**Wood, Trade, and Spanish Naval Power:**

**The Role of Southern Baltic and New Spain's Timber**

**(c. 1740-1795)**

by

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Figure 1. Image of the cedar tree from the map of San Miguel Chiquistepeque y San Francisco Puctla, New Spain (1757).

Source: Archivo General de la Nación de México, Mapas, Planos e Ilustraciones (280), MAPILU/210100/2322 San Miguel Chiquistepeque y San Francisco Puctla; Minas de Sacualpa. Edo. de Méx. (2231).

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I n t r o d u c t i o n

The dynastic change in Spain in 1700 brought about a series of political, economic, military, and cultural changes. The new Bourbon dynasty, represented by King Philip V (1700-1746), set about restoring and strengthening the Spanish empire against its main rival, Great Britain. Key to this ambitious project was the modernisation of the navy, which in the words of John Lynch: “had not even a good place to boil a cauldron of pitch”.[[1]](#footnote-1) This lamentable state of the Spanish navy was the consequence of the neglect of the shipbuilding industry during the reign of the last Habsburg, Charles II (1665-1700), and also the result of the War of the Spanish Succession (1701-1713) during which the last of the king's ships were immobilised. For this reason, the mission of reviving Spanish naval power began as early as 1714. The creation of the Ministry of the Royal Navy and the West Indies, and later of the intendancies, maritime departments, and royal shipyards in Guarnizo, El Ferrol, Cadiz-La Carraca, Cartagena de Levante, and Havana laid the foundations for the development of modern shipbuilding in Spain. Among the various figures who contributed to this process, the most outstanding are José Patiño, intendant and later minister of the Royal Navy, and Antonio de Gaztañeta, a sailor and shipbuilder who drew up the regulations for the King's shipbuilding system in the “Spanish style”.[[2]](#footnote-2) These efforts by the king, his naval officers, and the royal treasury led to the revival of naval power, and by the eve of the War of Jenkins’ Ear (1739-1748) the Spanish fleet comprised 29 ships-of-the-line, eleven frigates, six *paquebotes*, four bombards, two galleons, two *azogues*, two *galeotas*, two sloops, and one *pingüe*.[[3]](#footnote-3)

This policy of naval reinforcement continued between 1743 and 1795 under the Marquis of Ensenada (1743-1754), Julián de Arriaga (1754-1776), Pedro González de Castejón (1776-1783), and Antonio Valdés (1783-1795), José Patiño's successors in the Ministry of the Royal Navy. Owing to this successful strategy, by the 1790s the Spanish Navy was the second most powerful navy in Europe, after the British Royal Navy. Several factors contributed to this: financial stability; the skilful management of the intendents and officers of the *Marina Real* and the maritime departments, the implementation of technological innovations; and, finally, a functional raw material supply system. Jan Glete,[[4]](#footnote-4) followed by Iván Valdez Bubnov[[5]](#footnote-5) and Rafael Torres Sánchez,[[6]](#footnote-6) pointed out that this policy was grounded in the broader military strategy pursued by the Spanish and French crowns, whereby the Bourbons’ combined fleets[[7]](#footnote-7) could muster as many ships-of-the-line and frigates as the British navy.[[8]](#footnote-8) This status was reached after the end of the War of Jenkins’ Ear (1748), and in the period between 1770 and 1789, the naval forces of Spain and France outstripped the Royal Navy in terms of warships. Thus, in the second half of the 18th century, the Bourbon navies became the mainstay of the colonial order, contributing to the naval balance against the powerful British navy. However, it is also clear that, despite having a similar or smaller number of ships, supremacy in combat was on the British side, because their crews and officers were better trained. This is why the Franco-Hispanic fleets meet with more defeats than victories in the second half of the 18th century.

British policies to strengthen the Royal Navy during this period triggered the intensification of naval production in Spain and was also reflected in the introduction of technological innovations in shipbuilding. In the second half of the 18th century, the shipbuilding industry produced vessels based on three systems: the “English style”, introduced by Jorge Juan and the British constructors hired by the Bourbon Crown (1750-1765); the “French style”, implemented in the royal shipyards by the shipbuilder François Gautier (1765-1782); and the “mixed or perfected style”, lead by the naval constructors José Romero de Landa and Julián Martín de Retamosa, who in their designs combined features of the earlier systems, for example using rigging in the English style to increase the speed of ships. [[9]](#footnote-9)

The analysis of Bourbon Spain's naval policy in the second half of the 18th century clearly shows that the most valuable raw material for the ambitious plans to modernise the *Marina Real* was wood. For this reason, the main subject of this book is timber sourcing, with special attention to the exploitation of forests outside the Iberian Peninsula, including foreign states in the southern Baltic region and in the Spanish colonies, for instance the viceroyalty of New Spain. The monography describes the different ways in which wood supply operated, depending on local geographical factors, political situation, available personnel and funds, and the broader context of naval affairs involving the Spanish state, its allies, and its enemies. That is why the research presented in this book starts with two important questions: 1) How did Spain keep up with the increasing demand for timber as its naval power surged in the second half of the 18th century? and 2) What were the strategies deployed by the Bourbon monarchy to exploit and capture forest resources outside the Iberian peninsula?

In order to answer these two questions, it is necessary to revise the Spanish crown maritime policies and the development of its naval power, which was the key factor in the protection of, and trade with, its overseas colonies in America. Before, however, it is worth recalling that, in early modern Europe, ships became the main medium of colonial expansion, and their production essential for the economic and military stability of crowns, states, and nations. European demand for wood gradually began to grow from the 1640s, and became acute during the 18th century, mostly as a result of naval competition between England/Great Britain, France, Spain, Holland, and Portugal. The resulting overexploitation of woodland led to the deforestation of many regions in these countries,[[10]](#footnote-10) forcing naval powers to reconnoitre other European markets for timber and other sources, from the hinterlands of the Baltic, Adriatic, and Black Sea regions to America and Asia.[[11]](#footnote-11)

No raw material – apart from precious metal – was as highly coveted by European naval powers as timber. In the Early Modern Age, this forest resource became the main tool for expansionist and colonialist policies, allowing European naval powers to develop their economy, trade, and military power. For this reason, greater emphasis needs to be put on wood as a strategic resource that led to technological progress in shipbuilding and the modernisation of the navies of England/Great Britain, Spain, France, Holland, and, to a lesser extent, Portugal, Sweden, and Denmark. This is not only from the political-military perspective but, as the Spanish case illustrates, also in terms of knowledge about forest resources in Iberian Peninsula and the American colonies. Thanks to the explorations and surveys undertaken by the Spanish army and naval officers,[[12]](#footnote-12) the rational harvesting of wood – to ensure the navy’s ability to self-supply – became a target in itself, and the crown implemented more stringent monitoring systems to maintain the sourcing of this strategic raw material under strict control of the state.[[13]](#footnote-13)

