they could request to have a naval minister appoint a guard, who would have authority to apprehend

---

<sup>27</sup> AGS, Mapas, Planos, y Dibujos, 57-013.

criminals. Heavy fines could result from sending wood to foreign domains without expressed approval from the king himself. Here, too, the 1748 ordinances echoed earlier practice. Spanish kings at various times since the Middle Ages had outlawed the export of timber, since it could easily be used as a war material by their enemies.

### *Benefits*<sup>28</sup>

The 1748 ordinance described ways that the local populations benefited from observing the laws of forest conservation, much like other forest legislation from the past. Pérez de Bustamante emphasized the material benefits people enjoyed from their trees, even if the navy laid claim to them, and described the financial benefits that they could enjoy from years of caring for their plantations. Ensenada's ordinance similarly emphasized material and financial benefits. The ordinance noted that towns could make a substantial amount of money by selling firewood surplus to towns that were located far from forests, which was a practice common since the Middle Ages.<sup>29</sup> Another incentive for towns to plant more trees was the offer of one *real* for each cubic *codo* of wood cut from their forests for building and repairing vessels in the royal armada.<sup>30</sup> In short, towns could turn their plantations into an investment that would help them pay taxes, tribute, fines, and other municipal obligations. They could put their profits toward public works and new plantations, but the towns had to report any wealth they generated from wood sales to the naval *intendentes*.

---

<sup>28</sup> For this category, I include articles 22, 24-30, and 32.

<sup>29</sup> María del Carmen Carlé, "El bosque en la Edad Media (Asturias-Leon-Castilla)," *Cuadernos de historia de España* 59-60 (1976): 346. Also, see above, 38.

<sup>30</sup> Article 27 made clear that the measuring of cubic *codos* would be made after the wood had been cut, smoothed off, and prepared for river transport.

The ordinance attempted to balance the interests of those working for the crown with local needs for wood. Although, while *asentistas* paid the same prices for timber as any townspeople, the regulations of the ordinance gave them a certain privileged position regarding access. *Asentistas* acquiring wood for artillery and ironworks, as well as those supplying any industry that served royal interests, had the opportunity to buy firewood surpluses before ordinary people who needed timber. However, *asentistas* working in the forests had to leave the branches and wood leftover from cuts for local domestic use.

### *Territoriality*<sup>31</sup>

The most innovative and transformative aspect of the 1748 ordinance for state forestry in Spain was the multi-scalar territoriality it imposed over all coastal forests. No other Spanish forest legislation for the conservation of naval timber included so many forests. Organizationally, José Patiño's naval administrative changes from 1726 served as the basis, but criteria for identifying the most important spaces and methods for controlling behavior within those spaces resulted from years of accumulated experience and geographic knowledge. The 1748 ordinance was multi-scalar because naval forest administration no longer operated with one forest superintendent for each province, as the Habsburgs had done. Rather, the navy had an *intendente* at the head of each naval department, ministers for each province within the department, and several more forest guards and inspectors within each province.

The last thirty or so articles of the 1748 ordinance identified the territories in which its rules applied. Each of the three naval departments contained smaller provinces.

---

<sup>31</sup> For this category, I include articles 3, 13, 24, and 52-79.

For each province, such as Ferrol or Tuy, both in Galicia, the ordinance listed several smaller jurisdictions, such as Villanueva de Redondela and Vigo, both in Tuy. One region, the Sierra de Segura, received special attention. While most locations appeared in list form with several nearby towns, Segura alone received five articles to describe its reestablished river transport system for supplying pine timber to the arsenals at La Carraca and Cartagena, and to identify its territorial divisions. The side of the sierra that fed the Guadalquivir and Guadalimar Rivers that flowed westward fell within the Department of Cádiz, and the side that fed the Segura River served the Department of Cartagena. Article 71 mentioned that the sierra was sparsely populated, and surmised that it would be difficult to encounter or identify delinquents who caused damage to the forests there. The typical laws of forest observation and oversight depended on a great deal of communal cooperation. The Sierra de Segura lacked the population density of coastal forest villages, and would therefore have trouble enforcing the regulations of the ordinance. As a result, the article charged the *intendente* of Cádiz with the task of informing the crown of suitable measures and rules to overcome that problem.

Even within the smallest jurisdictions listed in the ordinance, a spatial hierarchy existed. In any forest, for example, towns and other forest owners were required to reserve the most productive terrain that was nearest a port or coastline for growing oak trees of the highest quality. It listed several regions in Asturias specifically, because they grew oak trees of superior quality faster than other places. In these areas, people were told to cut down and remove old and useless trees (useless for naval purposes), and make room for new oak trees. These areas met certain highly valued geographic criteria for

naval interests, and the navy made its strongest presence felt in these areas by carefully controlling the behavior of people in local forest communities.

The realities of early modern society and the limitations of early modern government and technology meant that the crown could not control all forests with the same intensity. Too many people in the king's realms relied on timber resources for the crown to prevent all domestic use of coastal forests. If the crown attempted to prevent citizens from gaining access to forest resources entirely, the crown would either face the impossible task of enforcing the measure or the undesirable social unrest that would come from it. Article 30 expressly recognized this point by stating, "Because the absolute prohibition of cutting wood and trees could be prejudicial to my vassals, [who are] short of the necessary materials for building and repairing houses, mills, and other things that require the use of wood, whose lack I desire they do not experience, the *intendentes* will order their *subdelegados* to allow citizens to cut trees when they need to."<sup>32</sup>

There had been signs of tension between how much control the crown desired and how much it could effectively employ since the sixteenth century. When Cristóbal de Barros was sent to oversee forest conservation in northern Spain by Felipe II, he was told to use no more than persuasion to induce the local populations to plant more trees. The naval forest territoriality of the 1748 ordinance grew out of a long history of state forestry, and clearly relied on forest inspections, plantations, prohibitions and incentives developed for a specifically Spanish context over the previous two centuries.

---

<sup>32</sup> "Porque la absoluta prohibición de cortar maderas y árboles podría ser perjudicial a mis vasallos; faltándoles el material necesario para la fábrica y reparación de sus casas, para molinos y otras cosas de preciso consumo de maderas, cuya falta deseo no experimenten, los Intendentes mandarán a sus Subdelegados, que permitan la corta de árboles que hubieren menester, precediendo a ella, que el particular o comunidad que necesite madera la pida por escrito al Subdelegado, declarando que porción, y el fin para que la solicita."

## Other Forest Legislation, 1748-1751

Ensenada and the Spanish government were far from finished with forestry matters after January 31, 1748. The peace of Aix-la-Chapelle ended the War of Austrian Succession on October 18, 1748, and put the crown in a strong position to implement more of Ensenada's reforms. The crown recognized the effectiveness of these comprehensive rules in naval forests, and later that year, it took steps to employ them in Spain's interior forests near the court. Over the next few years, the Spanish government issued several more pieces of forest legislation, one of which placed forests twenty leagues from the court under direct crown supervision.<sup>33</sup> This ordinance, issued on December 7, 1748, aimed to address the quickly dwindling supplies of timber in the sierras near Madrid and the royal palaces. During Felipe V's reign, the court had carried out major construction and reconstruction projects of royal palaces. The Royal Palace in Madrid was built after a fire destroyed the old palace, the Alcázar, in 1734. Felipe and his queen, Isabel Farnese, made improvements at the palace of Aranjuez, south of Madrid, after 1730, and a fire there soon after required further renovations. Improvements were also made during the reign at El Pardo, north of Madrid.<sup>34</sup> Such massive building projects during the reign of Felipe V may have caused severe deforestation in the area, prompting the ordinance of December 1748.

---

<sup>33</sup> *Novísima recopilación*, tomo III, libro VII, título XXIV, ley XIV. The original ordinance set the limit at thirty leagues around the court. This must have changed at some point between December, 1748, and the following year, because early forest inspection reports included territory only twenty leagues out. In 1755, the limit changed again when the reports included territory twenty-five leagues from the court.

<sup>34</sup> Henry Kamen, *Philip V of Spain: The King who Reigned Twice* (New Haven: Yale University Press, 2001), 199.

The ordinance aimed to address the problem of deforestation by employing naval forestry techniques, but placing the *corregidores* in charge instead of the naval *intendentes*. As in the naval forests, the *corregidores* gathered testimonies about plantings, collected fines, and oversaw annual inspections with local experts. Cutting trees down required licenses, and damages of any kind otherwise resulted in fines that increased for multiple offenders. The forests along the banks of the Manzanares River in Madrid nearest the court received particular attention. The same species of trees valued by the navy remained important for the crown, since these species were common, and were used for most domestic needs and building projects.

A set of undated revisions to an early draft of this forest ordinance exists in the archive of Simancas. The editor was an official named *don* Alonso Pérez Delgado.<sup>35</sup> A copy of the draft is not extant; we only have the suggested revisions. They provide an interesting window into how the government considered extending state forestry practices from coastal areas to the interior of Spain. The editor took the navy's earlier ordinance as the model. He began by saying the introduction on the draft "is very [read: too] erudite. Perhaps it would be better to adopt the introduction from the Forest Ordinance made for the navy: it refers to the damage that is occurring...and the necessity to apply remedies."<sup>36</sup> The editor said the draft was "full of defects in its explanation" and it had "too much insubstantial material."<sup>37</sup> The full draft apparently required a lot of trimming. It also required slight revisions in its policies. For example, the draft evidently expressed

---

<sup>35</sup> AGS, Marina, leg. 571, "Borrador, sin fecha, de reparos a la ordenanza de montes de lo interior del Reino. Es de *don* Alonso Pérez Delgado."

<sup>36</sup> "Aunque la introducción de esta ordenanza esta muy erudita, parece que será mejor que se adopte a la introducción de la ordenanza de montes hecha por Marina: esto es, refiriendo el daño...y la necesidad de aplicar remedio."

