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Fighting for Forests: Protection and Exploitation of Kōje Island Timber during the East Asian War of 1592–1598

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Warfare drove depletion of forests and forest management in the early modern world, as states required increasing control over timber resources to support their growing militaries. East Asia was no exception. Scholars have shown how the Chosŏn Korean state tightened control over forests via its navy during the seventeenth century, following invasions by the Japanese hegemon Toyotomi Hideyoshi between 1592 and 1598. This devastating conflict between China, Korea, and Japan was the largest war of the sixteenth-century world. The vast size of the Japanese invasion fleets, the naval battles that were fought along the Korean coastline, and the building of fortresses throughout the occupied parts of the peninsula meant timber was of paramount significance during the war. The Korean island of Kōje was of particular strategic importance both for its location on the southern coast facing Japan and for the high-quality pine lumber produced there. This article explores the exploitation and protection of the forest environment of Kōje during the war, focusing on a four-month period at the start of 1597 when tensions came to a head. The case of Kōje shows the efficacy of direct management of forests by naval forces, as well as the results of a clash between early modern Chinese, Japanese, and Korean state cultures of timber control. The management of Kōje's timber by the Chosŏn navy during the war also helps explain why it was the navy that was later given administrative responsibility for managing forests in the postwar period.

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The early modern world saw the evolution of various state timber management strategies to meet growing demands for wood. Among these demands, the supply of old growth timber suitable for shipbuilding to support warfare and naval exploration was a particular concern. Broadly speaking, it is possible to delineate three approaches to timber acquisition used by early modern states, although the reality was often a mixture: (1) direct management of forests by state officials; (2) timber purchased as a market commodity; and (3) the acquisition of timber resources from a captured territory. The Venetian Republic is regarded as an early adopter of the first approach, having developed a coherent set of forest management policies in the fifteenth century, followed by the Spanish Crown, whose role in protecting forests changed from arbiter, balancing the interests of local groups, to that of forest manager, protecting the crown's interest in shipbuilding.¹ Ming China (1368–1644), long thought to have been lax in matters of forest management, has recently been shown to have had a complex system of timber regulation, which it managed through its role as tax collector, tariff levier, and codifier of property rights, and England and the Dutch Republic likewise purchased timber from private sellers as their shipbuilding needs increased from the mid-seventeenth century onward.² France, Spain, and England, to name but a few, all acquired timber from their colonies, with varying degrees of sustainability.³

The case of Chosŏn dynasty (1392–1910) Korea is particularly interesting in this context.⁴ The Chosŏn state became directly involved in timber management in the early decades of the fifteenth century, and, unusually, naval officials played a central role in the state administration of timber directly, which had profound implications for both the successful procurement of timber resources and the long-term protection of Korea's forest environment.⁵ Furthermore, as ships sailing on voyages of discovery left Europe for different parts of the globe, the English and Spanish navies vied for local sea power, and battles between Iberian and Ottoman powers raged in the Mediterranean, the largest conflict of the sixteenth-century world took place in East Asia, on Chosŏn soil and in the waters just off its coastline. This war, known variously as the Imjin War or Toyotomi Hideyoshi's Invasions of Korea, involved 500,000 combatants from China, Korea, and Japan.⁶ The two main invasion fleets of the war, launched by the Japanese hegemon Hideyoshi in 1592 and 1597, consisted of 120,000 and 140,000 men, respectively, and are believed to be the largest successful overseas landings

ever accomplished by that point in world history.⁷ By way of comparison, the Spanish Armada a few years earlier in 1588 involved no more than thirty thousand men.⁸ Military efforts on such a scale required vast amounts of timber, making the old-growth forests on the Korean island of Kōje strategically important.

The resulting conflicts over timber on Kōje illuminate not only the results of direct management of timber by naval forces but also a clash between different state approaches to forest management among the three combatant countries: China, Korea, and Japan.⁹ In the Japanese case, the absence of a centralized state or navy and the fact that the daimyos had only just begun to exert control over forests led to timber “management” strategies that were often haphazard. The Ming state, however, managed timber reserves by regulating the private market for wood via taxation and property rights, and, as we will observe, the direct management of Kōje’s timber was not of immediate concern to the Ming negotiators. Before the Imjin War, in sixteenth-century Korea, government interest in the control of timber for capital edifice construction had waned as national priorities turned toward the expansion of settled, field-based agriculture; however, the navy’s interest in timber remained strong, and naval garrisons continued to protect their timber reserves, a situation that intensified with Hideyoshi’s invasions.¹⁰ Thus, as we will show, of all the parties with an interest in Kōje’s timber during the war, it was the Korean military who was most effective at protecting the island’s reserves, although its efforts were hampered by wider concerns for the peace negotiations and lack of interest in timber by the Ming and Chosŏn authorities.

Skirmishes over Kōje’s timber resources occurred throughout the six and a half years of the war but reached a critical point in the spring of 1597, when Japanese soldiers were caught attempting to loot timber in violation of a recent agreement not to trespass on the island. Hideyoshi’s soldiers were captured by Chosŏn naval forces stationed on Kōje, and his generals attempted to negotiate an agreement that would allow them access to log; during these negotiations they continued to make incursions into Kōje’s forests as the Chosŏn side awaited advice from representatives of the Ming dynasty (1368–1644), who were overseeing the state-level peace negotiations. The Japanese attempts to secure access to Kōje at this time were ultimately unsuccessful because of the effective management of the island’s timber resources by the Chosŏn navy, although the Japanese were able to make small incursions

by exploiting the reluctance of the Chosŏn naval negotiators on Kōje to disrupt the wider peace process. The collapse of state-level negotiations in the Fourth Month of 1597 led to the resumption of open war and further degradation of the environment on Kōje Island itself and on the southern coast of the Korean peninsula.¹¹ In contrast to much of the environmental damage caused by the war, the involvement of three state parties in the 1597 Kōje timber negotiations left behind detailed historical records, which makes this a useful case study for shedding light on the exploitation and protection of Korean timber during the war and on the management of timber in early modern warfare.