From the 16th century onwards, the colonial expansion of the European crowns in Africa, America, and Asia allowed the exploration of forests on these continents. This event opened up the opportunity to exploit new tree species other than those traditionally used for centuries in European shipbuilding, which were more suitable for sailing in warmer seas. The trees commonly used in the European shipbuilding industry were pine, oak, beech, spruce, black poplar, and elm. Depending on their physical characteristics (weight, strength, durability, density, elasticity), these European species were used to manufacture different ship parts. For example, pines were mainly used for masting and, to a lesser extent, for planking; beech for oars and rudders; black poplar and elm for planks, ribbons, and turn pieces; oak and melis pine for beams; and pedunculate oak for the structural parts of ships, such as keels, frames, elbows, and rods.[[14]](#footnote-14)

The knowledge about the properties of tropical wood allowed the progress of European shipbuilding, which began to increasingly use American and Asian species, such as mahogany, sabicu, cedar, cypress, and also teak, ebony, guijo, betis, banaba: woods that performed better in warm waters than European timber, as well as being more resistant to naval shipworm or *turu*.[[15]](#footnote-15) For this reason, their service life was longer than those of vessels built with European wood. Once this critical issue was well understood, the navies of Spain, France, England/Britain, Portugal, and Holland began taking advantage of their colonies to exploit the durable tropical woods for the construction and repair of their ships overseas and in their European shipyard.[[16]](#footnote-16)

Spain became aware of the importance of timber early, after the *Carrera de Indias*, which began systematically in 1543, triggered a constant demand for merchant ships to channel trade with the colonies and armed galleons to protect the vital routes along which precious metals and other commodities circulated.[[17]](#footnote-17) In 1562, Philip II and the councils of the Indies and State took measures to begin naval production on a mass scale to create the armadas needed to protect the vast Spanish Empire. This required the reorganisation of forest management by royal officials and massive tree-planting campaigns. In 1574, Philip II appointed Cristóbal de Barros y Peralta first Superintendent of Hills and Forests. The promotion and protection of woodland in northern Spain can be regarded as the first expression of sustainable forestry policies, which was not grounded on conservationist ideas, but on a strategy to guarantee a constant source of raw materials to build and repair ships.[[18]](#footnote-18) Interestingly, the same notions guided Spanish public policies until the 1830s, when orders to preserve and manage forests (e.g. *Ordenanzas Generales de Montes*, 1833) were published on the initiative of Minister Javier de Burgos. Importantly, his orders imposed strict restrictions on logging as an urgent measure to stop soil erosion and flooding, which were exacerbated by the lack of forested areas. For the first time in Spanish history, these ordinances reflected a change in the reasoning behind forestry policies: from preservation with a view on naval construction to the protection of woodland for conservationist purposes.[[19]](#footnote-19)

Back to the Early Modern Age, it is worth recalling that, between 1574 and the early 19th century, Spanish monarchs and officials triggered several policies to impose control over the exploitation of forest resources in Spain and the colonies. Examples of these official regulations, which focused on the use of common woodland –exploitation regimes, fines and punishments for non-compliance, and the impact of agriculture and stock-breeding– can be found in the Catalonian *Ordinacions Forestals*, written in 1627 by Miguel de los Santos de San Pedro. These rules tried to impose severe limitations on logging, while reinforcing the presence of the navy commissars tasked with selecting the most suitable trees for naval construction.[[20]](#footnote-20)

Another example is Toribio Pérez de Bustamante’s *Instrucción forestal* (1656), with which Philip IV tried to centralise forest management not only in Spain but in his whole empire. The document established a new basic rule for the preservation of woodland: the prohibition to fell trees within two leagues of the coastline and navigable rivers, which were put under royal protection. The *Instrucción* also ordered local authorities to disseminate the document’s contents in the areas in which these forests were. Interestingly, churches were singled out as ideal points to disseminate the order. The *Instrucción* also included practical information, concerning felling periods, tree planting, and punishments for those that violated the ban on logging in royal, communal, and private woodland.[[21]](#footnote-21)

It is interesting that the Spanish Habsburgs also included their American colonies in this legislation. Unsurprisingly, the first ordinance to protect American woodland was passed in Cuba, by order of Philip II in 1559. This regulation prohibited any logging, two leagues inland on the banks of the Chorrera River and also within ten leagues to leeward and windward of Havana, without the governor’s permission. Anyone caught with an axe or a machete in the forests was sentenced to forced labour at the fortification works. Although this first order does not mention the navy’s needs, the following do, because throughout the 17th century the Spanish Crown prioritised shipbuilding in Cuba, notably in Havana. Especially important among all the royal orders concerning the navy’s wood resources was the one issued by Philip III on 26 March 1607, ordering the Cuban governor, Pedro de Valdés, to send 50 pieces and 100 boards of mahogany to the *Casa de Contratación*, Seville, for its qualities as shipbuilding material to be assessed. Also important was the order issued on 2 March 1620, authorising anyone arriving in Havana with the intention of building ships to fell trees anywhere in Cuba, and that issued on 2 March 1623, with which Philip IV addressed the petition of Cuba’s governor, Francisco de Venegas, to limit this permit to the constructors of naos only, because *vecinos* of Havana, especially ranchers, were expanding their land at the expense of woodland that was valuable for naval construction.[[22]](#footnote-22)

During the rule of the Spanish Bourbons, one of the most important decisions was to publish the *Ordenanza de 1748*, which imposed norms for the exploitation of woodland in the Iberian Peninsula under the supervision of superintendents from the navy departments of El Ferrol, Cádiz-La Carraca, and Cartagena. The main promoter of this document was the Marquis of Ensenada, Minister of the Royal Navy and the Indies, who granted navy officers sweeping powers to manage public and private woodland in the Iberian Peninsula, prioritising the Navy’s needs and shipbuilding in the royal shipyards. They were bestowed with the authority to decide the fate of all woodland and, in their surveys, they earmarked the best trees for the Navy, forcing private landowners to use inferior quality timber for their own needs. Navy intendents also had precedence to buy timber, sometimes paying below market prices. Similarly, Navy officers had the authority to send supervisors to oversee planting operations.[[23]](#footnote-23) These policies, however, did not yield the expected results, sparking conflict between state officials and forest owners,[[24]](#footnote-24) and ultimately forcing the Ministry of the Royal Navy and Indies to seek other sources of timber outside the Iberian Peninsula through the *asiento* system.[[25]](#footnote-25)