<sup>37</sup> "La ordenanza esta llena de defectos en su explicación...demasiada extensión en materias insubstanciales."

an obligation for everyone to plant ten trees each year, which the editor said was excessive, and he suggested lowering it by half. We know that at least some of his suggestions were incorporated into the final version, because article eleven of the December 1748 ordinance required each citizen to plant five trees per year, not ten.

Finally, the suggested revisions to the draft provide some insight into the crown's future goals for state forestry. It seems that the crown had considered having one minister in charge of all of Spain's forests. The editor wrote, "It is true that to achieve this end, it is very advantageous that everything proceeds under only one hand."<sup>38</sup> However, legislation issued on December 12, 1748, reveals that at this point one minister would have been unable to oversee all of Spain's forests.<sup>39</sup> The ordinance chose two ministers from the king's *consejo* to be in charge of conserving his forests in the interior. One of them would be in charge of forests twenty leagues from the court, and the other would be in charge of the provinces and towns that fell outside both this interior zone and the navy's coastal zone. The duties of the forest minister in the middle zone between the navy and the court are unclear, but they were probably not too different from the other zones. The head minister had to submit an annual report of plantations, just like his counterpart in charge of forests closer to Madrid. In short, by the end of 1748, the Spanish state claimed regular administrative authority over all of Spain's forests, a dramatic extension of state forest territorialization.

By the summer of 1749, the crown already faced problems of enforcement. The king responded to tacit resistance in Guipúzcoa with an ordinance written especially for

---

<sup>38</sup> "Verdad es que para lograr el fin es muy conveniente que todo camine bajo una sola mano."

<sup>39</sup> *Novísima recopilación*, tomo III, libro VII, título XXIV, ley XVI.

the province.<sup>40</sup> In one sense, the creation of a separate piece of legislation for the Basque province might dispel the notion that Spain had a uniform national forestry code.

However, evidence mentioned above indicated that the code was far from uniform at its inception. Some areas already had special distinction, whether as a naval province in the high sierras near Segura or in a particularly suitable area for growing oak trees in Asturias, all of which required separate rules and regulations. Also, this was not the first time the crown faced resistance from Guipúzcoa over forest policy. The two sides had a long relationship of back-and-forth disputes over legitimate practices that usually ended with some compromise.

This instance was no different. The crown granted the provincial government greater authority in overseeing the rules and regulations of the 1748 ordinance. However, at the same time the crown extended a stronger form of state territoriality through the legal system. The state granted Guipúzcoans the right to challenge articles in the ordinance, but it maintained ultimate authority over the forests by settling the disputes within naval courts, in effect extending the jurisdiction of Secretary of the Naval Office. If the local government opposed some of the regulations, they had recourse to the navy's provincial minister, who would hear the complaint. If he found the complaint justified, he would remit the testimonies to the provincial congress (*Diputación de la Provincia*). If the settlement reached there did not satisfy the parties involved, then the account would be sent to the king's Secretary of the Naval Office. In short, the ordinance set up a system that would allow Guipúzcoans to maintain some of their traditional practices, if found agreeable by a royal judge. In 1751, the crown issued more legislation regarding the

---

<sup>40</sup> Ibid., ley XXV.

naval forests to give the local justices even more authority. They now could grant forest cutting licenses and oversee the behavior of forest guards appointed by the naval minister, in addition to presenting books of testimony to the forest inspectors.<sup>41</sup> The special legislation freed royal bureaucrats from several burdensome tasks, which were delegated to the local justices, and it settled a potentially fruitless and time-consuming dispute with local authorities.

The years 1748-1751, therefore, extended naval forestry regulations to all of Spain. The major question remained whether these forest ordinances would produce results from which the navy (and the royal court) could derive benefit.

### **Resistance to the New Legislation**

The resistance from Guipúzcoa had been peaceful, characterized by non-compliance. Reactions to the forest ordinances of 1748 were sometimes much more violent. In this section, I provide various examples of resistance to show some of the friction caused by the introduction of the national forestry codes of 1748. In 1751, not far from the royal palace of Aranjuez in a forest that belonged to a town called *don* Fadrique, two men were caught cutting down some trees. The two men were from a neighboring town that had customarily been able to enter and use the forest. The mayor of the town, Manuel de Mendoza, enforced the regulations of the ordinance that pertained to forests twenty leagues from the court, and arrested the two men for cutting without a license. This legislation was still new to the area and the mayor had only been carrying out his

---

<sup>41</sup> Ibid., ley XXIII, articles 4 and 12 respectively.

recently specified duties, but the two men responded to their apprehension by killing Mendoza.<sup>42</sup>

In response, early in 1752 *don* Blas Jover, the crown-appointed forest superintendent for the area twenty leagues from the court, visited the town in the company of twelve armed soldiers and a lawyer to verify the crime, listen to testimony, and provide a verdict and sentence. *Don* Joseph Moñino was the crown-appointed lawyer, and he needed only twenty days to find the two men guilty of murder and of disobeying the forest ordinance. At some point, one of the men fled and became a fugitive. The other man, however, was incarcerated in a royal prison.

In the district of Jerez (Andalusia) in 1748, a trigger-happy forest guard named Juan Muriel killed a citizen of the nearby town of Alcalá de Guadaíra named Juan Jarillo, who, it turned out, had only been setting rabbit traps in the forest. The Duquesa de Medinaceli wrote to the *intendente* of Cádiz about the matter, who imprisoned the guard.<sup>43</sup> In 1749, near Alcalá de Henares, located within twenty leagues of the court, *don* Blas Jover examined a case involving shepherds who destroyed the town's forest plantations. Rather than punish the shepherds, however, Jover reprimanded the *corregidor* and the *regidores* of Alcalá for allowing such abuses to unfold right under their noses. He even sent the town's scribe to prison in Toledo.<sup>44</sup>

Several disputes involved questions of exemption. The Marqués de la Candia wrote to *don* Francisco de Varas, the *intendente* of Cádiz, to ask if the military orders had exemption from the rules of the ordinance. The reply was predictable, "Que no hay

---

<sup>42</sup> AGS, Marina, leg. 558, March 10, 1752, *don* Blas Jover.

<sup>43</sup> *Ibid.*, leg. 571, March 26, 1748, Cádiz, *don* Francisco de Varas.

<sup>44</sup> *Ibid.*, leg. 555, December 22, 1749, *don* Blas Jover.

exento nadie,” no one was exempt.<sup>45</sup> The Duquesa de Infantado wrote to the *intendente* of Ferrol relating that people in Potes, a small town in Cantabria near the border with Asturias, managed their forests according to ordinances approved by the crown from 1622 and 1678. She said people had access to timber for building material and for fuel without problems. The town had continued to abide by these older regulations for two years after the king issued the 1748 ordinance, until a forest inspector put a stop to unlicensed cuttings. The Duquesa asked for the town to be exempt from the ordinances, since the regulations from the last century had been working fine. That, too, was unacceptable to the navy, and the response was for the town to observe the new regulations.

Most people expressed resistance in other non-violent ways directed toward the forest inspectors. There is evidence of non-compliance in Gibraltar in December of 1749, about which a minister of the navy reported to the Department head, *don* Francisco de Varas, who commanded the minister to act immediately and punish those culpable.<sup>46</sup> In 1749, people from the town of la Puebla, near Seville, complained that the forest guards were “public criminals” (“ladrones públicos”). Ensenada ordered the *intendente* of Cádiz to examine the case. If he found the town’s complaint justified, he would punish the guards. If not, the town had to pay the guards’ salaries.<sup>47</sup> Such cases were common and verdicts could fall either way.<sup>48</sup>

Some instances of non-violent resistance resulted in severe penalties. One case involved the area around the town of Pliego, which was not far from Murcia. The Pliego

---

<sup>45</sup> Ibid., leg. 571, August 27, 1748, El Marqués de la Candia.

<sup>46</sup> Ibid., leg. 555, 23 December 1749, Gibraltar.

<sup>47</sup> Ibid., 1749, La Villa de la Puebla.

<sup>48</sup> Bauer, 470.

River flows into the Segura River, so the area came under the jurisdiction of the Department of Cartagena, according to the 1748 forest conservation ordinance. While the *subdelegado de la Marina*, don Diego Antonio de Molina, carried out his visitation of the area, a large crowd composed of local mayors and townspeople bombarded him with insults. Some people received fines, but the principal aggressors were sent to presidios in North Africa. One mayor named *don* Gonzálo Martínez was sent to Oran for four years.<sup>49</sup> In 1751, several mayors near Huete, which was located within twenty leagues of the court, complained that a man named Juan Serrano repeatedly cut down and damaged trees in their jurisdictions without license. *Don* Blas Jover examined the case, found Serrano guilty, but said the town of Huete had no secure jail. He decided that it would be too costly to send Serrano to royal prison, so he sentenced him to four years in a presidio.<sup>50</sup>

The crown was capable of revising sentences and fines if provided with persuasive evidence. Some locations wrote to the naval *intendentes* about how the unsuitability of their terrain prevented successful plantations. The crown typically responded by telling the town they had failed to follow the ordinance's rules for planting, and they should try again.<sup>51</sup> However, a record of fines collected from Valencian towns in the district of Alzira in 1754 indicates that in some cases the land really was unsuitable for plantations.<sup>52</sup> In Alcazer, the *intendente* of Cartagena revoked a fine given for not starting a plantation because of the "poverty of the land" ("estrechez de la tierra para el plantío"). A forest inspector also absolved the town of Yátova of the obligation to have a

---

<sup>49</sup> AGS, Marina, leg. 555, October 4, 1749, *don* Francisco Barrero.

<sup>50</sup> *Ibid.*, leg. 557, August 25, 1751, Orcajada.

<sup>51</sup> For one example, see *Ibid.*, February 23, 1751, La Villa de Elche.