Although Hideyoshi's invasions are becoming increasingly known outside East Asian history circles, few studies have turned their attention to the environmental impact of this conflict.¹² Territorial aggrandizement had been an inherent part of Hideyoshi's regime since its establishment in 1582, and the pursuit of land outside of Japan was an extension of this as well as a means of reducing domestic threats to Hideyoshi's authority.¹³ Before Hideyoshi came to power, Japan had been wracked by more than a century of civil war, as a central power vacuum gave regional lords the freedom to raise armies in their domains and compete for resources. As Conrad Totman notes, although there were gestures in the direction of woodland management by some daimyos, Japan's forest history before the seventeenth century was still largely characterized by exploitation, with little concern for preservation of site or restoration of yield.¹⁴ The conquest of Korean territory therefore offered a source of agricultural and arboreal wealth for plunder, and the conquest of foreign dominions kept Japan's daimyo lords and their militaries occupied abroad. Hideyoshi's first invasion was launched in 1592, ostensibly with the aim of occupying the Korean peninsula in order to use it as a foothold to conquer Ming China. When the advance of the Japanese troops was halted in 1593 by a combination of Korean naval and guerrilla resistance, the harshness of the Korean climate, and Chinese military intervention, the Japanese armies settled down to the business of maintaining their hold over the Korean territory they had acquired and exploiting its human and natural resources, before a second large-scale invasion was launched in 1597 ending with Hideyoshi's death in 1598.¹⁵ Aside from its considerable human costs, the Imjin War gravely damaged Korea's arable land, forests, waterways, and animal populations.

Historians are still debating the overall impact of the war, but eyewitness accounts from Japanese and Korean primary sources describe

similar types of environmental damage: locals fled, leaving empty towns with burnt and unkept fields; valuable pine trees were cut down to build ships and Japanese fortresses.¹⁶ In 1595, the army commander of Western Kyōngsang Province (*Kyōngsang udo pyōngma chōltosa*), where Kōje was located, reported that “Japanese pirates appear continuously around coastal areas . . . leaving the mountains severely burnt; killing, and robbing without any fear of repercussion.”¹⁷ The Japanese priest Keinen, writing two years later in 1597, likewise lamented the havoc wreaked by battles along the southern coastline: “Everything was totally destroyed, houses, wildness, mountains, and forests were all burnt, on fire with clouds of black smoke, people fleeing and children crying.”¹⁸

The damage to forests and fields by fire was due not only to destruction at the hands of the invading armies or from the battles that ensued but also to Korean peasants torching their own fields. Estimates of the percentage of Korean arable land that was ruined vary from around 66 percent up to a possible 80 percent.¹⁹ There is currently insufficient data to estimate the extent of the damage to forests, although anecdotal accounts suggest it was considerable. State forests were decimated, and Hideyoshi’s troops even cut down trees within the large reserves around the tombs of the Chosōn kings, which had been protected for centuries.²⁰ Surveying the damage after the war, Chief State Councillor Yu Sōngnyong, who had commanded Chosōn’s military operations during the latter stages of the conflict, noted that “the mountains and valleys lack trees . . . and so no one can block the landslides.” He observed that “the forests were bare” warning that “trees for timber were wasting away.”²¹

Recent trends in environmental history have provided new perspectives on the history of warfare, including the environmental impact of wars on the Korean peninsula.²² Research on the history of Korean forests and forest administration in wartime, including late colonial Korea and following World War II, reflect the interest in this subject in environmental history more broadly.²³ Studies of Korean forests in the pre- and early modern era, however, usually take either Hideyoshi’s invasions or the Manchu invasions of 1627 and 1636 as their point of departure, concentrating on the postwar periods rather than the wars themselves, due in part to the difficulties of obtaining primary sources from these chaotic periods of upheaval. Research has therefore focused on the Chosōn government’s policy of *songgūm* (restrictions on pine trees)

or *songjŏng* (policies on pine trees) during the late Chosŏn period following either the Japanese or Manchu invasions.²⁴ John S. Lee has shown that in Korea, like the rest of Eurasia, the rise of the early modern state was accompanied by mounting demand for timber and an expansion of state management of forest resources—namely, Korean red pine (*Pinus densiflora*) and black pine (*Pinus thunbergii*).²⁵ Focusing on the late seventeenth century, Lee also demonstrates how the Chosŏn military took on a key role in implementing forest policy following Hideyoshi's invasions, positing that this was an expansion of the war-time functions of the naval garrison (*sugunjin*), in particular the provision of forestry labor. Looking at the period before Lee, and focusing on the Imjin War, this essay argues that during the war the Chosŏn naval garrisons and the provincial naval headquarters (Kyŏngsang Usuyŏng) on Kōje fulfilled the role of resource manager in response to Japanese requests of timber. The navy's effective management of timber during the war hints at practical reasons why they were key implementers of forest policy in the postwar period: their local knowledge of forests and forest management, their long-term interest in the preservation of old-growth timber necessary for shipbuilding, and their experience protecting forests by force made the Korean military an ideal institution for protecting forests as the Chosŏn government rebuilt capital edifices and shored up their naval fleet after the war.

The Significance of Kōje Island

Kōje became a flash point for timber conflicts during the war because of its geographical, strategic, and environmental significance. With a surface area of 397 square kilometers, it is Korea's second largest island, at its closest point only a few hundred meters from the southern coast of the peninsula and approximately eighty kilometers from the Japanese island of Tsushima (fig. 1). Unlike the northern part of the Korean peninsula, which suffers from extreme temperature fluctuations, Kōje is in the milder South below thirty-five degrees latitude; combined with its average yearly rainfall of 1,726 mm, this makes ideal growing conditions for temperate coniferous forests.²⁶ Thus, geographically, Kōje is important because it is a traffic hub between Korea and Japan; strategically, it is a perfect base for naval forces to berth before sailing to inland waterways or southern littorals by sea; and environmentally, it is rich in trees, including pine, cypress, and palm.²⁷ A report by Chosŏn's



Figure 1. Map showing Kōje, Tsushima, part of the Japanese archipelago, and part of the Korean peninsula. Credit: Baihui Duan.

most senior military body, the Border Defense Council (Pibyōnsa), noted this during the Imjin War: “Located in Yōngdŭng and Okp’o, Kōje’s forests grow as if they could reach the sky and the shade of grasses and trees provide ideal cover from enemy eyes.”²⁸

Such rich environmental resources meant that by the time of Hideyoshi’s invasions, the southern coast of Korea, including Kōje, had been disturbed by pirate attacks from East Asian corsair networks for more than a century.²⁹ Pirates targeted Kōje’s forests for firewood in addition to extracting plunder from the towns and settlements on the island.³⁰ At the beginning of the sixteenth century, military officials ordered the naval garrisons to place piles of tree trunks along Kōje’s coastline to hide the navy’s ships; Kōje timber was also harvested and used to build wooden fences to deter invaders.³¹ Such encounters meant that military officials stationed on Kōje gained experience in border defense and timber management in cooperation with local magistrates. Because of the distance between Kōje and the central Chosŏn government in Hansŏng (Seoul), which slowed communications, local forces were responsible for making prompt responses to threats and managing the island’s timber. This is the same pattern that

we observe during the Japanese invasions at the end of the sixteenth century, with the military taking the leading role.