The analysis of these and other official documents,[[26]](#footnote-26) issued during the Early Modern Age, clearly illustrate that policies to protect woodland in Spain were guided by the wish to ensure the supply of timber for the king’s ships. This policy of sustainable use of forest resources pursued by Bourbon Spain was in line with mercantilist ideas put forward in the first half of the 18th century by two Spanish politicians inspired by the philosophy of the Enlightenment, Jerónimo de Uztáriz and José del Campillo y Cossío, who highlighted the huge potential of American forests as main source of timber for the Spanish royal shipyards. Uztáriz saw great advantage in the great durability and resistance of American timber, which he expressed as follows: “In the islands and mainland of America, where his majesty has many exquisite kinds of wood and an abundance of pitch and tar for the construction of ships [...]. with the considerable benefit that if the [ships] made in Europe resist from 12 to 15 years, [those in America] are preserved for more than 30 years since they are made there with the cedar, harder oak, and other woods of superior strength and resistance […]”.[[27]](#footnote-27)

Campillo y Cossío also demonstrated the advantages of American wood, saying that “Campeche wood, cedar, mahogany and other beautiful woods, masts for ships, planks, pitch, pitch [...] that now come to us from the Baltic, we will have from our Indies; and also the furniture, tools, instruments for work [...] we can take them [from Spain] there and sell them cheaper [in America]”.[[28]](#footnote-28) His idea clearly shows that Spain should replace the timber provision from the Baltic and also from other European regions because the use of American timbers would offer a double benefit. First, the money invested in the purchase of timber production in the colonies would remain in Spanish commercial circuits. Second, timber extraction would supervised by the royal and colonial authorities and would guarantee quality control of the wooden parts produced for ships. Uztáriz and Campillo y Cossío’s ideological approach was materialized during logging operations in Oaxaca and Cuba, which were carried out under the patronage of the Crown, and the concession of *asientos* to merchants and influential Creole residents from New Spain, Louisiana, and Cuba during the second half of the 18th century (see Chapter 4).

During this period, especially after the Treaty of Paris (1763), which brought an end to the Seven Years’ War, in which Spain was defeated by the British, strenuous efforts were made to reinforce the Spanish Navy, which after the time of Ensenada had entered a period of stagnation. The first major change was technological, with the substitution of the “French style” of shipbuilding for the “British system”, which had been followed in the 1750s and the early 1760s. In 1772, Francisco Gautier issued a report entitled *Observaciones sobre el estado de los montes de España, nota del consumo de la madera de construcción, que, en cada año, se considera necesaria en los departamentos de Ferrol, Cartagena y Cádiz; y proyecto para aprovisionar estos arsenales de maderas de América*,[[29]](#footnote-29) in which he described the state of Spanish woodlands and made audacious proposals to use American timber in naval construction in the Iberian Peninsula. Gautier emphasised that “Cádiz uses American wood which is brought at great cost but with little profit, not because it lacks in quality, but because of the carelessness with which it is dispatched [to the metropolis], where it arrives badly cut, badly arranged, and poorly sorted”.[[30]](#footnote-30) These words somewhat concealed his real intentions, which were to base the Navy’s timber supplies mostly on the exploitation of colonial forests; he points out that there was already a flow of *tozas*[[31]](#footnote-31)between Havana and other naval departments, but that this was insufficient and was limited to specific ship parts of sabicú, mahogany, and cedar.

In any case, Gautier’s project began initiatives by Navy and viceregal authorities in the colonies to exploit American forests. In the 1770s and 1780s, various woodland surveys were launched by royal officials to inspect potential timber sources, establishing species and volumes, from the Greater Caribbean and Louisiana to Veracruz, Oaxaca, Yucatán, Darién, the Magdalena River, Cumaná, and the Orinoco. Not all of these crystallised in felling *asientos*, but others met with greater success. As such, Louisiana and Chimalapas became sources of pine masting used in Havana; Coatzacoalcos, Tlacotalpan, Alvarado, Laguna de Términos, Cartagena de Indias, the Madalena River, and Cumaná supplied dressed pieces and boards in cedar and mahogany, most of which were shipped to the Iberian Peninsula. Gautier’s idea to tap into the enormous resources of American forests made sense, as the shipbuilder wished to keep Spanish woodland as a strategic reserve for naval construction. However, the project was hampered by difficulties in hauling dressed timber to the metropolis and could only become a complement to the supplies obtained in the Iberian Peninsula and other European regions.

In the second half of the 18th century, the main supply routes for the Spanish Navy linked with the Baltic and the Northern seas, where timber was obtained from private merchants,[[32]](#footnote-32) mostly foreigners and representatives of trade houses from the Netherlands, England, France, and Scandinavia, which frequently had branches in Spain. These businesspeople were connected with Spanish traders and their political allies in Madrid and the main Spanish harbours (Bilbao, San Sebastián, Santander, Cádiz, Seville, Malaga, Cartagena, and Barcelona). The reason behind this model was the shortcomings of the Spanish merchant navy, which from the 17th century was gradually replaced by cheaper foreign freight options – depending on geopolitical conditions, English/British, Dutch, French, and, to a lesser extent, Scandinavians and Hamburgers. In the Mediterranean, the second major source of wood (Romanian, Balkan, and Italian timber), most contracts were signed with Italians merchants,[[33]](#footnote-33) who virtually monopolised timber supplies for the Spanish navy in the 18th century in the region, as illustrated by the contracts signed with *asentistas* Joseph Marcerano, Baltazar Castellini, and Carlos María Marraci.[[34]](#footnote-34)