<sup>52</sup> *Ibid.*, leg. 559, August 28, 1754, "Resoluciones."

nursery. In some instances, the navy lessened the original fine for various reasons. For example, although a forest inspector initially fined the town of Almutajes for not submitting its testimonies, the *intendente* revoked the fine after receiving them from local justices. This document also reveals how towns committed offenses such as failing to prune properly or clear out weeds, which typically amounted to about two *pesos* for each year for each plantation.<sup>53</sup> Towns received fines for having no nursery or no book of testimonies, which normally came to four *pesos* each. One town made a nursery two years too late and had to pay fines of four *pesos* for each of those years. Annual fines collected by the state could be quite substantial.<sup>54</sup> The total amount collected from the interior forests twenty leagues from the court in 1750 came to 604,400 1/3 *maravedís*, or 17,776.16 1/3 *reales*. For some comparison, in Madrid at this time, daily wages were about 15 *reales* for master weavers, 5 *reales* for journeymen, and 4 *reales* for shepherds.<sup>55</sup>

### **Forest Inspection Reports after 1748**

Despite causing many problems, the ordinances undoubtedly led to the planting and pruning of millions of trees, and the collection of more detailed reports on forest conditions from all over Spain. In the years after 1748, the crown received numerous “*estados de montes*,” which set a base of forest information on which it could measure future forest growth. Compared to the forest information-gathering projects

---

<sup>53</sup> A *peso*, also *peso de a ocho reales*, equaled 272 *maravedís*, and for purposes of conversion it equaled 20 *reales de vellón*. Lynch, *Bourbon Spain, 1700-1808*, xi.

<sup>54</sup> AGS, Marina, leg. 556, don Blas Jover, “Razón de lo que ha pertenecido a S.M. por las Quartass partes de penas impuestas....”

<sup>55</sup> Lynch, *Bourbon Spain, 1700-1808*, 238.

commissioned by the *Almirantazgo* during 1737-9, these reports were more numerous and more thorough, aided by guidelines set out in the 1748 ordinances.

For the navy, these reports consisted of similar, but variously organized tables and texts that characterized forests, their accessibility, and their suitability for shipbuilding. Department *intendentes*, naval ministers, forest inspectors, carpenters, scribes, and thousands of citizens contributed to these reports. Local populations provided testimonies on the quality of the land and forest property divisions. Carpenters used their sylvan expertise to inspect the species, ages, and quality of trees in each district. Scribes collected and recorded the forest numbers, the socio-geographical data, and local testimonies. Naval ministers oversaw the operation and prepared the final reports for the department heads.

For the rest of Spain, the two royal forest ministers appointed by the king in 1748 produced and submitted annual reports from each forest administration zone. *Don Blas Jover* produced reports on forests twenty leagues from the court, and *don Joseph Bermúdez* reported on forests in the middle zone of Spain, outside the jurisdictions of the court and the navy. The information desired by the crown, as described in the ordinances of 1748, included specific species of trees, ages of trees broken down into three categories, and basic accessibility conditions, such as distances to the nearest port, and options for transporting timber to nearby rivers. Some reports included the information required, some provided less information, and some provided even more information than the ordinance required, depending on the naval minister leading the visitations.

### *Interior Forest Reports*

Jover produced his first report on forests twenty leagues around the court on July 28, 1749. It included data on the numbers of towns and people in each of the fourteen *partidos* that fell within twenty leagues of Madrid.<sup>56</sup> Other information included numbers of trees planted, sown fields created, and numbers of inspected forests, all according to testimonies submitted by the respective *corregidores* and *alcaldes mayores*. However, Jover's notes stated that the testimonies did not conform to the guidelines of the December 7, 1748 ordinance. Many places did not send testimonies, and the ones he did receive suffered from the "incompetence, negligence, or poor intelligence of the executors."<sup>57</sup> Due to these problems, Jover stated, this report stood only as "an example in form for subsequent [reports]." Clearly, he was disappointed in the first attempt, despite recording that 254,528 trees had been planted.

The following year, Jover issued a more robust report, including a list of fines collected from each *partido*.<sup>58</sup> After thirty-seven pages of data on each town, Jover provided a summary table similar to the previous year's. The report stated that the population of 51,502 (and a half)<sup>59</sup> planted 244,678 trees since the last collection of testimonies, indicating that people came close to meeting the ordinance's obligation to plant five trees per person, with an average of 4.75. They came up short by 12,835 trees.

---

<sup>56</sup> AGS, Marina, leg. 555, Madrid, July 28, 1749, "Plano en que se demuestran los catorze Partidos que se comprehenden en las veinte leguas de la circunferencia de esta Corte. The fourteen *partidos* included: Madrid, Toledo, Cuenca, Segovia, Ávila, Guadalajara, Ocaña, Alcalá, Huete, Talavera, Almonacid, Uclés, Yllescas, and Manzanares."

<sup>57</sup> "...por impericia, descuido, o mala inteligencia de los ejecutores."

<sup>58</sup> AGS, Marina, leg. 556, *don* Blas Jover, "Relación de los lugares que comprehende la comisión de plantíos de las veinte leguas de la circunferencia de esta corte" and "Razón de lo que ha pertenecido a S.M. por las Quartas partes de penas impuestas...."

<sup>59</sup> The report showed several towns counted ½ of a person, but did not explain the criteria for counting only ½ of a person. Probably there was some categorization by age and ability.

Totals from Jover's 1751 report included 73,914 people and 303,670 trees planted, down to an average of 4.1 trees per person. It also reported that 2,859,481 trees had been pruned and 21,560 *fanegas* of land had been sown.<sup>60</sup> The next report, from 1753, indicated that 168,198 trees had been planted by 56,552 people, down again to an average of 2.97 trees per person.<sup>61</sup> Perhaps due to the decreasing average of trees planted by each person, in 1755 the crown extended the jurisdiction to include towns 25 leagues from Madrid. However, the average continued to drop to 2.33 trees per person.<sup>62</sup> Pedro Vidal replaced Jover, who died in 1754. He oversaw the 1756 inspection, and restructured the data, replacing the category "trees planted" with "trees planted and in existence," obscuring the number of trees planted per person that year.<sup>63</sup>

The decline in the rate of trees planted per person is not surprising, considering that suitable land had already been used in many *partidos*, limiting the space for new healthy growth. While the crown was unable to put the ordinance into full practice, it managed to get a population of about 60,000 people living twenty leagues around Madrid to plant 863,018 trees between 1748 and 1755.

Meanwhile, *don* Joseph Bermúdez collected testimonies from scribes who visited forests in 87 *corregimientos* between the zones of the court and the navy. His report from 1753 provided totals on the previous four years. The year 1749 included the smallest total of trees planted, and had been only an important first step to enforce the ordinance, much

---

<sup>60</sup> AGS, Marina, leg. 557, Madrid, September 2, 1751, *don* Blas Jover, "Remite estado anual de los montes de las 20 leguas de esta corte." When a unit of area, a *fanega* is the amount of land required to grow one *fanega* (amount) of the dry good, about 3.5 square km or about 2.2 square miles.

<sup>61</sup> *Ibid.*, leg. 558, Madrid, November 8, 1753, *don* Blas Jover, "Estado general de las ciudades, villas, y lugares que comprehenden las veinte leguas de la circunferencia de esta corte."

<sup>62</sup> *Ibid.*, leg. 559, Madrid, December 16, 1755, "Estado general de las ciudades, villas, y lugares que comprehenden las 25 leguas de la circunferencia de esta corte."

<sup>63</sup> *Ibid.*, leg. 560, Madrid, November 30, 1757, Pedro Vidal, "Estado general de los partidos y provincias que comprehende la comisión de montes y plantíos de las 25 leguas del contorno de la corte."

like Jover's first report. Mirroring Jover's reports in another way, the totals then increased, but at slower rates each year from 1750 to 1753.<sup>64</sup>

During these years, the state made its presence felt in unprecedented ways by mandating laborious tree plantings and management practices throughout the interior of Spain, exacting fines on those who failed to meet the requirements of the ordinance, and generating a centralized storehouse of forest and population data.

### *Naval Forest Reports*

As for the areas under naval jurisdiction, the first completed *visita de montes de la Marina* came from the unlikely source of Mallorca.<sup>65</sup> From May 7 to July 9, 1748, the naval minister *don* Pedro de Hordeñana inspected and catalogued the island's forests with the help of a scribe, a bailiff, a carpenter, and four horses. The bottom line, according to Hordeñana, was that Mallorca contained enough trees for about four frigates of fifty guns.

Hordeñana's crew visited the forests of 37 cities and towns. For each town, they recorded information on the age and suitability for naval shipbuilding of nine different tree species. They gave the distance from the towns to the nearest ports, and commented on the ease or difficulty of river transport. Most forests were privately owned. Hordeñana recommended that Mallorcans could increase the number of poplar, walnut, and ash trees that grew in the meadows and dry lands by planting more nearer the towns, which

---

<sup>64</sup> *Ibid.*, leg. 558, Madrid, July 26, 1753. During that period, the total number of trees planted and pruned came to 7,561,036. One major drawback regarding this data is the lack of information we have on the rates of tree removals at this time. We now know how many trees were planted, but we can not have a clear understanding of overall forest regeneration until we know how many trees were lost during the same period. To find this data, historians can search for indications through fuel consumption, changes in timber prices, or perhaps in forest testimonies held in local archives.

<sup>65</sup> *Ibid.*, leg. 554, Palma, July 11, 1748, *don* Pedro de Hordeñana.

generally had land that was more fertile and better irrigated. He said chestnut trees did not grow well in Mallorca, and there were few oak trees, but they could grow more holm oaks with better assistance. The meticulousness of Hordeñana's report let the crown know exactly how few chestnut trees grew on Mallorca (2) and how many pine trees (4,708,447).