The Japanese Military Presence on Kōje

Kōje's proximity to the Japanese island of Tsushima shortened the transportation distance for armies coming from Japan, which was particularly important during the Imjin War, since Japan had almost no history of naval warfare, and its ships were not suited to long ocean voyages. Thus, Hideyoshi's forces were garrisoned on Kōje and in the nearby coastal cities of Pusan, Chukdo, and Kimhae (fig. 2). There were four Japanese fortresses on Kōje. The first three were built between 1592 and 1593 during the first wave of the Japanese invasion on the northern part of the island in Yōngdūng Bay (which had been noted for its rich forests in the Border Defense Council report above), Changmun Bay, and Songjin Bay.³² As part of the negotiations between Japan, Chosŏn, and the Ming, Japanese forces withdrew from these fortifications between 1594 and 1595. A fourth Japanese fortress,

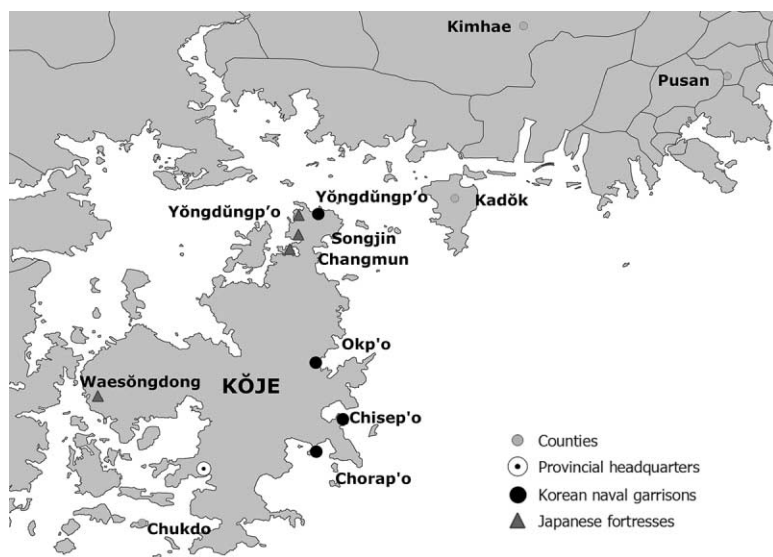


Figure 2. Map of Kōje Island and surrounding areas showing locations of fortresses, garrisons, and major cities. Credit: Baihui Duan, adapted from Shin Yunho, "Imjin waeran shigi samdo sugun yŏn'gu [A study on Samdo Sugun during the Imjin War]" (Ph.D. diss., Gyeongsang National University, 2019), 78–81.

in Waesŏngdong on the southwest of the island, was completed during the second invasion period in 1597, after negotiations broke down.³³

In addition to the island's strategic advantages, the presence of high-quality pine timber on Kōje was a significant motivating factor for the occupying Japanese. The Japanese period of civil war before the Korea campaign had brought home the logistical importance of timber and led to daimyos exploiting forests and exerting increasing control over this resource in Japan during the fifteenth and sixteenth centuries.³⁴ Stationary military forces have the potential to cause more damage to forest environments than mobile ones, because of their clear-cutting, daily consumption needs, and defense against local resistance, and records show that Japanese armies in Korea exploited timber to produce gunpowder, arrows, and wooden armor.³⁵ The Japanese soldiers also used the timber they had felled to build massive fortifications surrounded by stone and to make ramparts with wooden palisades, the ruins of which remain on Kōje to this day.³⁶

The need to source timber for shipbuilding was another important motivating factor behind Japanese attempts to maintain a presence on Kōje.³⁷ In 1594, the sound of their logging on the island was so loud that a report by the Korean Border Defense Council commented, "It sounds as if the heavens are shaking. They must be preparing timber for warships for attacks from the sea."³⁸ The Japanese need for timber was particularly acute in 1597, when the Kōje timber conflicts discussed in this article took place. Japan lost over two hundred ships in major naval battles during the first invasion, and so they required high-quality timber to repair their fleets and to prepare for the second invasion, which was launched in 1597.³⁹

Both before and during the war, the ship timber used by the Korean side in the western part of Kyōngsang Province came from Kōje, and commanders of the Chosŏn military were well aware of the dangers of allowing the daimyos unfettered access to the island's resources. Chief State Councilor Yu Sŏngnyong repeatedly reported to the court on this danger. In a report for the king written in 1593 he expressed concern about the occupation of Kōje because of the disturbance to locals, and to flora and fauna, as well as the potential military threat, noting that if the Japanese built a large number of ships, then they could gain control over the western coastline of the peninsula.⁴⁰ In 1595, Yu again voiced worries about Kōje. On this occasion he agreed with a report by the legendary Korean admiral Yi Sunsin: "Japanese soldiers are not

unaccustomed to maritime wars. They were only defeated by our navy because their ships came across far seas and they could not produce ships strong enough to carry large cannon. Now the Japanese have been on Kōje, rich in timber, for a long time . . . if they follow our models and make many covered-deck ships with cannons, then it will be difficult to fight against them.”⁴¹

Apprehensions at the court continued into 1596 when Yu again pointed out the poor quality of the Japanese ships and the dangers of allowing them to regain control over Kōje, which would allow the production of better vessels. After concluding that the number of Chosŏn Korean troops in the area was insufficient, the court sent Kim Ungsŏ as a military commander to the south of Kyŏngsang Province in 1595, where Kōje was located, in order to coordinate military efforts there and negotiate with the Japanese.⁴²

Korean Naval Facilities on Kōje

The Chosŏn navy was considerably better equipped than its Japanese counterpart and had a history of direct management of timber resources in order to build its ships. As Lee has shown, the forestry policies of the early Chosŏn state until the middle of the sixteenth century were driven by the need for naval timber and the construction of capital edifices. State policies had therefore privileged certain tree species, *Pinus densiflora* and *Pinus thunbergii*, and the ecosystem of the coastal coniferous forest where they grew.⁴³ As early as 1407, the Chosŏn government ordered all magistrates throughout Korea to plant pine trees for naval timber.⁴⁴ Among the pine tree policies promulgated early in 1448, and which continued to function even in the early seventeenth century, eleven mountain areas on Kōje were protected in order to provide the kind of old growth timber needed for shipbuilding.⁴⁵ Such reserves required careful preservation since only pine trees over a hundred years old were suitable for building ships used by the Chosŏn navy, and Noh Seongryong and Bae Jaesoo have shown how naval commanders in each garrison worked with local civilian magistrates to prevent illegal logging and to cultivate trees in barren areas.⁴⁶ A county map from the nineteenth century shows the preservation of Kōje’s forests as well as the locations of naval camps and civilian headquarters on the island (fig. 3).⁴⁷



Figure 3. Map of Köje Island. From a collection of maps of Kyöngsang Province in 1872. Credit: Kyujanggak Institute for Korean Studies, South Korea.