However, the most important source of wood during this period lay in the north, especially the Baltic, where Spain had to compete with other countries that traditionally sourced their timber there, that is, the British, Dutch, and French. Interestingly, with the help of a vast network of Spanish and foreign merchants and the diplomatic support of consuls, plenipotentiary ministers, and ambassadors, Bourbon Spain managed to gain, and keep, a foothold in the Baltic timber market in the period spanning the 1760s and the 1790s. This activity peaked in the run up to the American War of Independence (1775-1783), which Spain joined in 1779, and in the second half of the 1780s. Especially interesting are the attempts to nationalise wood *asientos* instead of working with foreign merchants. The contracts awarded Miguel Soto and his representative Felipe Chone in the 1770s were the first step, followed in 1782 by the creation of the Banco de San Carlos to centralise naval supplies and finances. The Soto-Chone *asiento* yielded some positive results, but the monopolistic position awarded the national bank was a fiasco, and traditional policies to find foreign merchants with solid Baltic networks, such as the Swedish Gahn, had to be resumed.[[35]](#footnote-35)

It must be emphasised that the policies implemented by the Spanish navy in the second half of the 18th century clearly show that Mahan’s thesis[[36]](#footnote-36) is –at least for this period– incorrect, because, as also shown by other recent research, Bourbon Spain had enough human capital, skilled royal officials, cash, natural resources in Spain and America, commercial networks, and diplomatic leverage to manage wood supplies in different northern and southern European markets, which led the Spanish armed forces to their greatest success in the 18th century, victory over Great Britain in the American War of Independence. This would have been impossible without the modernisation and development of the Navy, which in the 1780s became the second most powerful in the world, after the British.

As noted, the main aim of this book –which presents the results of research undertaken over ten years– was to contribute to our understanding of timber supplies for the Spanish Navy, especially from the Southern Baltic and the viceroyalty of New Spain, for which little previous research has been undertaken.[[37]](#footnote-37) Although things have improved in recent years, significant gaps in our knowledge concerning these two regions still exist.[[38]](#footnote-38) As such, a comprehensive comparison of these important regions for timber supply through the lens of the Spanish Royal Navy’s development strategy was still lacking. Systematic work at Spanish, Mexican, Cuban, and Polish archives has shed light on trade relations, forest surveys, problems with transport, and use in naval construction of timber from the Southern Baltic and New Spain, regions that presented very different geographical-economic-political-social contexts. However, owing to the determination of Spanish royal officials, Spain could ultimately meet its main target, which was to guarantee that its shipyards enjoyed a constant supply of timber from outside the Iberian Peninsula.

For this reason, this book cannot be easily slotted into a single field, such as environmental history[[39]](#footnote-39) or maritime history.[[40]](#footnote-40) Instead, it must be seen as a multifaceted attempt to cut across disciplinary boundaries,[[41]](#footnote-41) to understand Spanish timber supply policies as a process that merged the environmental, economic, naval, political, geographic, military, and social histories of these two important regions (the Southern Baltic and the Viceroyalty of New Spain), their forested hinterlands, and harbours like Memel, Königsberg, Gdańsk/Danzig, Szczecin/Stettin, Veracruz, Campeche, and Havana. In the 18th century, these places were intimately linked with the Spanish naval departments of El Ferrol, Cádiz-La Carraca, and Cartagena through trade contracts and the timber used to modernise the Royal Navy with the sponsorship of the state.

The timber trade that mobilised transport networks in North America, the Caribbean, Spain, northern Europe, and the Baltic clearly illustrates the economic dimension of early globalisation, as it brought remote geographical regions to interact closely.[[42]](#footnote-42) It must be emphasized that a local product such as European and American timber became, in this process, a global commodity. The use of this wood in European shipbuilding contributed to colonisation and early globalisation, because the ships built in the royal shipyards were later used to protect navigation routes across the Atlantic and the Pacific oceans. Often, these ships, built with timber from Spain, the Baltic, New Spain, and other places, were used to haul silver and other American products (gold, sugar, tobacco, cochineal, and indigo) to the metropolis, and also took part in offensive and defensive naval operations in time of war.

As noted, the book approaches Spanish timber supply policies from different points of view. For this reason, the monograph is divided into two parts and comprises four chapters. The first part (Chapters 1 and 2), analyses timber extraction and wood trade and transport from the southern Baltic to Spain. The second part (Chapters 3 and 4) presents the Spanish crown's efforts to organise an efficient system to identify and harvest American timber from several provinces in the Viceroyalty of New Spain, like Veracruz, Oaxaca, Campeche, Cuba, Louisiana, and other forested regions in the Caribbean.

Chapter 1, entitled *Wood Supplies for the Spanish Navy from the southern Baltic region and Riga in the second half of the 18th century*, begins by presenting the policies brought forward by the Marquis of Ensenada, one of the most powerful ministers during the reigns of Philip V and Ferdinand VI, who faced the challenge of modernising the Spanish state with administrative, fiscal, military, and naval reforms. As Minister of the Navy and Indies, between 1743 and 1754 he continued the project to develop and renovate the *Marina Real* begun by José Patiño y Rosales in 1717. He created a network of consuls and spies to gather information about foreign armies, navies, and military industries. During his time in office, the Navy adopted the known system of *asientos*, which guaranteed public contracts with foreign entrepreneurs associated with the Spanish commercial sector. The first major contracts were signed in the 1750s to ensure the supply of timber and other raw materials, such as hemp and linen, for the naval departments of El Ferrol, Cádiz-La Carraca, and Cartagena. The chapter analyses the contracts proposed by different commercial houses –mostly Dutch, Irish, and Swedish– from 1750 to 1790. These contractors gave the Spanish Crown access to the Baltic markets, specifically the harbours between Szczecin/Stettin and Riga, which were able to supply excellent pine or fir masting, and pine-oak planks and beams. The chapter also examines attempts by Baltic merchants, for instance, Mathy and Schultz, from Gdańsk/Danzig, to compete with these businessmen, who held a virtual monopoly over timber exported to Spain.

Chapter 2 examines the hinterlands of three major regions in Prussia and the Polish-Lithuanian Commonwealth, which were connected by sea through navigable rivers. The first section addresses the trade in wood from Silesia and Kłodzko, which were floated down the Oder River to Szczecin/Stettin. This section also analyses the timber market at this harbour, to which wood was delivered from the jurisdiction of Pomerania. The second section of the Chapter examines the flow of timber down the Vistula to Gdańsk/Danzig, a Hanseatic commercial hub in Poland and an important harbour for trade in cereal, wood, hemp, and other Baltic products. This section also includes information about the earliest legislation passed in the Kingdoms of Prussia and Poland to protect the royal forests in Silesia, Kłodzko, and Kozienice. The last-but-one section analyses the forest economy of the influential magnate family of the Radziwiłłs and the commercial networks involved in the commercialisation of timber and other products in Riga, Memel, and Königsberg.[[43]](#footnote-43) Finally, Chapter 2 examines Felipe Chone’s trip to evaluate the timber floated down the Oder River to Szczecin/Stettin, as well as the Spanish Ambassador in the Kingdom of Poland, Count of Aranda's description of the Vistula timber trade, after taking a voyage downriver to Gdańsk/Danzig.