While other naval ministers in Spain struggled to elicit forest testimonies during the first year after the ordinance's issue, Hordeñana provided an exemplary report on Mallorca, even adding a report on two other Balearic Islands, Ibiza and Formentera, in October.<sup>66</sup> The crown approved and granted the 2,276 *reales* and 16 *maravedis* in expenses for the visitations, presumably with gratitude. In fact, *don* Pedro Antonio de Hordeñana received special praise from Ensenada and the king the following May for accomplishing an impressive task so soon after the issue of the ordinance.<sup>67</sup> His was the only major naval *visita* submitted in 1748.<sup>68</sup>

Soon, other reports poured in to the departmental capital of Cartagena. In September of 1749, *don* Francisco Barrero submitted an *estado* of forests from 74 towns in Valencia, 30 towns in Murcia, and 25 towns in Granada.<sup>69</sup> The Valencian towns were accessible by the Guadalaviar and Júcar Rivers, while the other locations were accessible by the Segura River. In Valencia, as in Mallorca, pines were the most common species, and totaled 2,907,427. From the population figures of each Valencian town he visited, Barrero calculated the next year's planting quotas. He calculated that the 36,381 people

---

<sup>66</sup> *Ibid.*, Palma, October 9, 1748, *don* Pedro Hordeñana.

<sup>67</sup> *Ibid.*, leg. 555, May 12, 1749.

<sup>68</sup> On November 5, 1748, the crown grew concerned, and demanded the completion of more reports. *Ibid.*, leg. 554, November 5, 1748, Madrid.

<sup>69</sup> *Ibid.*, leg. 572, "El Barrero, sobre visitas de montes," September 20, 1749.

he counted in the province of Valencia had to plant 109,143 new trees by the next inspection; the 28,404 people in Murcia had to plant 85,212 new trees; and the 13,943 people in Granada had to plant 41,829 new trees.

Early the following year, *don* Gabriel López added a report on 14 more towns in Valencia, 9 in Murcia and 2 in Granada to Barrero's earlier work.<sup>70</sup> The Valencian inspections took place in and around the northern town of Morella, not far from Antonio de Alçatte's inspection of 1589, and were eight to ten leagues from the nearest port, Vinaroz. López's report also provided information on the number of new trees to be planted in each town, based on their populations.

In 1751, *don* Juan Francisco de la Torre submitted the most ambitious *estado de montes* to date.<sup>71</sup> He inspected the forests of 84 towns in Murcia and Granada. In addition to providing the population size and expected new plantings from each town, the report included detailed geographic information on forest quality and accessibility. Where possible, he divided each of ten tree species into the categories of "new," "growing," and "old." He even added a fourth category, "marked," to indicate specific trees that were marked as suitable for naval shipbuilding. De la Torre counted 601,806,209 trees, of which pines amounted to 513,313,072. His brief descriptions of each of the 84 locations provided more information. Some examples include:

*“Pliego – [Its size is] one-half league, north-to-south and one-quarter league, east-to-west. [It is] 14 leagues to [the nearest port of] Cartagena... This town has two water sources that irrigate its huerta*

---

<sup>70</sup> Ibid., leg. 556, Cartagena, February 25, 1750, *don* Francisco Barrero.

<sup>71</sup> Ibid., leg. 572, Cádiz, March 31, 1751, El Intendente de Cartagena, “Yncluye estado de los montes de Murcia y Granada.”

(irrigated plain) Its terrain is not the most advantageous, but pines in the forest will be of some utility. Pruning techniques continue to be beneficial.

“*Almansa* – holm oak is the dominant species. 4 leagues north-south, 5 ½ leagues east-west. 12 leagues from Alicante. This territory promises the growth of trees because of the high quality of the land. One can find hemp growing there. The small forests contain many decrepit pine trees. There is no river of consequence, nor more water than an abundant spring and an artificial reservoir, but the flat land allows for easy wood transportation to the indicated port.

“*Albacete* – holm oak is the dominant species. 6 leagues north-south, 4 leagues east-west. 22 leagues from Alicante. The natural humidity of this area is good for growing poplars. It does not have forests (*montes*), but its plains produce pines and holm oaks. The Júcar River irrigates part of the land and can only be useful for transport if it is made navigable.

“*Murcia* – holm oak and walnut are the dominant species. 7 leagues north-south, 7 leagues east-west. 9 leagues from Cartagena. The Segura River fertilizes the expansive *huerta* of this city with its abundant waters to produce all types of trees, and they can grow without damage to the hemp harvests. In its few forests (*montes*), there are pines but they are not currently usable.

“*Segura de la Sierra* – holm oak is the dominant species. 12 leagues north-south, 10 leagues east-west. 2 leagues to the Segura River. The Segura River has its source in this region, on which one can transport

the white pines that grow with superior quality and size. Roads need to be built, but at small cost.

“*Siles* – oak is the dominant species. 1 ½ leagues north-south, 1 league east-west. 38 leagues to Cartagena. It is a short distance from this town to the Guadalimar River, which irrigates its *huerta*...The terrain of its forests is suitable for pines and oaks, which will be serviceable in a short time.

“*Cartagena* – oak, holm oak, and walnut are the dominant species. Poplars grow around six small springs nearby. The land nearest the city is salty. The few pines that are in its forests are useless at present, but people there have sown many seeds, which are already growing. They have planted 40,000 small trees so that in the future they will not be lacking.”<sup>72</sup>

---

<sup>72</sup> “*Pliego*: No correspondiente haverle hecho. De N a S ½ legua y ¼ de L. a O. Al de Cartagena 14 leguas. Tiene esta villa dos fuentes que riegan la huerta. Su terreno no es el mas ventajoso, pero serán de alguna utilidad los pinos que hay en un monte, continuando el beneficio de las podas.” “*Almansa*: De encina. De N a S 4 leguas, y 5 ½ de L. a O. Al de Alicante 12 leguas. Este territorio promete fomento de árboles por la buena calidad de su terreno. Cogese algún cáñamo y puede aumentarse la cosecha. Los pequeños montes abundan de pinos carracos. No hay rio de consecuencia, ni mas aguas de una fuente abundante y un pantano artificial, pero por tierra llana pueden conducirse facilmente las maderas al puerto que se señala.” “*Albacete*: De encina. De N. a S. 6 leguas y 4 de L. a O. Al de Alicante 22 leguas. Promete este terreno por su natural humedad fomento de Álamos. No tiene montes, pero sus llanuras producen pinos y encinas. El Rio Júcar riega poca parte de tierra y solo puede convenir por la facilidad de concluir sus maderas por él, si se hace navegable.” “*Murcia*: De encina y nuezes. De N. a S. 7 leguas y 7 de L. a O. Al de Cartagena 9 leguas. El Rio Segura fertiliza con sus abundantes aguas la dilatada huerta de esta ciudad, que produce todo género de árboles, y pueden aumentarse sin perjuicio, como la cosecha de cáñamo. En sus pocos montes hay pinos, pero no de utilidad al presente.” “*Segura de la Sierra*: De encina. De N a S 12 leguas y 10 de L a O. Al Rio Segura 2 leguas. En el termino de esta villa tiene su origen el Rio Segura a el qual pueden conducirse los pinos blancos, que producen sus montes, que son de superior calidad y magnitud. Necesitase abrir algunos carriles, aunque de poca consideración su costo.” “*Siles*: De roble. De N a S 1 ½ legua y 1 de L a O. Al de Cartagena 38 leguas. Pasa a corta distancia de esta villa el Rio Guadalimar y se riega su huerta con los nombrados carrizal y molinos. El terreno de sus montes es apropósito para pinos y los robles de que abunda serán a servicio en corto tiempo.” “*Cartagena*: De roble, encina, y nuezes. De N a S 3 leguas y 7 de L a O. Su extensión. Con el corto riego de seis pequeñas fuentes se logran algunos álamos. El terreno inmediato a esta ciudad es salitroso. Los pocos pinos que hay en sus montes son inútiles al presente, pero se han sembrado en ellos muchos semillas, que ya se descubren nacidos. Han plantado 40,000 árboles pequeños para que en los años sucesivos no falten.”

These descriptions reveal that most locations had both positive and negative aspects for the navy. While many forests had some trees that were immediately useful, the inspections indicated that towns were taking steps to increase the potential timber supplies where they were lacking.

Also in 1751, *don* Gabriel López Peña and *don* Joseph Marco y Espejo inspected more towns near Morella and Peñíscola.<sup>73</sup> Their report included information on the population of each town, expected new plantings, distance to the port of Vinaroz, and numbers of seven different tree species. Some 304,530 trees grew in the area, and the *visitadores* calculated that the citizens needed to plant 118,733 more by the following year.

Finally, there was a forest inspection report from the *corregimientos* of Catalonia, including Barcelona, Mataró, Vigué, Manresa, Compendon, Gerona, Talarn, and Tortosa.<sup>74</sup> The report did not divide the trees into categories of “new,” “growing,” and “old,” but included ten different tree species. The 810,021 pines amounted to 82% of the trees counted.

The Department of Ferrol generated its first reports in 1749. *Don* Joseph Colossia inspected forests in 39 towns in the western region of Asturias.<sup>75</sup> In this region, oaks were most abundant, making up about 63% of the 1,619,602 trees counted, with no pines mentioned.

---

<sup>73</sup> AGS, Marina, leg. 572, Cartagena, February 24, 1751, “Estado en que manifiesta el número de árboles...en diferentes pueblos de las gobernaciones de Morella y Peñíscola del Reino de Valencia.”

<sup>74</sup> Bauer, 139-141.

<sup>75</sup> AGS, Marina, leg. 572, January 30, 1749, *don* Joseph Colossia, “Estado del en que se hallaba la visita de montes de Asturias.”

*Don* Francisco Xavier García y Sarmiento, *capitán* and *subdelegado* of the navy, led a visitation of Tuy, in southwestern Galicia at the Portuguese border.<sup>76</sup> He brought Juan Francisco González as his scribe and Francisco Rodríguez as his carpenter. They collected data on town populations; on royal, communal, and private property holdings; on oak, chestnut and pine trees; and on different shapes of timber necessary for shipbuilding. They counted 94,541 trees, of which oaks made up over 94%. After gathering all of the data, they made a comparison to a forest inspection of the same area from 1737 by *don* Benito Salgado. They found that every species had increased in number over the past decade, oaks by about 3%, pines by about 43%, and chestnuts by about 57%.