The Chosön naval presence on Köje was the main mechanism by which the protection of the island's timber resources operated during the war. According to the Chosön state code of 1485, which was still in effect during the Imjin War and late into the nineteenth century, the Naval Command of West Kyöngsang Province was located in the southern part of the island, while another four affiliated naval garrisons were situated along the eastern coastline, in Yöngdŭngp'o Bay, Chisep'o Bay, Okp'o Bay, and Chorap'o Bay (fig. 3). The Naval Commander of West Kyöngsang Province was in charge of the regional naval system, while

these garrisons were guarded by a port commander in charge of ten thousand households.⁴⁸ During the war, the army commander Kim Ŭngsŏ was responsible for addressing potential threats to border security and resource looting by the Japanese daimyos, and it fell to him to negotiate with the Japanese for timber.⁴⁹ In addition to these military offices there was the civilian administration of Kŏje county, which was located in the center of the island where a magistrate managed civil affairs. The Kŏje magistrates guarded the county headquarters when the military forces were absent from the island fighting at nearby locations in the early stage of the war and also provided additional assistance to naval troops when defending against the Japanese incursions for timber on Kŏje.⁵⁰

Each Chosŏn Korean naval garrison, including those on Kŏje, was responsible for constructing its own ships. They were also responsible for sourcing their own timber, and this provided the motivation for the protection and management of forests.⁵¹ During the Imjin War, naval forces from the three southern provinces, Kyŏngsang, Chŏlla, and Ch'ungch'ŏng, cooperated to fell trees for shipbuilding.⁵² Their boats and associated staff were located at the shipyards surrounding the naval garrisons, several of which are still shown on maps of Kŏje dating from later in the period (fig. 4).⁵³

The Kŏje Timber Conflicts of 1597

The Kŏje timber conflicts in the spring of 1597 shed light on the role of timber during the war and demonstrate that of all the parties involved—the Japanese daimyos, the central Chosŏn government, the Chosŏn military, and the Ming dynasty—the Chosŏn military was the most effective in protecting Kŏje's forests. The conflicts in 1597 occurred after a breakdown of state-level negotiations between Japan and the Ming dynasty in the autumn of 1596. The Ming dynasty, whose armies had come to the aid of Chŏson Korea, was the politically, culturally, and militarily dominant power in the region. Until the nineteenth century, the norms of international relations in East Asia were expressed in Chinese terms. Non-Chinese rulers such as the Chosŏn kings and the Japanese hegemon Toyotomi Hideyoshi were permitted to participate in this order if they ceremonially acknowledged themselves to be subjects of the Chinese emperor and received investiture as monarch of their countries.⁵⁴ This posed no difficulty for the Chosŏn dynasty,



Figure 4. Map showing shipyards. Details of the map of Kōje Island, 1872 (fig. 3). Credit: Kyujanggak Institute for Korean Studies, South Korea.

which took pride in being ranked first among the Ming hierarchy of tributary states. Japan, however, had a history of rejecting the symbolism of Chinese superiority, and Hideyoshi was no exception.⁵⁵ The negotiations between Japan and the Ming for the division of Korean territory and the withdrawal of Japanese troops collapsed in 1596 when Hideyoshi refused to accept the unequal status accorded to him by Ming envoys, which was expressed in the types of diplomatic gifts they brought and the titles they used in their diplomatic correspondence. Dissatisfied with what the Ming envoys offered, the lack of a high-ranking Korean hostage, and the Ming insistence on a full withdrawal, Hideyoshi dismissed the ambassadors and announced to his daimyos on the seventh day of the Ninth Month of 1596 that the negotiations had failed.

Aware of the breakdown in negotiations back in Japan and worried about a preemptive strike by the joint Ming and Chosŏn forces in Korea, on the fourteenth day of the Second Month of 1597, Hyōjirō, a Japanese envoy involved in the peace negotiations, met with Japanese generals including Katō Kiyomasa, Konishi Yukinaga, and Terazawa Hirotaka to discuss their chance of success against the combined Chosŏn and Ming forces.⁵⁶ They agreed to sign a sworn statement pledging that they would not attack first, and that any Japanese troops who violated certain

boundary areas in Korea were to be beheaded. The sworn statement was presented to the Korean authorities and specified several locations, including Kōje Island: “We pledge not to violate the boundary of Kōje, Ch’ilwŏn, Ch’ŏwŏn, Chinhae, Ham’an, Chinju, Kosŏng, and Sach’ŏn until the reply of the Ming dynasty comes. From now on, anyone who goes deeper inland . . . can be caught without advance warning.”⁵⁷

Hideyoshi’s daimyos initially obeyed this agreement. On hearing of an armed skirmish between his subordinates and the Chosŏn navy in which fourteen soldiers died on the twenty-second day of the Second Month of 1597, Konishi Yukinaga accepted that it was the fault of his men and ordered that the captured Chosŏn soldiers should be sent back as soon as possible.⁵⁸ In this case, it is clear that Yukinaga knew about the specified places and the restricted areas of the agreement. Nonetheless, as discussed below, the Japanese daimyos, including Yukinaga, later claimed that the borders defined in the agreement were ambiguous and used this ambiguity as an excuse for violating the agreement. The daimyos also took advantage of the slow communications between Kōje and the Ming-Chosŏn command, and they exploited the fact that the Chosŏn navy’s ability to respond with a show of strength was hampered by the need to consider the diplomatic implications of taking action against Japanese loggers.