Chapter 3, *The Survey of New Spain’s Woodlands: In Search for Timber for the Spanish Real Armada (1760-1790)*, takes the research focus to the other side of the Atlantic, where, beginning in the 1760s, the Ministry of the Navy carried out several inspections of forests in the vast Spanish American empire in order to identify places where wood could be extracted. From the early 18th century onwards, royal projects had begun using timber from the region to leeward of Veracruz, in the Viceroyalty of New Spain, which is traversed by several major rivers, including the Alvarado and the Coatzacoalcos. This region is rich in tropical forests with good cedar, mahogany, and sabicú, while the mountains of Sierra Madre Oriental were covered in pine forests. The chapter analyses the strategies adopted by the Ministry of the Navy and the viceregal authorities to expedite the harvesting of wood for naval construction in Havana and the metropolis. Not all these inspections, undertaken by military and naval officers, resulted in wood-sourcing, but all of them yielded excellent geographical knowledge of the forested areas in the provinces of Veracruz and Oaxaca. The last section of the chapter examines timber extracting projects in other regions of the viceroyalty, like the Usumacinta River, the Laguna de Términos, and the province of Huejutla.

Chapter 4 studies the results of wood logging in New Spain (provinces of Oaxaca, Veracruz, Tabasco, and Yucatan) but also in other regions of the Spanish Empire like Louisiana and the Caribbean, in the General Captaincy of Cuba and the Viceroyalty of New Nueva Granada. In New Spain – the region on which the main focus of this book lies – several *asientos* were signed with the support of the royal coffers. In the period 1784-1787, these contracts were granted to members of the military-commercial elite of Veracruz, who pledged to supply the *Marina Real* with *tozas* of mahogany and cedar and also dressed parts for ships-of-the-line and frigates. This project lasted only four years, not for lack of money or wood, but because of the constant problems with the transport of the timber from the river mouths to the shipyards in Cuba and the metropolis. The section on the Louisiana examines pine-logging contracts with merchants from New Orleans to bring masting and planks to Havana. Finally, *asientos* granted in the Caribbean, specifically in the regions of Cumaná, the Magdalena River, and Cartagena de Indias, as well as the illegal felling and contraband of wood in Cuba’s south-eastern forests are also analysed.