*Don* Joseph de las Cuevas inspected forests in the Valley of Mena, in the mountains between Bilbao and Santander, during September and October of 1751.<sup>77</sup> Holm oaks were most abundant, with 164,438 of the 288,078 trees counted, or about 57%. Other oak trees made up 27% and were broken down into categories of “new,” “growing,” “serviceable,” and “old.” Of the 76,132 oak trees, de las Cuevas deemed only 1,547 serviceable, about 2%.

Forest inspectors also produced several visitation reports based on the 1748 ordinance for the Department of Cádiz. In 1749, *don* Tomás de Guerra counted trees in twenty towns from the province of Huelva.<sup>78</sup> He counted 3,871,201 trees, 76% of which were pine trees. *Don* Manuel Samaniego and others gathered forest inspections from

---

<sup>76</sup> *Ibid.*, March 17, 1749, *don* Francisco Xavier García y Sarmiento, “Provincia de Tuy - Demarcaciones, extensión, y distancias de sus montes y dehesas.”

<sup>77</sup> Bauer, 145.

<sup>78</sup> *Ibid.*, 128-9.

nearly a dozen towns in the province of Tarifa.<sup>79</sup> These inspections reported on population, forest sizes, trees categorized by three ages and nine species, road and river transport conditions, and the distances to the nearest port. Out of 7,575,116 trees, 60% were cork oaks. In a report on 39 locations near Seville from 1750, *don* Luís Milhau inspected a diverse group of 21 tree species, gave distances to Seville or other nearby ports, and counted 3,369,446 trees.<sup>80</sup>

In early 1751, *don* Joseph Gutiérrez de Rubalcava completed an inspection of lands held by the house of Medina Sidonia, known as the Coto de Doñana.<sup>81</sup> For each of twenty locations visited, Gutiérrez de Rubalcava reported the ages of trees and included a category of “construcción” for those trees suitable for naval shipbuilding. He recognized the strategic location of the Coto de Doñana, which was on the coast and within a short distance of the royal arsenal of La Carraca in the Bay of Cádiz. He specifically cited article number 67 from the naval forest ordinance of 1748 to promote planting pines and poplars. The article stated, “In the plain of the Kingdom of Seville there are no other trees useful to the service of the navy than pines and poplars, whose growth, conservation, and augmentation should be guarded and promoted along the banks of the Guadalquivir. I order that the justices and hacienda owners in places along the river from Villanueva de Úbeda to Sanlúcar de Barrameda plant as many pines and poplars as the land can handle.”<sup>82</sup>

---

<sup>79</sup> AGS, Marina, leg. 572, Partido de Tarifa, no date.

<sup>80</sup> *Ibid.*, leg. 556, Cazalla de la Sierra, July 10, 1750, Milhau, “Con un estado de arboles reconocidas en varios lugares, partido de Sevilla.”

<sup>81</sup> *Ibid.*, leg. 557, February 13, 1751, Almonte, *don* Joseph Gutiérrez de Rubalcava.

<sup>82</sup> “...En la tierra llana del Reino de Sevilla no hay otros árboles útiles al servicio de la Marina que pinos y álamos, cuya cria, conservación y aumento debe cuidarse y promoverse en las riberas del río Guadalquivir; mando, que las Justicias ordinarias de los términos del curso de este río, desde Villanueva de Úbeda hasta

Gutiérrez de Rubalcava also visited the forests of the Sierra de Segura later that year, one of Spain's most well-forested regions.<sup>83</sup> He counted 22,264,991 new, growing, and old trees of eight different species. By the mid 1750's, some regions could start reporting on the effects the ordinance had on local forests. From the province of Jerez de la Frontera, *don* Francisco de Sandoval submitted totals from inspections in 1751 and 1754, revealing increases in the "new," "growing," and "old" tree age categories.<sup>84</sup>

Perhaps the most impressive document of all the forest inspections made during this period was an assemblage of information from major provinces of the Department of Cádiz from 1753.<sup>85</sup> Álvaro Bermúdez authored the final set of tables and submitted it to the king on Christmas Day. *Don* Joseph Gutiérrez de Rubalcava submitted the information from the Sierra de Segura. He reported the region as having 33 towns, 136 *fanegas* of plantations, 481 forests, 8 rivers, and 2,121,051 usable trees. Similar information came from other naval ministers working in Málaga, Tarifa, Jerez, Cádiz, Sanlúcar, Seville, and Ayamonte. In October of 1753, the crown had asked the Department of Cádiz to submit information regarding the employment of the 1748 forest conservation ordinance and on the 1748 ordinance regarding the matriculation of men suitable for naval service.<sup>86</sup> The ministers responsible for the report on matriculation submitted their report in November, placing greater pressure on the naval ministers to complete their report by the end of the year. Indeed, they submitted the final version without a full report from Sanlúcar and without an active head minister in Seville.

---

Sanlúcar de Barrameda, y los dueños de las haciendas cuyas márgenes baña por ambas bandas, las planten de pinos y álamos en toda la abundancia que permitan sus terrenos."

<sup>83</sup> AGS, Marina, leg. 557, August 14, 1751, *don* Joseph Rubalcava.

<sup>84</sup> *Ibid.*, leg. 559, "Estado de los Montes y Árboles de la Provincia de Xerez de la Frontera, resultante por las dos visitas que practicó *don* Francisco Fernández de Sandoval."

<sup>85</sup> *Ibid.*, leg. 558, December 18, 1753, "Estado de Montes, Departamento de Cádiz."

<sup>86</sup> *Ibid.*, December 25, 1753, Álvaro Bermúdez.

Despite these shortcomings, there was no comparable report made during this period from the other two departments of Ferrol and Cartagena.

### **Other Reforms and Ensenada's Fall from Power, 1749-1754**

As noted earlier, the forest legislation of 1748 was part of a broader program of government reform that included changes in the sectors of finance, naval technology, and administration. Like the forest legislation, these reforms enhanced state control over its resources. Ensenada's financial reforms included a proposal for a single tax based on income to replace the traditional taxes based on consumer goods and services. A series of royal orders in October of 1749 eliminated the *alcabalas*, *cientos*, and *millones* taxes; eliminated private collection by tax farmers; and initiated an ambitious project to collect information from every household in Spain, known as the *Catastro* (cadastral survey) of Ensenada.

This information was supposed to go towards determining rates of taxation, but by 1754 the project had failed. Such a revision of the fundamental tax structure of Spain would clearly have altered aspects of the social order and, as a result, the proposal met with strong resistance from the nobility and clergy. There is an interesting parallel with Felipe II's questionnaires of the 1570's; both had a small impact on government, but they now provide the modern historian with a wealth of contemporary social, cultural, economic, and geographical information. Together, they reveal how little the government's needs had changed, since both projects aimed to gather similarly detailed information about the monarchy's resources for taxation and other purposes. They also

show how difficult it was to achieve social and economic reform on a large scale at the time.

Other financial reforms by Ensenada proved more effective, such as the *Giro Real* (1751), which was inspired by the Bank of England, and it ensured that the state managed foreign exchange transactions, rather than leaving them in private hands.<sup>87</sup> Ensenada also enacted stricter regulation of American trade and cut down on fraudulent reports of treasure remittance in 1749 and 1750. A concordat with Rome in 1753 increased royal power over the resources and finances of the Spanish Church as well.<sup>88</sup>

To improve the navy, the crown issued legislation on naval registration and arsenal construction, in addition to forest conservation. In 1749, Ensenada sent Jorge Juan to England and Antonio de Ulloa to France and other parts of continental Europe to spy on foreign dockyards to improve Spanish knowledge of the latest technology used in shipbuilding.<sup>89</sup> Juan and Ulloa had achieved fame by participating in a scientific voyage to South America from 1735 to 1743.<sup>90</sup> Both were knowledgeable and trustworthy servants of Spain, and after spending well over a year collecting shipbuilding information, they returned in 1750 with blueprints, secret information, and even foreign experts and technicians. Over the next several years, they employed this information and the foreign experts hired to help in the design and construction of state-of-the-art arsenals in the navy's departmental capitals of El Ferrol, Cádiz, and Cartagena. Reasons for changing state forestry administration in the eighteenth century came from a combination

---

<sup>87</sup> Lynch, *Bourbon Spain, 1700-1808*, 170-2.

<sup>88</sup> *Ibid.*, 171-173.

<sup>89</sup> Ozanam, 465-6.

<sup>90</sup> Henry Kamen, *Philip V of Spain: The King who Reigned Twice*, (New Haven: Yale University Press, 2001), 234.

of technological and political developments that required new state-of-the-art shipbuilding facilities in well-protected harbors. Spain's older shipyards were not equipped to build and arm the latest types of vessels. With the technical help of Juan and Ulloa, these new vessels would be built in the new arsenals. In short, the Bourbons did not take over a decayed system of forest management left by the later Habsburgs. Rather, developments particular to the first half of the eighteenth century caused many of the old methods to change. In the 1750's, while the new shipbuilding centers were under construction and not yet operating at full strength, the arsenals of Guarnizo, near Santander in northern Spain, and Havana, Cuba, continued to be productive.

In 1754, Ensenada fell from power. Carvajal died in April that year, alarming a powerful pro-English cohort of the possibility that Ensenada's policies would move forward unchallenged. The navy by this time had already shown significant signs of growth, adding to the concerns of British supporters. Spain's fleet had grown from about a dozen vessels at the time of peace in 1748 to forty-five warships in 1754.<sup>91</sup> A well-orchestrated conspiracy led by the British ambassador Benjamin Keene, the duke of Huéscar, and Ricardo Wall led to Ensenada's removal by the summer of 1754. They also made sure that Ensenada's supporters were purged from the government, creating a new bureaucratic regime under Fernando VI. As a consequence, many of Ensenada's reforms were put on hold, and ship construction slowed for the next five years.<sup>92</sup>

Despite this setback, Ensenada had laid the foundation for naval revival between 1748 and 1754 by enabling greater access to primary materials, gathering technical

---

<sup>91</sup> Lynch, *Bourbon Spain, 1700-1808*, 178.