After the local boundary agreement had been made on the fourteenth day of the Second Month of 1597, Hideyoshi, separately and without knowledge of the agreement, launched the second large-scale Japanese invasion of the Korean peninsula, consisting of some 140,000 soldiers in over two hundred ships, on the twenty-first day of the Second Month.⁵⁹ Immediately after this, there were two Japanese incursions to acquire Kōje timber in breach of the boundary agreement. The first incursion took place early in the Third Month of 1597. Fifteen soldiers belonging to the army of Yukinaga went to Okp’o Bay on Kōje to harvest timber and were captured by Chosŏn naval forces. These captured Japanese soldiers exploited the Chosŏn navy’s reluctance to disrupt the state-level negotiation process between Japan, Chosŏn, and the Ming by claiming that they were not Japanese “pirates” but envoys, under the charge of Yukinaga, and they offered an official letter as proof of this claim. As a result, the Chosŏn representatives concluded that killing Yukinaga’s men would be counterproductive, since the Ming emperor’s envoy, Shen Weijing, was also in the South at the time to facilitate negotiations. The Chosŏn forces therefore released the

Japanese soldiers, and they arrived back in Pusan, where the Japanese military leaders were garrisoned.⁶⁰

Despite their previous narrow escape or perhaps because they anticipated that a similar tactic could be used a second time, fifteen Japanese loggers from Yukinaga's camp set off again for Okp'o Bay, but before arriving they landed at Kimunp'o Bay, another verdant harbor on Kōje, on the eighth day of the Third Month. During this second incursion, the Japanese forces were accompanied by two other ships, one from Angolp'o and another ship with thirty-two soldiers belonging to the army of the daimyo Toyo Shigemori. They met Hyōjirō, the Japanese envoy, en route and asked him to write a second official letter stating that they were his subordinates who required timber from Okp'o Bay and requested Chosŏn's permission to log. Yet, on this occasion this letter did not save their lives. The newly appointed Korean naval commander in chief, Wŏn Kyun, feared that this incursion might develop into a larger naval battle and therefore mobilized his ships on nearby islands together with local magistrates. With the aid of county magistrates from Kōje Island, Angolp'o, and Kosŏng, the Chosŏn navy killed all of the Japanese soldiers on this occasion.⁶¹

The Chosŏn Navy's Role in Timber Negotiations

In addition to providing the manpower to protect Kōje's timber during the Japanese incursions detailed above, to defend their interests, the Chosŏn military also had to enter into delicate negotiations with the Japanese side, even while waiting for advice from the Ming dynasty and the Chosŏn court. As pressure to provide ships for the second wave of fighting grew, Hideyoshi's daimyos sent a strongly worded letter to the Chosŏn army commander responsible for Kōje, Kim Ŭngsŏ, on the twelfth day of the Third Month of 1597. In this letter, Toyo Shigemori threatened retaliation in response to the prohibition of logging on Kōje and the deaths of his soldiers. Kim Ŭngsŏ avoided direct conflict by means of obfuscation and a delaying tactic. Ŭngsŏ stated that the Korean troops who encountered the Japanese had mistaken them for pirates, a plausible fiction, given Kōje's long history of pirate troubles. The pretense that his troops had not knowingly attacked Japanese soldiers made it diplomatically problematic for the Japanese to retaliate and bought Ŭngsŏ some time. The Japanese military forces stood down and both sides agreed to wait for orders from the Ming dynasty.⁶²

However, the Japanese were still in want of timber, and this forced Hideyoshi's daimyos to return to Kōje for a second negotiation. On the twenty-third day of the Third Month, Hyōjirō went as Hideyoshi's envoy to Ŭngsō's camp on Kōje to renegotiate the rights of the daimyo armies to acquire wood from the island. Hyōjirō attempted to argue that the boundaries of the agreement, which had previously banned logging on Kōje Island, were unclear. Chosŏn understood the boundary in the agreement as meaning Kōje's geographical coastline, whereas the daimyos now claimed that it referred to the outline of the Chosŏn naval garrisons on the island. In this way, the redefinition of the boundary became a key component of the negotiation process. With the goal of acquiring permission to log outside the newly defined boundary area of the naval garrisons on Kōje, Hyōjirō also attempted to force a compromise by blaming the conflicts on the Chosŏn navy. He explained that Japanese soldiers merely came to collect driftwood on Kōje and that the killings that occurred during the second incursion were not worthy of a military citation from the court. By defining the incursions as a non-military situation, the Japanese envoy Hyōjirō was attempting to paint the Chosŏn navy's response as excessively heavy-handed.⁶³

Indeed, the question of whether the response to the second Japanese timber incursion on Kōje counted as a military victory for the commander in charge, Wŏn Kyun, had been a cause for debate at the Chosŏn court, revealing different attitudes toward the protection of Kōje's timber. Some held that Wŏn Kyun deserved a reward for his bravery, because he captured three Japanese boats and took forty-seven heads; others argued that killing Japanese illegal loggers was meaningless and would only cause further violence and jeopardize the wider negotiations. In the end, the court decided in favor of a reward for Wŏn Kyun on the grounds that the Japanese soldiers who logged on Kōje could be classified into a specific category of thieves on the basis of the military code for granting rewards.⁶⁴ However, this ambiguous status accorded to the Japanese loggers was then exploited by the Japanese side during the negotiations for Kōje's timber.

Echoing the court's concerns, Hyōjirō also threatened the Chosŏn navy with the possibility that their inability to agree on a compromise could lead to further conflict, which would imperil the state-level negotiations between Japanese and Ming forces in Korea. The Japanese diplomats Terazawa Hirotaka and Toyotomi Shigenobu had traveled to Korea in the Third Month of 1597 to reopen state-level negotiations

with Chosŏn and the Ming. Hyōjirō argued that the news about the killings of Japanese loggers would be a barrier to these state-level peace negotiations. After five years of warfare, which had devastated the Korean peninsula, the possibility of ending the conflict would have been a powerful motivating factor for the Korean side. In this way, the naval garrison on Kōje was caught between its own need to preserve the forest environment in order to have sufficient timber for its ships and the wider concerns of the peace process.

Nonetheless, Hyōjirō's efforts failed in the face of the Chosŏn navy's determination to guard the island's timber above all else, leading to the collapse of the second round of negotiation on Kōje.⁶⁵ Hyōjirō returned to Toyo Shigemori's fortress in vain, leaving behind an official letter, in which the Japanese general Yukinaga threatened further action if access to Kōje's timber was not granted.⁶⁶ Yukinaga was particularly motivated to push for access to Kōje because he had withdrawn his troops from the island in 1595 as part of the peace process, ignoring his fellow daimyo's suggestion that he leave a small force behind to observe the Chosŏn navy.⁶⁷ In the eyes of the other Japanese commanders, this made Yukinaga the one responsible for their lack of access to timber and prompted him to push further by leaving the letter and by later writing a letter directly addressed to the Chosŏn court, which is discussed below.