1. John Lynch, *Historia de España. Edad moderna: crisis y recuperación 1598-1808*, Volumen V (Barcelona: Crítica, 2005), 389. [↑](#footnote-ref-1)
2. Iván, Valdez-Bubnov, *Poder naval y modernización del Estado: política de construcción naval española (siglos XVI-XVIII)* (México: UNAM, 2011), 140-147. [↑](#footnote-ref-2)
3. Ana Crespo Solana, *La Casa de Contratación y la Intendencia General de la Marina en Cádiz (1717-1730)* (Cádiz: Universidad de Cádiz, 1996), 45. [↑](#footnote-ref-3)
4. Jan Glete, *Navies and Nations: Warships, Navies and State Building in Europe and America, 1500-1860* (Stockholm: Almqvist & Wiksell International, 1993), 553-579. [↑](#footnote-ref-4)
5. Valdez-Bubnov, *Poder naval y modernización del Estado*, 329-343. [↑](#footnote-ref-5)
6. Rafael Torres Sánchez, *Historia de un triunfo. La Armada española en el siglo XVIII* (Madrid: Desperta Ferro, 2021), 126. [↑](#footnote-ref-6)
7. Close collaboration between the Spanish and French Bourbons was the outcome of the Family Pact, which was signed on three occasions: in 1733, 1743, and 1761. It should be noted that, in 1779, the Third Family Pact was renewed by the Treaty of Aranjuez and remained in force until the outbreak of the French Revolution in 1789. [↑](#footnote-ref-7)
8. During the 18th century, the Royal Navy maintained between 100 and 140 major ships (ships-of-the-line and frigates). Torres Sánchez, *Historia de un triunfo*, 126. [↑](#footnote-ref-8)
9. José Patricio Merino Navarro, *La Armada Española en el siglo XVIII* (Madrid: Fundación Universitaria Española, 1981), 130-136; José M. de Juan-García Aguado, *José Romero Fernández de Landa: un ingeniero de marina en el siglo XVIII* (La Coruna: Universidade da Coruña, 1998), 184-189. [↑](#footnote-ref-9)
10. See for instance Manuel Corbera Millán, “El impacto de las ferrerías en los espacios forestales (Cantabria, 1750-1860),” *Ería* 45 (1998), 89-102; Gaspar de Aranda y Antón, *El camino del hacha : la selvicultura, industria y sociedad: visión histórica* (Madrid: Ministerio de Medio Ambiente, 1999); John Langton & Jones, Graham (eds), *Forests and Chases of England and Wales c.1500-1850: Towards a Survey and Analysis* (Oxford: St. John’s College, 2005); Hamish Graham, “For the Needs of the Royal Navy: State Interventions in the Communal Woodlands of the Landes during the Eighteenth Century,” *Journal of the Western Society for French History* 35 (2007), 135-148 and “Fleurs-de-lis in the forest: 'Absolute' monarchy and attempts at resource management in eighteenth-century France,” *French History* 23, no. 3 (2009), 311-335; Keiko Matteson, *Forests in Revolutionary France: Conservation, Community, and Conflict, 1669-1848* (Cambridge: Cambridge University Press, 2015); Koldo Trapaga Monchet, “Guerra y deforestación en el reino de Portugal (siglos XVI-XVII),” *Tiempos Modernos* 39, no. 2 (2019), 396-425; Koldo Trápaga Monchet and Félix Labrador Arroyo, “Políticas forestales y deforestación en Portugal, 1580-1640: realidad o mito?,” *Ler História* 75 (2019), 133-156; Koldo Trapaga Monchet, Álvaro Aragón-Ruano, Cristina Joanaz de Melo, *Roots of Sustainability in the Iberian Empires. Shipbuilding and Forestry, 14th-19th Centuries* (New York: Routledge, 2023). [↑](#footnote-ref-10)
11. See for instance D. R. Radell, and J. Parsons, “El Realejo: A Forgotten Colonial Port and Shipbuilding Center in Nicaragua” *The Hispanic American Historical Review* 51 (1971), 295-312; Warren Dean, *With Broadax and Firebrand: The Destruction of the Brazilian Atlantic Forest* (Berkeley: University of California Press, 1995); Peter Boomgaard, “The VOC Trade in Forest Products in the Seventeenth Century” in Richard Grove, Vinita Damodaran, and Satpal Sangwan (eds), *Nature and the Orient: The Environmental History of South and Southeast Asia* (Delhi: Oxford University Press, 1998); Reinaldo Funes Monzote, Reinaldo Funes Monzote, “Los conflictos por el acceso a la madera en La Habana: hacendados vs Marina”, in José Piqueras, (ed.) *Diez nuevas miradas de historia de Cuba* (Castellón: Publicacions de la Universitat Jaume l, 1998), 67-90 and *From Rainforest to Cane Field in Cuba: An Environmental History since 1492* (Chapel Hill: The University of North Carolina Press, 2008); Shawn W. Miller, *Fruitless Trees: Portuguese Conservation and Brazil’s Colonial Timber* (Stanford: Stanford University Press, 2000); Greg Bankoff, “The Tree as the Enemy of Man: Changing Attitudes to the Forests of the Philippines, 1565-1898,” *Philippine Studies* 52, no. 3 (2004), 320-344; Germán Luis Andrade Muñoz, *Un mar de intereses, la producción de pertrechos navales en Nueva España, siglo XVIII* (México: Instituto Mora, 2006); Miguel Jordán Reyes, “La deforestación de la Isla de Cuba durante la dominación española: (1492-1898)” (Madrid: Universidad Politécnica de Madrid, 2006 [PhD dissertation]); Greg Bankoff & Peter Boomgaard (eds), *A History of Natural Resources in Asia: The Wealth of Nature* (Basingstoke: Palgrave Macmillan, 2007); Iván Valdez‑Bubnov, “La construcción naval española en el Pacífico sur: explotación laboral, recursos madereros y transferencia industrial entre Nueva España, Filipinas, India y Camboya (siglos XVI y XVII),” *Studia Historica-Historia moderna* 43, no. 1 (2021), 71-102. [↑](#footnote-ref-11)
12. John Robert McNeill, “Woods and Warfare in World History”, *Environmental History* 9, no. 3 (2004), 388-410; Valdez-Bubnov, *Poder naval y modernización del Estado*; Rafael Torres Sánchez, *Military Entreprenuers. The Spanish Contractors State in the Eighteenth Century* (Oxford: Oxford University, 2016). [↑](#footnote-ref-12)
13. See for instance Luis Urteaga, *La tierra esquilmada. Las ideas sobre la conservación de la naturaleza en la cultura española del siglo XVIII* (Madrid: Serbal/CSIC, 1987); Gaspar Aranda y Antón, *Los bosques flotantes. Historia de un roble del siglo XVIII* (Madrid: ICONA, 1990); Ofelia Rey Castelao, *Montes y política forestal en la Galicia del Antiguo Régimen* (Santiago de Compostela: Universidad de Santiago de Compostela, 1995); Pilar Pezzi Cristóbal, “Proteger para producir. La política forestal de los Borbones españoles”, *Baetica. Estudios de Arte, Geografía e Historia* 23 (2001), 583-595; Álvaro Aragón Ruano, *El bosque guipuzcoano en la Edad Moderna: aprovechamiento, ordenamiento legal y conflictividad* (Donostia: Sociedad de Ciencias Aranzadi, 2001) and “Siete siglos de sostenibilidad forestal en Guipúzcoa (siglos XIII-XIX),” *Manuscrits. Revista d’Història Moderna* 42 (2020), 65-88 and “Soberanía y defensa de la riqueza forestal en la frontera vasconavarra con Francia durante el siglo XVIII,” *Memoria y Civilización* 25 (2022), 423-450; John T. Wing, *Roots of Empire. Forests and State Power in Early Modern Spain, c. 1500-1750* (Leiden-Boston: Brill, 2015); Alfredo José Martínez González, *Las Superintendencias de Montes y Plantíos (1574-1748). Derecho y política forestal para las armadas en la Edad Moderna* (Valencia: Tirant Lo Blanch, 2015); Vicente Ruiz García, “La Provincia Marítima de Segura (1733-1836). Poder Naval, Explotación Forestal y Resistencia en la España del Antiguo Régimen” (Murcia: Universidad de Murcia, [PhD dissertation], 2018). [↑](#footnote-ref-13)