<sup>92</sup> Ozanam, 466. Here is a list of *buques* built (per year): 15 (1754), 13 (1755), 8 (1756), 3 (1757), 3 (1758), 2, (1759).

experts, and employing the latest technical knowledge to build new arsenals for an eighteenth-century navy. Ensenada had also improved the state's finances so that by the end of Fernando VI's reign in 1759, Spain had a larger financial surplus than ever before. As a result, Carlos III (r. 1759-1788) inherited both stable finances and a relatively strong navy.

### **Accomplishments of Fernando VI's Reign**

Forest legislation had never been directed to specific provinces of the navy along all Spanish coastlines and under one unified system of management before the 1748 forest conservation ordinances. The Marqués de la Ensenada wanted to produce a forestry code that made the growth, conservation, and extraction of naval timber systematic, repeatable, and centrally controlled. Above all, Ensenada aimed to enhance Spanish power, and he looked to specifically Spanish methods to meet the demands for domestic timber. The crown and its forest communities developed a political forestry system that fit into a variety of environmental, political, and social contexts. The ordinance defined its policies based on historic precedent, *in situ* information-gathering, and reports from local inspections all over Spain.

The great challenge for the crown and its bureaucracy in the decade after 1748 was the proper enforcement of the ordinances through forest inspections and full reporting. With the system in place, and with a clear legal framework backing up the activity of forest bureaucrats, the crown could expect very specific data on forest conditions from all over Spain at regular annual intervals. The forest reports created in the decade after 1748 made the inspections by Valdés (1737-9) and the map by Navarro

(1740) appear rudimentary, particularly in comparison to the extensive detail found in Juan Francisco de la Torre's work in the Department of Cartagena or Álvaro Bermúdez's compilation of information from the provinces in the Department of Cádiz. The numeric and descriptive reports de la Torre gathered from Murcia and Granada were more complete than anything the crown had accumulated on its forests up to that point. Overall, each report was slightly different, but each produced information that was more detailed and more thorough than forest inspections produced in the 1730's. Habsburg forest superintendents had produced similarly detailed reports in the early seventeenth century, but these covered much smaller areas.<sup>93</sup> The crown still had the most to learn from the departments of Cádiz and Cartagena, and that was exactly where most of the new information came from, since the forests of northern Spain in the department of El Ferrol were more familiar. As the culmination of forest territorialization in the early modern era, the improved inspection methods and clear management guidelines supplied by the 1748 ordinance resulted in the state's firmer control of Spain's forests.

Fernando VI's reign tends to be overshadowed by the successful establishment of the Bourbon line during the lifetime of his father Felipe V and the enlightened reforms during the reign of his half-brother and successor, Carlos III. Both Felipe V and Carlos III had long and eventful reigns, punctuated by major foreign wars. By contrast, the reign of Fernando VI was generally peaceful, and historians of his kingship often focus either on the cultural life at court or on the king's personal battles with incapacitating depression. Nonetheless, the reign of Fernando VI marked an important period of transition in the crown's management of natural resources. Forest conservation proved to

---

<sup>93</sup> Goodman, 105-7.

be a major part of state-building projects, spearheaded by the Marqués de la Ensenada. The patient years of administrative reform, and the laborious, repetitive tree-counting that I have analyzed here contributed to a firmer foundation of information and material networks on which the naval expansion planned by Ensenada could eventually be built. Ensenada's primary legacy was his naval program, which depended on accessible supplies of shipbuilding timber.

Carlos III would build upon Ensenada's foundation during his reign. The new king came to Madrid in 1759 with over twenty-five years of governing experience in Italy as duke of Parma (1732-1734) and king of Naples and Sicily (1734-1759). He decided very early on to end Fernando VI's policy of Spanish neutrality in the Seven Years' War, then raging in Europe. A Bourbon family compact signed with France in 1761 led to Spain's entry into the war; for which the country was ill-prepared. Spain had forty-nine ships of the line (vessels with between 112 and 58 guns) and twenty-one frigates in 1761, but, by then the conflict had already turned decisively in England's favor. Spain went down in defeat, along with its French Bourbon ally.

Three years after the defeat in 1763, a series of economic reforms put forward by the Marqués de Esquilache set off riots in Madrid, known as the *Motín de Esquilache* (1766). While Ensenada was allowed to return to Madrid and work on financial reforms under Carlos III, he never achieved the level of power he had held under Fernando VI before 1754. In fact, he was exiled again in 1766 after several members of government expressed their suspicion of his role in the popular uprising in Madrid.

Nonetheless, the naval reforms had taken on a life of their own. Continued government commitment to Spanish naval power after Ensenada's second exile led to a

full recovery from the Seven Years' War by 1770. The navy performed well enough in the War of American Independence (1775-1783), fighting on the side of the American rebels, to recover earlier territorial losses, including Florida and Menorca from Great Britain at the peace table. The increased naval forces reinforced the defense of Spain's American possessions, and even served as a tool of foreign policy by deterring enemy activity in the Americas.

It is no exaggeration to say that the territorialization of Spain's forests enabled the state to procure enough timber to create the second largest navy in Europe by 1783. That year, the navy had sixty-seven ships of the line and thirty-two frigates. Eighteenth-century Spanish naval strength would peak in about 1792, when it had eighty ships of the line and fourteen frigates.<sup>94</sup> Not only was the navy building more ships, it was building ships that were able to serve longer. Vessels made between 1714 and 1724 had an average lifespan of 12.6 years. Between 1725 and 1749, vessels were in use for an average of 14.7 years. Between 1750 and 1774, they were in service for an average of 31.6 years.<sup>95</sup>

Scholars agree that Spain's forest ordinance of January 1748 was a landmark piece of legislation. There would be additions and revisions made to it over the next several decades, but it would remain the official set of regulations guiding naval forestry through the eighteenth and into the nineteenth century. Forest inspections continued to take place in the later eighteenth century, and they covered more ground and gave more detailed reports than during Fernando VI's reign. Whereas one inspection of the Sierra de Segura yielded information on some 22 million trees in 1751, a more thorough inspection

---

<sup>94</sup> Lynch, *Bourbon Spain, 1700-1808*, 315.

<sup>95</sup> Ozanam, 497.

in 1785 counted over 260 million trees.<sup>96</sup> The 1748 ordinance was completely replaced only by the general forest ordinance of 1833. The nineteenth century regulations spelled the end of Spanish naval forestry, since the Department of the Interior would assume management of Spain's forests from then on.

The navy that grew after 1750 became almost as impressive as Ensenada had hoped, and it owed a great deal to his commitment to creating an enforceable national forestry code. Although the ordinance of 1748 was based on historic precedent, in many ways it pushed beyond past efforts to reinforce the state's territorialization of the forests of Spain.

---

<sup>96</sup> Bauer, 127. In comparison to a century earlier, the actual total number of trees in the Sierra de Segura had probably decreased due to the high rate of extraction for naval shipbuilding and the sparse population available to replant.

## General Conclusion

In a recent feature film about Elizabeth I of England, “Elizabeth: The Golden Age” (2007), there is a scene of Felipe II of Spain riding in a carriage through the woods to oversee the preparation for his great armada. He rides into a clearing, where workers are cutting down trees as far as the eye can see. One gets a sense of how substantial his invasion fleet is going to be by the vast open clearings being carved out of the woodlands. The close personal observation of the preparation of his armada, in this rare cinematic representation of early modern forestry, sends a clear message that Felipe II has caused severe environmental damage in a futile and aggressive invasion plan destined to end in total defeat.

Despite the visual impact of this scene, it is historically inaccurate in portraying clear-cutting as the method of naval timber procurement. The navy was not interested in using every single tree, and complete destruction of forests would have been calamitous for the local communities and the social order. Felipe II in fact praised his forest superintendents when they were able to take timber from dispersed sources so as not to place too large a burden on any one town.<sup>97</sup> More importantly, the scene from the film conjures up old portrayals of Felipe II as a ruthless tyrant determined to rule the world, part of the Black Legend of Felipe and Spain. This general portrayal, of course, is nothing new. In this instance, however, there seems to be a new dimension to the Black Legend, one that stirs up modern day sensibilities of right and wrong. Felipe II and Spain are portrayed as reckless destroyers of their own environment.

---

<sup>97</sup> Goodman, 78.

A very basic conclusion of this dissertation is that Felipe II showed great concern for the state of Spanish forests throughout his life, and his reign marked an important turning point in long-term state forestry. I have not attempted to produce a “Green Legend” of Spanish history, however, in which Spain becomes an example of enlightened stewards of trees and other living things. The study of resource management needs to take into consideration the goals and motivations of the different parties interested in using the resources. Forest conservation in early modern Spain was an issue of balancing the resource needs of the local scale (Guernica Oak) and the national or imperial scale (Galleon Hull). The process of forest territorialization in Spain brought forest resources and forest communities under closer state control for the specific interests of the navy, but it was done with the intent of stopping deforestation, and carried out with recognizable regard for forests as multi-use sites. This dissertation examined the formation of state forestry, its motivations, and the politics of resource management over a two hundred year period.

Forests had been carefully managed for centuries at the local scale by the sixteenth century, but imperial defense required greater maritime strength and greater crown control over forest access. While I emphasize Felipe II’s role in the formation of long-term forest management administration, I have found that historians have overlooked Carlos I’s contributions to this process. He issued the important forest legislation of 1518, which Felipe II would reconfirm during his reign. Carlos I issued the first legislation in Spain that aimed to conserve forests specifically intended for shipbuilding, an important step in the formation of state forestry. The idea of employing a forest superintendent to oversee the forests on the north coast emerged during Carlos I’s

reign, but it was only during his son's reign that one was appointed. It was also under Carlos that the idea for systematic collection of socio-economic and geographic information took shape. Eventually, ministers during Felipe II's reign carried out the task.

After forest legislation alone proved ineffective, Felipe II established a forest inspection bureaucracy as an extension of his naval shipbuilding administration. Inspection and planting techniques matured under Cristóbal de Barros in the late sixteenth century and under his immediate successors in the early seventeenth century. Difficulties with securing foreign timber spurred the crown to control its own forests more carefully, and even to send out reconnaissance missions within Spain to find new stands of suitable timber. Such a system helped Spanish naval power recover after the failed armada against England in 1588, and helped Spain survive the demanding wars between 1618 and 1659.