The effectiveness of the Chosŏn navy's protection of Kōje's timber throughout the negotiation process may be contrasted with that of the Ming dynasty, who served as a mediator in the negotiations. As noted above, the first round of negotiations between Toyo Shigemori and Kim Ŭngsŏ ended in a deadlock as both sides awaited the Ming dynasty's response. On the twenty-fifth day of the Third Month, the Ming vice-minister asked the Korean envoy Kwŏn Hyōp to come and discuss the Kōje conflicts.⁶⁸ However, the Ming were less concerned with protecting the timber resources of one Korean island than with the larger issue of bringing stability to the peninsula and halting the Japanese invasion. The Ming officer therefore argued that killing a small number of Japanese loggers on Kōje was an ineffective deterrent and that this could inflame the situation further. He advised the Chosŏn military not to kill Japanese soldiers but to tolerate them while preparing their defences against Hideyoshi's second invasion. The Chosŏn military forces were exhausted, and their provisions were running out, so the Ming envoy concentrated on the immediate military situation without considering

the need to preserve timber resources.⁶⁹ Moreover, it should be noted that, in Ming China, timber for state purposes was bought from private sellers, and forests were not directly managed by government officials.⁷⁰ This, as well as the immediate strategic concerns of the peace process, may also account for why the Ming officials did not concern themselves with protecting Kōje's timber resources.

Likewise, the Chosŏn court proved a less effective negotiator than the military representatives present on Kōje. When the timber negotiations entered a stalemate in the Fourth Month of 1597 as the three sides failed to reach any agreement, the Japanese continued to press for timber, and Yukinaga presented their petition directly to the Chosŏn court on the ninth day of the month—the final Japanese attempt to negotiate for timber on Kōje.⁷¹ In this letter Yukinaga continued the pretense that the boundaries agreed in the sworn statement of the fourteenth day of the Second Month of 1597 actually meant the outline of Chosŏn's fortress on Kōje Island, which left part of the island accessible to loggers.

As the recipients of Yukinaga's letter, the Chosŏn court began to participate directly in the timber negotiations but needed to first investigate the situation, thus delaying any formal outcome. The Supreme Commander of the Military was dispatched to ascertain whether the military commander on Kōje, Kim Ŭngsŏ, had come to a private agreement with Yukinaga regarding Japanese timber harvesting on the island. The Chosŏn court was often unaware of what was happening in remote areas, and this was particularly true in wartime. On this occasion, the investigation also functioned as a delaying tactic, and in the end Yukinaga received no official reply.⁷²

As a result of the collapse of state-level negotiation over timber resources in the Fourth Month, the Japanese launched a series of naval attacks from the Sixth Month of 1597, among which Kōje Island was an important target.⁷³ Japanese forces soundly defeated the Chosŏn navy at the Battle of Ch'ilch'ŏllyang on the northern part of Kōje on the fifteenth day of the Seventh Month of 1597. The Chosŏn lost over 160 warships in this battle and suffered numerous casualties, including the navy commander Wŏn Kyu.⁷⁴ By reoccupying Kōje, the Japanese forces had better naval access to the West, but the battles had caused incalculable environmental degradation on the southern coastline of the Korean peninsula.⁷⁵ The Japanese were to remain on Kōje until Yi Sunsin won the naval battle of Myŏngnyang on the sixteenth day

of the Ninth Month in 1597 and the Chosŏn navy again exercised control over the southern coastline of the Korean peninsula.

The Efficacy of Naval Timber Management

The Imjin War represented not only a clash between three states but, arguably, an encounter between three state cultures of environmental resource management and wartime logistics. Given the size and significance of the Imjin conflict, the study of how all three combatant states approached resource management has implications for our understanding not only of the war itself but its place in the early modern history of the environment in wartime. Kōje's forests were caught between Chinese, Japanese, and Korean state approaches to timber. In the Japanese case, there was no centralized state or navy, and Toyotomi Hideyoshi and his daimyos had only just begun to exert systematic control over forests. The Ming state, however, recognized the need to manage timber resources but relied on regulating the private market for wood via taxation and property rights. Thus, the direct management of Kōje's timber was not of immediate concern to the Ming negotiators. Then there was the Chosŏn navy, which had long been involved in Korean state forest management. The case of Kōje clearly shows that of all the parties involved, it was the Korean military who was most effective at protecting the island's timber reserves. This was because of the local knowledge of naval officials and their long-term interest in retaining access to old-growth forest resources, since pines of one hundred years or more were necessary for constructing their ships. Kōje thus stands as an early modern example of a state system of timber management operating to protect old growth forests in wartime because of the direct involvement of naval officials in forestry practices. However, while the Chosŏn navy was able to defend forests by force, the need to take into account wider considerations of the state-level peace process during negotiations rendered their protection of Kōje's forests less effective.

After the end of the war and the retreat of Hideyoshi's forces in the Eleventh Month and the Twelfth Month of 1598, the ecology of the Korean peninsula faced far-reaching challenges. There was the need to rehabilitate agricultural land and to mitigate the demands placed on already damaged forests by shipbuilding and the reconstruction of capital edifices. Because of renewed government interest in a strong navy and the need to rebuild the capital, stricter government control

was therefore exercised over timber management in the richly forested southern coastal areas of Korea, including Kōje. Military institutions became a key vehicle for widening state control over pine forests in the postwar period, and the naval garrison in particular served as the implementer of government policy on forests.⁷⁶ The example presented here of how and why the navy attempted to protect timber on Kōje during the war explains this trend toward naval administration in the post-Imjin and late Chosŏn periods, as the navy, which had localized knowledge, an interest in maintaining old growth forests, and experience defending timber by force, was given the task of managing Chosŏn's forests in peacetime.

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Notes

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1. Karl Appuhn, *A Forest on the Sea: Environmental Expertise in Renaissance Venice* (Baltimore: Johns Hopkins University Press, 2009); John T. Wing, *Roots of Empire: Forests and State Power in Early Modern Spain, c. 1500–1750* (Leiden: Brill, 2015).
2. Ian M. Miller, *Fir and Empire: The Transformation of Forests in Early Modern China* (Seattle: University of Washington Press, 2020); Robert Greenhalgh Albion, *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652–1862* (Cambridge, MA: Harvard University Press, 1926); Jason W. Moore, "'Amsterdam Is Standing on Norway' Part II: The Global North Atlantic in the Ecological Revolution of the Long Seventeenth Century," *Journal of Agrarian Change* 10 (2020): 202.
3. Paul Walden Bamford, *Forests and French Seapower, 1660–1789* (Toronto: University of Toronto Press, 1956); Wing, *Roots of Empire*; Albion, *Forests and Sea*