14. Gaspar de Aranda y Antón, *La carpintería y la industria naval en el siglo XVIII* (Madrid: Instituto de Historia y Cultura naval, 1999), 23-24. [↑](#footnote-ref-14)
15. *Teredo navalis*, an elongated, worm-shaped mollusc that bored through ship hulls. [↑](#footnote-ref-15)
16. Eugenio Plá y Rave, *Tratado de maderas de construcción civil y naval* (Madrid: Imprenta, Estereotipia y Galvanoplastia de Aribau, 1880), 124; Greg Bankoff & Peter Boomgaard (eds), *A History of Natural Resources in Asia: The Wealth of Nature* (Basingstoke: Palgrave Macmillan, 2007), 13-16; Reinaldo Funes Monzote, *From Rainforest to Cane Field in Cuba: An Environmental History since 1492* (Chapel Hill: The University of North Carolina Press, 2008), 7-38. [↑](#footnote-ref-16)
17. Clarence H. Haring, *Trade and Navigation between Spain and the Indies in the Time of the Hapsburgs* (Cambridge: Harvard University Press, 2014 [first edition 1918]), 251. [↑](#footnote-ref-17)
18. Alfredo José Martínez González, *Las Superintendencias de Montes y Plantíos (1574-1748). Derecho y política forestal para las armadas en la Edad Moderna* (Valencia: Tirant Lo Blanch, 2015), 46-47. [↑](#footnote-ref-18)
19. Ignacio García Pereda, Inés González Doncel, Luis Gil Sánchez, “La primera Dirección General de Montes (1833-1842),” *Quaderns d’Història de l’Enginyeria*13 (2012), 215-230. [↑](#footnote-ref-19)
20. Vicente Casals Costa, “Conocimiento científico, innovación técnica y fomento de los montes durante el siglo XVIII” in Manuel Silva Suárez (ed.) *El Siglo de las luces: de la industria al ámbito agroforestal* (Zaragoza: Institución “Fernando el Católico”-Universidad de Zaragoza-Real Academia de Ingeniería, 2005), 457-459. [↑](#footnote-ref-20)
21. John T. Wing, *Roots of Empire. Forests and State Power in Early Modern Spain, c. 1500-*1750 (Leiden-Boston: Brill, 2015), 141-145. [↑](#footnote-ref-21)
22. Miguel Jordán Reyes, “La deforestación de la Isla de Cuba durante la dominación española: (1492-1898),” (Madrid: Universidad Politécnica de Madrid, 2006 [PhD dissertation]), 46-50. [↑](#footnote-ref-22)
23. Alfredo José Martínez González, “La elaboración de la Ordenanza de Montes de Marina, de 31 de enero de 1748, base de la política oceánica de la monarquía española durante el siglo XVIII,” *Anuario de Estudios Americanos* 71, no. 2 (2014), 571-602; John T. Wing, *Roots of Empire. Forests and State Power in Early Modern Spain, c. 1500-1750*, (Leiden-Boston: Brill, 2015), 206-215. [↑](#footnote-ref-23)
24. For an example see Álvaro Aragón Ruano, “Un choque de jurisdicciones. Fueros y política forestal en el Pirineo occidental durante el siglo XVIII,” *Obradoiro de Historia Moderna* 28 (2019), 135-162. [↑](#footnote-ref-24)
25. Rafal Reichert, “¿Cómo España trató de recuperar su poderío naval? Un acercamiento a las estrategias de la Marina Real sobre los suministros de materias primas forestales provenientes del Báltico y Nueva España (1754-1795),” *Espacio, tiempo y forma. Serie IV, Historia moderna* 32 (2019), 73-102; Rafael Torres Sánchez, “Los negocios con la armada. Suministros militares y política mercantilista en el siglo XVIII” in Iván Valdez-Bubnov, Sergio Solbes Ferri and Pepijn Brandon (eds) *Redes empresariales y administración estatal: la provisión de materiales estratégicos en el mundo hispánico durante el largo siglo XVIII* (México: UNAM, 2020), 49-76; Rafael Torres Sánchez, “Mercantilist Ideology versus Administrative Pragmatism: The Supply of Shipbuilding Timber in Eighteenth-Century Spain,” *War & Society* 40, no. 1 (2021), 9-24. [↑](#footnote-ref-25)
26. It is important to emphasise that similar regulations were imposed in other European countries. See for instance Koldo Trápaga Monchet, “El estudio de los bosques reales de Portugal a través de la legislación forestal en las dinastías Avis, Habsburgo y Braganza (c. 1435-1650)”. More directly in relation to the chronological framework of this book, the second half of the 18th century, several royal orders in Prussia (1750 and 1777) and the Polish-Lithuanian Commonwealth (1775 and 1778) already present significant differences with the Spanish regulation of 1748, because the Prussian and Polish orders aim to protect woodland from deforestation, rather than ensuring raw materials for state policies. [↑](#footnote-ref-26)
27. Jerónimo de Uztáriz, *Theorica y practica de comercio, y de marina: en diferentes discursos y calificados exemplares, que con específicas providencias, se procuran adaptar á la Monarquia española* (Madrid: Imprenta de Antonio Sanz, 1757), 216. “son grandes las ventajas que en las islas y tierra firme de la América tiene su majestad de muchas y exquisitas maderas y abundancia de brea y alquitrán para la construcción de bajeles […] con el considerable beneficio de que si los [buques] fabricados en Europa duran de 12 a 15 años, [estos de América] se conservan más de 30, ya que se hacen allá con el cedro, roble más duro y otras maderas de superior firmeza y resistencia.” [↑](#footnote-ref-27)
28. José del Campillo y Cossío, *Nuevo sistema de gobierno económico para la América: con los males y daños que le causa el que hoy tiene, de los que participa copiosamente España; y remedios universales para que la primera tenga considerables ventajas, y la segunda mayores intereses* (Madrid: Imprenta Benito Cano, 1789), 158. “El palo de Campeche, cedro, caoba y otras maderas hermosas, mástiles para navíos, tablazón, brea, pez […] que ahora nos vienen del Báltico, los tendremos de nuestras Indias; y asimismo los muebles, herramientas, instrumentos para labor […] los podremos llevar [de España] allá y venderlos barato [en América]”. [↑](#footnote-ref-28)
29. Eng. *Observations on the state of the mountains of Spain, note of the consumption of construction wood, which, in each year, is considered necessary in the departments of Ferrol, Cartagena and Cádiz; and project to supply these arsenals with wood from America*. [↑](#footnote-ref-29)
30. [Cádiz utiliza la madera de América que viene a mucha costa y de la cual se saca muy poco provecho, no por su calidad, que es de preferir a cuanto roble hay en España, sino por el ningún cuidado de los que la envían a [la metrópoli], donde llega muy mal delineada, mal configurada y nunca surtida]. AGS, SMA, Arsenales, leg. 349. “Observaciones sobre el estado de los montes de España, nota del consumo de la madera de construcción, que, en cada año, se considera necesaria en los departamentos de Ferrol, Cartagena y Cádiz; y proyecto para aprovisionar estos arsenales de maderas de América”. [↑](#footnote-ref-30)
31. Eng. Blocks. [↑](#footnote-ref-31)