Spanish state forestry depended on the participation of local forest communities to help the crown locate new stands of timber, start and maintain plantations, prune trees, clear underbrush, defend against animals and fire, cut and shape the timber, load and transport the wood to the naval shipyard, and record all of these activities. The crown relied on their labor, tools, animals, and, of course, their forests. Inducing full participation in naval forestry was a challenging task, and the crown employed multiple methods, ranging from persuasive rhetoric to imprisonment. Forest communities did not oppose forest conservation, but they preferred it on their terms.

The fact that Spain became a trans-oceanic empire had a tremendous effect on the way the crown managed its coastal, and eventually its interior, forests. To defend and connect its vast empire, Spain required broader strategic control from the center. Spanish

imperial development contributed to the fact that the crown took steps to conserve its forests for naval purposes with a permanent system of observation and inspection long before France and England. The fact that Baltic timber was more difficult to acquire, and Spanish colonial possessions did not contain pine forests similar to those in New England or Quebec, contributed to a stronger motivation for domestic forest conservation.

Forestry lawmakers, forest inspectors, and forest superintendents in Spain all worked in the interest of the navy, limiting the debilitating conflicting interests that formed between France's navy and treasury and England's navy and Parliament.

For many reasons other than a failure of the timber supply, Spanish naval power waned in the middle of the seventeenth century. However, the crown's commitment to maintaining access to coastal forests and its desire to induce its people to plant more trees continued throughout the second half of the seventeenth century. Landmark forest legislation of this period included Toribio Pérez de Bustamante's Instruction of 1650 and Mariana of Austria's *real cédula* of 1675. Both documents included management techniques that would be used throughout the next century.

After the Bourbons ascended to the throne and secured their position by winning the War of Succession, the crown commissioned forest inspections on a national scale for the first time in Spanish history. The most important of which were the explorations of forests in the Sierra de Segura and the Ebro River valley by Juan Valdés y Castro. Such explorations extended Spanish state forestry to new sites and helped in the recovery of Spanish naval power after the War of Succession.

The experience of people like Barros, Antonio de Alçatte, Agustín de Ojeda, Martín de Vallecilla, Pérez de Bustamante, and Valdés indicate that Spanish forestry

evolved through a familiarity with local conditions that developed over generations, rather than by an imposition of centrally designed, imported, borrowed, or purely rational techniques from the court in Madrid or from another country. The crown eagerly sought knowledge of local conditions and suggestions from its forest superintendents. After closely examining the 1748 forest conservation ordinance, the tremendous influence of these people become apparent, altering our perception of the forestry code as a model based on Colbert's 1669 ordinance.

The considerable continuity from one reign to the next also indicates the fruitfulness of studying the Habsburg and Bourbon periods together, rather than ending or beginning a study at the conveniently round date of 1700. Bourbon era forestry had much in common with the state forestry of the late sixteenth and seventeenth centuries. Changes in naval forest administration after 1726 had more to do with new technological innovations, such as the need for arsenals in El Ferrol, Cartagena, and La Carraca, and new international conditions requiring greater protection of Spanish coasts, than with the failure of forest management under the minor Habsburgs, and the 1748 ordinances showed great continuity with previous developments.

Naval historians are well aware of the resurgence of Spain's presence at sea in the late eighteenth century under Carlos III (r.1759-1788) and into the reign of his successor, Carlos IV (r.1788-1808). The study of that resurgence would be incomplete, however, without recognition of the long process that enhanced state control over forests of interest to the navy. The monarchy's ability to have a predictable supply of timber in the major ports in any given year enhanced the state's ability to plan and organize naval power.

That ability had developed during the course of nearly three centuries of territorialization over the forests of Spain.

## Bibliography

- Abello de la Torre, M.A. *Historia y evolución de las repoblaciones forestales en España*. Madrid: Universidad Complutense, 1988.
- Abernethy, David. *The Dynamics of Global Dominance: European Overseas Empires, 1415-1980*. New Haven: Yale University Press, 2000.
- Aedo Pérez, Carlos. *El bosque en Cantabria*. Santander: Universidad de Cantabria, 1990.
- Albion, Robert. *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862*. Cambridge, MA: Harvard University Press, 1926.
- Alcalá-Zamora y Queipo de Llano, José. *Historia de una empresa siderúrgica española: Los altos hornos de Liérganes y La Cavada, 1622-1834*. Santander: Centro de Estudios Montañeses, 1974.
- Allen, Paul. *Philip III and the Pax Hispanica, 1598-1621: The Failure of Grand Strategy*. New Haven: Yale University Press, 2000.
- Appuhn, Karl. "Inventing Nature: Forests, Forestry, and State Power in Renaissance Venice," *The Journal of Modern History*, v. 72, n. 4 (Dec., 2000), 861-889.
- Aragón Ruano, Álvaro. *El bosque guipuzcoano en la Edad Moderna: Aprovechamiento, ordenamiento legal y conflictividad*. Donostia: Sociedad de Ciencias Aranzadi, 2001.
- Aranda y Antón, Gaspar de. *Los bosques flotantes: Historia de un roble del siglo XVIII*. Madrid: ICONA, 1992.
- Bamford, Paul W. *Forests and French Sea Power, 1660-1789*. Toronto: University of Toronto Press, 1956.
- Barney, Stephen A., W.J. Lewis, J.A. Beach, Oliver Berghoff, Muriel Hill, *The Etymologies of Isidore of Seville*. Cambridge: Cambridge University Press, 2006.
- Barreiro Mallón, Baudilio. "Masa arbórea y su producto en Asturias durante la Edad Moderna," en J. Cavero y otros, *El medio rural español: Cultura, paisaje y naturaleza*. Salamanca, 1992.
- Bauer Manderscheid, Erich. *Los montes de España en la historia*. Madrid: Fundación Conde de Valle de Salazar, 2003.

- Bechmann, Roland. *Trees and Man: The Forest in the Middle Ages*, tr. Katharyn Dunham. New York: Paragon House, 1990.
- Braudel, Fernand. *The Mediterranean and the Mediterranean World in the Age of Philip II*, tr. Siân Reynolds. New York: Harper Colophon Books, 1972.
- Burgess, Michael and Hans Volvaard, eds. *State Territoriality and European Integration*. New York: Routledge, 2006.
- Carlé, María del Carmen. "El bosque en la Edad Media (Asturias-Leon-Castilla)," *Cuadernos de historia de España* (Buenos Aires) 59-60 (1976), 297-374.
- Carson, Rachel. *Silent Spring*. Cambridge, MA: Riverside Press, 1962.
- Casado Soto, José Luis. *Barcos y astilleros: La construcción naval en Cantabria*. Santander: Puerto de Santander, 1993.
- Clayton, Lawrence. *Caulkers and Carpenters in a New World: The Shipyards of Colonial Guayaquil*. Athens, OH: Ohio University, Center for International Studies, 1980.
- Clemente Ramos, Julián, coord. *El medio natural en la España medieval: Actas del I congreso sobre ecohistoria e historia medieval*, [Celebrado en Cáceres entre el 29 noviembre y el 1 diciembre, 2000]. Cáceres: Universidad de Extremadura, Servicio de Publicaciones, 2001.
- Cobo de Guzmán y Lechuga, Jesús. *Estudio sobre las Ordenanzas de Montes del año 1748 y del expediente sobre el régimen y administración de los montes de Segura de la Sierra y de su provincia marítima de 1811*. Madrid, 1994.
- Constable, Olivia Remie. *Trade and Traders in Muslim Spain: The Commercial Realignment of the Iberian Peninsula, 900-1500*. Cambridge: Cambridge University Press, 1994.
- Cruz Aguilar, Emilio de la. "La provincia marítima de Segura de la Sierra," *Boletín del Instituto de Estudios Giennenses* 107 (1981), 51-82.
- Doyle, Michael W. *Empires*. Ithaca: Cornell University Press, 1986.
- Edwards, John. *The Spain of the Catholic Monarchs, 1474-1520*. Oxford: Blackwell, 2000.
- Elliott, J.H. *The Count-Duke Olivares: The Statesman in an Age of Decline*. New Haven: Yale University Press, 1986.
- \_\_\_\_\_. *Spain and its World, 1500-1700*. New Haven: Yale University Press, 1989.

- Elvin, Mark and Liu Tsui-jung, eds. *Sediments of Time: Environment and Society in Chinese History*. Cambridge: Cambridge University Press, 1998.
- Expediente sobre el régimen y administración de los montes de Segura de la Sierra y de su provincia*. Madrid: Imprenta de Miguel de Burgos, 1825, originally 1811.
- Fernández-Armesto, Felipe. *Ferdinand and Isabella*. New York: Dorset Press, 1975.
- \_\_\_\_\_. *The Spanish Armada: the Experience of War in 1588*. Oxford: Oxford University Press, 1988.
- Finer, S.E. *The History of Government from the Earliest Times, Vol. 3*. Oxford: Oxford University Press, 1999.
- Fuente, Alejandro de la. *Havana and the Atlantic in the Sixteenth Century*. Chapel Hill: University of North Carolina Press, 2008.
- Garayo, J.M. “Deforestación del territorio: El hayedo de los montes de la Parzonería General de Encía (siglos XVIII-XX),” *Agricultura y Sociedad*, n.62 (1992).
- García Cárcel, Ricardo, coord., *Historia de España siglo XVIII: La España de los Borbones*. Madrid: Cátedra, 2002.
- Glacken, Clarence. *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century*. Berkeley: University of California Press, 1967.
- Gómez Rivero, Ricardo. “La superintendencia de construcción naval y fomento forestal en Guipúzcoa,” *Anuario de historia del derecho español* v.56 (1986), 591-636.
- González Muñoz, V. “Vigo y su comarca en los siglos XVI y XVII,” *Vigo en su historia*. Vigo, 1980.
- Goodman, David. *Spanish Naval Power, 1589-1665: Reconstruction and Defeat*. Cambridge: Cambridge University Press, 1997.
- Guha, Ramachandra. *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*. Berkeley: University of California Press, 2000.
- Guilmartin, John F. *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century*. Cambridge: Cambridge University Press, 1974.