- Power*; John F. Richards, "Landscape Change and Energy Transformation in the British Isles," in *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: University of California Press, 2005); J. R. McNeill, "Woods and Warfare in World History," *Environmental History* 9 (2004): 388–410.
4. Names of places and people in Korean follow the McCune-Reischauer romanization system, in Japanese the revised Hepburn system, and in Chinese Pinyin. Names are given in the East Asian order of surname followed by given name or names, and dates follow the lunar calendar.
 5. John S. Lee, "Protect the Pines, Punish the People: Forests and the State in Pre-industrial Korea, 918–1897" (Ph.D. diss., Harvard University, 2017), chap. 3.
 6. James B. Lewis, ed., *The East Asian War, 1592–1598: International Relations, Violence, and Memory* (London: Routledge, 2015), 1–6; Kenneth M. Swope, *A Dragon's Head and a Serpent's Tail: Ming China and the First Great East Asian War, 1592–1598* (Norman: University of Oklahoma Press, 2009), 6–8.
 7. Swope, *A Dragon's Head and a Serpent's Tail*, 5.
 8. Colin Martin and Geoffrey Parker, *The Spanish Armada*, rev. ed. (Manchester: Manchester University Press, 1999), 10.
 9. For a similar comparison but from a later period, see Osamu Saito, "Forest History and the Great Divergence: China, Japan, and the West Compared," *Journal of Global History* 3 (2009): 379–404.
 10. Lee, "Protect the Pines, Punish the People," 91 and 122–26.
 11. Following standard practice, premodern dates in this article follow the lunar calendar and are given as "the first day of the First Month" rather than "January 1st." The lunar month is usually four to six weeks later than its counterpart in the Gregorian calendar. Years are given using the equivalent Gregorian year rather than the Japanese, Chinese, or Korean year, which was numbered by royal reigns/eras and hence differed between the three states.
 12. See Masato Hasegawa, "War, Supply Lines, and Society in the Sino-Korean Borderland of the Late Sixteenth Century," *Late Imperial China* 37 (2016): 109–52; Conrad D. Totman, *The Green Archipelago: Forestry in Preindustrial Japan* (Berkeley: University of California Press, 1989); Lo Lee-hsin, "Fengchen Xiuji qinlue Chaoxian: Ri, Chao, Ming sanguo junzhongzhi jiyi, qingsouyu tongxun" [Toyotomi Hideyoshi's invasions of Korea: Diseases, information, and communications among the armies of Japan, Korea, and the Ming dynasty], *Guoli zhengzhi daxue lishi xuebao* 47 (2017): 117–58.
 13. Kitajima Manji, "The Imjin Waeran: Contrasting the First and the Second Invasions of Korea," in Lewis, *The East Asian War, 1592–1598*, 73. See more research on multiple reasons for the Japanese invasion: Kenneth R. Robinson, "Violence, Trade, and Impostors in Korean-Japanese Relations, 1510–1609," in Lewis, *The East Asian War, 1592–1598*, 42–70; Nakajima Gakusho, "The East Asian War and Trade between Kyushu and Southeast Asia in the Late Sixteenth Century: Centered on Katō Kiyomasa's Trade with Luzon," *Chinese Studies in History* 52 (2019): 23–41.
 14. Totman, *The Green Archipelago*, 4 and 54.

15. For an overview of the conflict in English, see Swope, *A Dragon's Head and a Serpent's Tail*; Lewis, *The East Asian War, 1592–1598*; Samuel Hawley, *The Imjin War: Japan's Sixteenth-Century Invasion of Korea and Attempt to Conquer China* (Seoul: Royal Asiatic Society Korea Branch, 2005), 35–55; Stephen Turnbull, *Toyotomi Hideyoshi: Leadership, Strategy, Conflict* (Oxford: Osprey, 2010).
16. For discussions of the significance of the war, see, e.g., Jahyun Kim-Haboush, *The Great East Asian War and the Birth of the Korean Nation* (New York: Columbia University Press, 2016); Kim Söngu, *Chosön chunggi kukka wa sajak* [State and aristocracy in the mid-Chosön dynasty] (Seoul: Yöksa pip'yöngsa), 376–78; Martina Deuchler, *Under the Ancestors' Eyes: Kinship, Status, and Locality in Premodern Korea* (Cambridge, MA: Harvard University Asian Center, 2015), 96–102.
17. *Sönjo sillok* [The veritable records of King Sönjo] 65:16B (1595.7.8). See also, *Sönjo sillok* 68:36A (1595.10.27); *Sönjo sillok* 56:27A (1594.10.11). Throughout this article, citations from the *Chosön wangjo sillok* [The veritable records of the Chosön dynasty, 1413–1865] are given in the following format: names of kings, volume numbers, and page numbers, followed by lunar calendar dates in parentheses. The edition used is *Chosön wangjo sillok* [The veritable records of the Chosön Dynasty] (Kwach'ön, South Korea: Kuksa p'yöngch'an wiwönhoe, 2005), <http://sillok.history.go.kr> (accessed December 4, 2020). Unless otherwise noted, all translations in the article are the authors' own.
18. Chōsen Nichinichiki Kenkyūkai, *Chōsen Nichinichiki o yomu: Shinshūsō ga mita Hideyoshi no Chōsen shin'ryaku* [Reading Diary of Chōsen: Hideyoshi's invasions as seen by a Pure Land Buddhist monk] (Tokyo: Hōzōkan, 2000), 14–15.
19. Lee, "Protect the Pines, Punish the People," 127. The original sources for this statistic are the *Chūngbo munhōn pigo* [Reference compilation of documents, expanded edition] (Seoul: Tongguk munhwasa, 1959), 141:1, and the *Sönjo sillok* 34:8A (1601.8.13); see also Swope, *A Dragon's Head and a Serpent's Tail*, 288.
20. *Sönjo sillok* 92:14A (1597.9.11).
21. Lee, "Protect the Pines, Punish the People," 134.
22. See Mark D. Hersey and Ted Steinberg, eds., *A Field on Fire: The Future of Environmental History* (Tuscaloosa: University of Alabama Press, 2019); Richard P. Tucker and Edmund Russell, *Natural Enemy, Natural Ally: Toward an Environmental History of Warfare* (Corvallis: Oregon State University Press, 2004). Related to the Korean peninsula, see also David Fedman, *Seeds of Control: Japan's Empire of Forestry in Colonial Korea* (Seattle: University of Washington Press, 2020); John S. Lee, "Postwar Pines: The Military and the Expansion of State Forests in Post-Imjin Korea, 1598–1684," *Journal of Asian Studies* 77 (2018): 319–32; David Fedman, "Wartime Forestry and the 'Low Temperature Lifestyle' in Late Colonial Korea, 1937–1945," *Journal of Asian Studies* 77 (2018): 333–50; Lisa M. Brady, "Sowing War, Reaping Peace: United Nations Resource Development Programs in the Republic of Korea, 1950–1953," *Journal of Asian Studies* 77 (2018): 351–63, and "War from the Ground Up, Integrating Military and Environmental Histories," in Hersey and Steinberg, *A Field on Fire*, 250–62.