32. Germán Jiménez-Montes, *A Dissimulated Trade. Northern European Timber Merchants in Seville (1574–1598)* (Leiden: Brill, 2022). It should also be noted that several archives – General de Simancas, General de la Marina-Álvaro Bazán, Histórico Nacional, Provincial de Cádiz, and Naval de Cartagena – possess vast records about the purchase of timber by the Navy in Romania, Dalmatia, Albania, Italy, and the Papal States, in the Mediterranean; and the Southern Baltic harbours, seen *in extenso* in this monograph, and other harbours in Russia, Sweden, Denmark, Norway, Hamburg, and Amsterdam, in the north. [↑](#footnote-ref-32)
33. See for instance Rafael Torres Sánchez, “La colonia genovesa en Cartagena durante la Edad Moderna”, in Rafaela Belvederi (ed.), *Rapporti Genova-Mediterraneo-Atlantico nell’Età Moderna* (Genoa, Università di Genova, 1990), 553-581; Manuel Bustos Rodríguez, *Los comerciantes de la Carrera de Indias en el Cádiz del siglo XVIII* (Cádiz: Universidad de Cádiz, 1995); Ana Crespo Solana, *El comercio marítimo entre Cádiz y Ámsterdam, 1713-1778* (Madrid: Banco de España, 2000) and *Entre Cádiz y los Países Bajos: una comunidad mercantil en la ciudad de la Ilustración* (Cádiz: Fundación Municipal de Cultura, Cátedra Adolfo de Castro, 2001) and *Comunidades transnacionales. Colonias de mercaderes extranjeros en el Mundo Atlántico (1500-1830)* (Madrid: Doce Calles, 2010); Manuel Díaz Ordóñez, “El riesgo de contratar con el enemigo. Suministros ingleses para la Armada Real española en el siglo XVIII,” *Revista de Historia naval* 21, no. 80 (2003), 65-74. [↑](#footnote-ref-33)
34. Joseph Marcerano was awarded an *asiento* to supply the department of Cartagena with Romanian wood for six years, beginning on 1 January 1761. Baltazar Castellini and Carlos María Marraci worked with the naval department of Cartagena and, in the case of Marraci, also with Felipe Chone, who purchased Baltic timber for El Ferrol, Cádiz-La Carraca, and Cartagena. Archivo General de la Marina-Álvaro de Bazán (Hereafter, AGMAB), Arsenales, legajo 3.762; Archivo Naval de Cartagena (Hereafter, ANC), Junta Económica del Departamento (Hereafter, JED), libros de acuerdos vol. 2729, tomo 2 (1774) and Archivo General de Simancas (Hereafter, AGS), Secretaria de Marina (Hereafter, SMA), Arsenales leg. 635 “Don Carlos María Marraci y Compañía, vecinos y del Comercio de esta Corte (1779)”. It should be mentioned that timber trade in the Mediterranean is not presented in this work. However, as the above examples indicate, a considerable number of contracts and official documents are found in the Spanish archives that can be used to study this issue in the future. [↑](#footnote-ref-34)
35. María Guadalupe Carrasco González, “Cádiz y el Báltico. Casas comerciales suecas en Cádiz (1780-1800)” in Alberto Ramos Santana *Comercio y Navegación entre España y Suecia (siglos X-XX)* (Cádiz: Universidad de Cádiz, 2000), 330-331 and Rafael Torres Sánchez, *Military Entreprenuers. The Spanish Contractors State in the Eighteenth Century* (Oxford: Oxford University, 2016), 189-229. [↑](#footnote-ref-35)
36. Alfred T. Mahan, *The Influence of Sea Power upon History, 1660–1783* (Cambridge: Cambridge University Press, 2010 [first edition 1889]). [↑](#footnote-ref-36)
37. José Patricio Merino Navarro, *La Armada Española en el siglo XVIII* (Madrid: Fundación Universitaria Española, 1981); Fernando Serrano Mangas, *Función y evolución del galeón en la Carrera de Indias* (Madrid: Mapfre, 1992); Alberto Ramos Santana *Comercio y Navegación entre España y Suecia (siglos X-XX)* (Cádiz: Universidad de Cádiz, 2000); Germán Luis Andrade Muñoz, *Un mar de intereses, la producción de pertrechos navales en Nueva España, siglo XVIII* (México: Instituto Mora, 2006); Iván, Valdez-Bubnov, *Poder naval y modernización del Estado: política de construcción naval española (siglos XVI-XVIII)* (México: UNAM, 2011). [↑](#footnote-ref-37)
38. Rafal Reichert, “El comercio directo de maderas para la construcción naval española y de otros bienes provenientes de la región del Báltico sur, 1700-1783,” *Hispania. Revista Española de Historia* 76, no. 252 (2016), 129-158; “¿Cómo España trató de recuperar su poderío naval? Un acercamiento a las estrategias de la Marina Real sobre los suministros de materias primas forestales provenientes del báltico y Nueva España (1754-1795),” *Espacio Tiempo y Forma. Serie IV, Historia Moderna* 32 (2019), 73-102; “Direct supplies of timbers from the southern Baltic region for the Spanish Naval Departments during the second half of the 18th century,” *Studia Maritima* 33 (2020), 129-147; “El comercio de maderas del Báltico Sur en las estrategias de suministros de la Marina Real, 1714-1795” in Iván Valdez-Bubnov, Sergio Solbes Ferri y Pepijn Brandon (eds) *Redes empresariales y administración estatal: la provisión de materiales estratégicos en el mundo hispánico durante el largo siglo XVIII* (México: UNAM, 2020), 77-94; and “El transporte de maderas para los departamentos navales españoles en la segunda mitad del siglo XVIII,” *Studia Historica: Historia Moderna* 43 (2021), 51-55; Rafael Torres Sánchez, *Military Entrepreneurs and the Spanish Contractor State in the Eighteenth Century* (Oxford: Oxford University Press, 2016) and “Los negocios con la armada. Suministros militares y política mercantilista en el siglo XVIII” in Iván Valdez-Bubnov, Sergio Solbes Ferri y Pepijn Brandon (eds) *Redes empresariales y administración estatal: la provisión de materiales estratégicos en el mundo hispánico durante el largo siglo XVIII* (México: UNAM, 2020), 49-76; Óscar Riezu Elizalde, Rafael Torres Sánchez, “¿En qué consistió el triunfo del Estado Forestal? Contractor State y los asentistas de madera del siglo XVIII,” *Studia Historica. Historia Moderna* 43, no. 1 (2021), 195-226. [↑](#footnote-ref-38)
39. Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 1986); Edmund Burke and Kenneth Pomeranz (eds), *The Environment and World History* (Berkeley-Los Ángeles-London: University of California Press, 2009); Stephen Mosley, *The environment in world history* (London: Routledge, 2010); John R. McNeill and Erin S. Mauldin, *A companion to global environmental history* (Oxford: Wiley-Blackwell, 2012); Maohong Bao, “Environmental History and world history,” *The Journal of Regional History* 2, no. 1 (2018), 6-17. [↑](#footnote-ref-39)
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43. This subchapter was elaborated on and written by Ph.D. students Karolina Juszczyk and Daniel Prusaczyk (who were scholarship-holders at the project *The role of wood supplies from the southern Baltic region and the viceroyalty of New Spain in the development of the Spanish seaborne empire in the eighteenth century* funded by the National Science Centre), and their work was supervised by the main author of the monograph, Rafal B. Reichert. [↑](#footnote-ref-43)