- Herrera García, A. “Labradores, ganadores, y aprovechamientos comunales: Algunos de su conflictividad en las tierras sevillanas durante el Antiguo Régimen,” *Agricultura y Sociedad* n.17, (1980).
- Imber, Colin. “The Navy of Süleyman the Magnificent,” *Archivum Ottomanicum*, VI (1980), 211-282.
- Jaritz, Gerhard and Verena Winiwarter. “On the Perception of Nature in a Renaissance Society,” in Mikulas Teich, Roy Porter and Bo Gustafsson, eds. *Nature and Society in Historical Context*. Cambridge: Cambridge University Press, 1997, 91-111.
- Kamen, Henry. *The War of Succession in Spain 1700-1715*. London and Bloomington, 1969.
- \_\_\_\_\_. *Spain in the Later Seventeenth Century, 1665-1700*. New York: Longman, 1980.
- \_\_\_\_\_. *Philip V of Spain: The King who Reigned Twice*. New Haven: Yale University Press, 2001.
- \_\_\_\_\_. *Empire: How Spain Became a World Power, 1492-1763*. New York: Perennial, 2002.
- Lacher, Hannes. *Beyond Globalization: Capitalism, Territoriality, and the International Relations of Modernity*. London: Routledge, 2006.
- Lieberman, Victor. *Beyond Binary Histories: Re-Imagining Eurasia to c. 1830*. Ann Arbor: University of Michigan Press, 1999.
- Lynch, John. *Bourbon Spain, 1700-1808*. Oxford: Basil Blackwell, 1989.
- \_\_\_\_\_. *Spain 1516-1598: From Nation State to World Empire*. Oxford: Blackwell, 1991.
- Manuel Valdés, C.M. and A. Rojo y Alboreca. “Valsaín Forest in the XVIII Century: An Example of Forest Management in the Pre-industrial Era,” *Investigación agraria, Sistemas y recursos forestales*, fuera de serie n3, (1994).
- Martin, Colin and Geoffrey Parker. *The Spanish Armada*. New York: Norton, 1988.
- Martínez Ruiz, Enrique, dir., *Diccionario de historia moderna de España, vol. II: La administración*. Madrid: Ediciones Istmo, 2007.

- McNeill, J.R. *Something New Under the Sun: An Environmental History of the Twentieth-Century World*. New York: W.W. Norton & Company, 2000.
- McNeill, William H. *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000*. Chicago: University of Chicago Press, 1982.
- Menéndez Pidal, Ramón. *Historia de España, tomo XXIX: La época de los Borbones – La nueva monarquía y su posición en Europa (1700-1759)*. Madrid: Espasa-Calpe, 1985.
- Merino Navarro, José. *La armada española en el siglo XVIII*. Madrid: Fundación Universitaria Española, 1981.
- Muñoz Goyanes, Guillermo. *Crónica sobre bosques y montes de la Península Hispánica*. Madrid: Fundación Conde del Valle de Salazar, 1983.
- Ortega Santos, Antonio. “Commons and Rural Communities: An Environmental History of Conflicts in [a] Mediterranean Ecosystem,” presented at *Common Ground, Converging Gazes: Integrating the Social and the Environmental in History*, International Conference held at l’École des Hautes Études en Sciences Sociales, Paris, September 11-13, 2008.
- Ozanam, Didier. “La política exterior de España en tiempo de Felipe V y de Fernando VI,” tr. José Luis López Muñoz in Menéndez Pidal, Ramón, Dir. *Historia de España, tomo XXIX: La época de los Borbones – La nueva monarquía y su posición en Europa (1700-1759)* (Madrid: Espasa-Calpe. (1963-) 1985), 441-699.
- Özveren, Eyüp and Onur Yildirim, “Procurement of Naval Supplies During the Sixteenth Century: Venetian *Arsenale* and the Ottoman *Tersane* Compared,” presented at the conference “Making Waves in the Mediterranean,” organized by the Mediterranean Maritime History Network, Messina, Sicily, May 5-8, 2006.
- Padrón, Ricardo. *The Spacious Word: Cartography, Literature, and Empire in Early Modern Spain*. Chicago: University of Chicago Press, 2004.
- Parker, Geoffrey. “Maps and Ministers: The Spanish Habsburgs,” in David Buisseret (ed.) *Monarchs, Ministers and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*. Chicago: University of Chicago Press, 1992, 124-152.
- \_\_\_\_\_. *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800*, 2<sup>nd</sup> ed. Cambridge: Cambridge University Press, 1996.
- \_\_\_\_\_. *The Grand Strategy of Felipe II*. New Haven: Yale University Press, 1998.

- Peluso, Nancy Lee. *Rich Forests, Poor People: Resource Control and Resistance in Java*. Berkeley: University of California Press, 1992.
- Pereda Hernández, Miguel-Juan. "Conservación y repoblación de arbolado en Almansa a mediados del siglo XVI," en *Conflictos sociales y evolución económica en la Edad Moderna (Actas del I congreso de historia de Castilla-La Mancha)* 1 (Ciudad Real, 1985).
- Phillips, Carla Rahn. *Six Galleons for the King of Spain: Imperial Defense in the Early Seventeenth Century*. Baltimore: Johns Hopkins University Press, 1986.
- \_\_\_\_\_. "‘The Life Blood of the Navy’: Recruiting Sailors in Eighteenth Century Spain," *The Mariner’s Mirror* 87, No. 4 (November 2001) 420-445.
- \_\_\_\_\_. "Naval Recruitment and Basque Resistance in Early Modern Times," *ITSAS Memoria: Revista de estudios marítimos del País Vasco* no.5 (2006), 173-185.
- \_\_\_\_\_. *The Treasure of the San José: Death at Sea in the War of the Spanish Succession*. Baltimore: Johns Hopkins University Press, 2007.
- Phillips, Carla Rahn and William D. Phillips, Jr., *Spain’s Golden Fleece: Wool Production and the Wool Trade from the Middle Ages to the Nineteenth Century*. Baltimore: Johns Hopkins University Press, 1997.
- Phillips, William D., Jr. "Spain’s Northern Shipping Industry in the Sixteenth Century," *The Journal of European Economic History*, v.17 n.2 (Fall 1988), 267-301.
- Poole, Stafford. *Juan de Ovando: Governing the Spanish Empire in the Reign of Felipe II*. Norman, OK: University of Oklahoma Press, 2004.
- Pulido Bueno, Ildfonso. *José Patiño: El inicio del gobierno político-económico ilustrado en España*. Huelva: I.P. Bueno, 1998.
- Quintero González, José. *El arsenal de La Carraca, 1717-1736*. Madrid, 2000.
- \_\_\_\_\_. *Jarcias y lonas: El renacimiento de la armada en la bahía de Cádiz*. Cádiz, 2003.
- Rangarajan, Mahesh. *Fencing the Forest: Conservation and Ecological Change in India’s Central Provinces 1860-1914*. Oxford: Oxford University Press, 1996.
- Rey Castelao, Ofelia. *Montes y política forestal en la Galicia del Antiguo Régimen*. Santiago de Compostela: Universidad de Santiago de Compostela: Servicio de Publicacións e Intercambio Científico, 1995.

- Richards, John F. *The Unending Frontier: An Environmental History of the Early Modern World*. Berkeley: University of California Press, 2003.
- Rubio Serrano, José Luis. *Arquitectura de las naos y galeones de las flotas de Indias, vol. I (1492-1590), vol. II (1590-1690)*. Málaga: Ediciones Seyer, 1991.
- Sack, Robert David. *Human Territoriality: Its Theory and History*. Cambridge: Cambridge University Press, 1986.
- Schama, Simon. *Landscape and Memory*. New York: Alfred A Knopf, 1995.
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.
- Stradling, R.A.. *Europe and the Decline of Spain*. London: George Allen & Unwin, 1981.
- Tarazona Grasa, Carlos. *La Guardería Forestal en España: Conservación de nuestros bosques a través de los tiempos*. Barcelona: Lunwerk, 2002.
- Thomas, Keith. *Man and the Natural World: A History of the Modern Sensibility*. New York: Pantheon Books, 1983.
- Thompson, I.A.A. *War and Government in Habsburg Spain, 1560-1620*. London: Athlone Press, 1976.
- Totman, Conrad. *The Green Archipelago: Forestry in Pre-Industrial Japan*. Berkeley: University of California Press, 1989.
- Tracy, James D. *Emperor Charles V, Impresario of War: Campaign Strategy, International Finance, and Domestic Politics*. Cambridge: Cambridge University Press, 2002.
- Urteaga, Luís *La tierra esquilhada: Las ideas sobre la conservación de la naturaleza en la cultura española del siglo XVIII*. Madrid: CSIC, 1987.
- Vandergest, Peter. "Mapping Nature: Territorialization of Forest Rights in Thailand," *Society & Natural Resources* (1996), 159-175.
- Vandergest, Peter and Nancy Lee Peluso, "Territorialization and State Power in Thailand," *Theory and Society*, v. 24, n. 3 (Jun., 1995), 385-426.
- Vassberg, David. *Land and Society in Golden Age Castile*. Cambridge: Cambridge University Press, 1984.

Vicente Maroto, María Isabel. “Agustín de Ojeda y la construcción de navíos a finales del siglo XVI,” in María Isabel Vicente Maroto y Mariano Esteban Piñeiro (coords.) *La ciencia y el mar*. Valladolid: Sever-Cuesta, 2006, 311-344.

Warde, Paul. *Ecology, Economy, and State Formation in Early Modern Germany*. Cambridge: Cambridge University Press, 2006.

Worster, Donald. *Dust Bowl: The Southern Plains in the 1930's*. Oxford: Oxford University Press, 1979.