23. Fedman, "Wartime Forestry"; Brady, "Sowing War." Some studies have discussed wartime resource management of timber. See Patrick J. Caffrey, "Transforming the Forests of a Counterfeit Nation: Japan's 'Manchu Nation' in North-east China," *Environmental History* 18 (2013): 309–32; and Chris Pearson, "The Age of Wood': Fuel and Fighting in French Forests, 1940–1944," *Environmental History* 11 (2006): 775–803. For an overview of forest studies on a global scale, see also John R. McNeill, "The State of the Field of Environmental History," *Annual Review of Environment and Resources* 35 (2010): 363.
24. Kim Taegil, *Chosŏn hugi ugŭm, sulgŭm, songgŭm yŏn'gu* [Studies on restricted policies for cows, alcohol, and pine trees in the late Chosŏn dynasty] (Seoul: Kyŏngin Muhwa Press, 2006); Kim Hochong, "Chosŏn hugi ūi sallim poho chŏngch'aek" [Policy of forestry protection in the late Chosŏn dynasty], *Immun kwahak yŏn'gu* 2 (1999): 101–28; Bae Jaesoo, "Chosŏn hugi songjŏng ūi ch'egyewa pyŏnch'ŏn kwajŏng" [A study on the system and the development of pine policy in the late Chosŏn dynasty], *Sallim kyŏngche yŏn'gu* 10 (2002): 22–50; Kwŏn Sunku, "Chosŏn hugi pongsan chŏngch'aek" [An analysis of Pongsan policy in the late Chosŏn dynasty], *Han'guk chŏngch'aek kwahak hoebo* 11 (2007): 81–104; Yoo Seunghee, "Chosŏn hugi Hansŏngbu ūi Sasan kwalli wa songgŭm chŏngch'aek" [A study on Hansŏngbu's four mountains management and policy of forbidding the felling of pine trees in the late Chosŏn period], *Ihwa sahak yŏn'gu* 46 (2013): 223–54.
25. Lee, "Postwar Pines," 329. For the European case, see, e.g., Appuhn, *A Forest on the Sea*; K. Matteson, *Forests in Revolutionary France: Conservation, Community, and Conflict, 1669–1848* (New York: Cambridge University Press, 2015); and Wing, *Roots of Empire*.
26. La Tong'uk, "Kyŏsaitō no kankyō gaikan" [Environmental review of Kōje Island], *Wajō no kenkyū* 1 (1997): 11–18.
27. *Sŭngjŏngwŏn ilgi* [Journal of the royal secretariat] (Kwach'ŏn, South Korea: Kuksa p'yŏnch'an wiwŏnhoe, 2005), 601:77b (1725.9.24), <http://sjw.history.go.kr/main.do> (accessed October 10, 2020). Kōje timber was of high quality even within the fertile southern coastal areas, and it was common to use the large pine trees there for military ships and the main rafters of houses throughout the entire Chosŏn dynasty. Today there are up to six hundred types of plants on the island, including *Fatsia japonica*, cycads, pomelo, orange trees, and others. See La Tong'uk, "Kyŏsaitō no kankyō gaikan."
28. *Sŏnjo sillok* 55:28A (1594.9.19).
29. *Chungjong sillok* [The veritable records of King Chungjong] 11:10B (1510.4.11). See also Peter D. Shapinsky, *Lords of the Sea: Pirates, Violence, and Commerce in Late Medieval Japan* (Ann Arbor: University of Michigan Press, 2014).
30. *Sejong sillok* [The veritable records of King Sejong] 5:5A (1419.8.11).
31. *Chungjong sillok* 11:43B (1510.5.24); *Sejong sillok* 1:9B (1418.8.19).
32. Ōta Hideharu, "Bunroku no eki ni okeru Shimazu Yoshihiro no dōkō to Wajō fushin" [Shimazu Yoshihiro's movements and construction of Japanese fortresses during the first invasion of Korea], *Chiiki sōgō kenkyū* 34 (2007): 81.

33. There is some debate as to precisely when the fourth fortress, Waesŏngdong, was built. See Lo Lee-hsin, “Fengchen Xiuji qinlue Chaoxian qijian rijun zai Chaoxian bandao zhi zhucheng—yi Riben shiliao wei hexin” [City walls built in Korea by invading Japanese troops in the 1590s—focusing on Japanese historical materials], *Hanxue yanjiu* 30 (2012): 115–17; Shin Yunho, “Imjin waeran shigi samdo sugun yŏn’gu” [A study on Samdo Sugun during the Imjin War] (Ph.D. diss., Gyeongsang National University, 2019), 78–81. Although Shin located five naval garrisons on his map, the wartime functionality of the fifth garrison of Yulp’o kwŏngwan is controversial, since its location was not specified in the state code (*Kyŏngguk Taejon* [Great code for the management of the state] [Seoul: Yŏgang ch’ulp’ansa, 2001]).
34. Morimoto Masahiro, *Gunju busshi kara mita sengoku gassen* [Sengoku warfare from the perspective of logistics] (Tokyo: Yōsensha, 2008). For information on forest management and forest predation in premodern Japan over the *longue durée*, see Totman, *The Green Archipelago*.
35. Pearson, “The Age of Wood,” 793; *Sŏnjo sillok* 111:12B (1599.4.17); *Sŏnjo sillok* 43:15A (1593.10.22). For example, the daimyo Sō Yoshitoshi (1568–1615), who was garrisoned on Kōje from the Sixth Month of 1597 during the second invasion of Korea, had his troops construct their fortress and numerous houses in a clearing where many trees were cut down and stones were collected. *Sŏnjo sillok* 97:21B (1597.6.14); Kitajima Manji, *Toyotomi Hideyoshi Chōsen shinryaku kankei shiryō shūsei* [Collected primary sources relating to Toyotomi Hideyoshi’s invasion of Korea] (Tokyo: Heibonsha, 2017), 3:557–59.
36. Similar forms of destruction also took place in Europe where, by the 1500s, the destructive power of weapons such as guns and cannons had grown rapidly, in response to which fortifications became more elaborate. See Richard P. Tucker, “War and the Environment,” in *A Companion to Global Environmental History*, ed. J. R. McNeill and Erin Stewart Mauldin (Wiley-Blackwell, 2012), 234–35.
37. For Japan’s forestry situation due to shipbuilding, see Totman, *The Green Archipelago*, 67; and Sanbō Honbu, *Nihon senshi: Chōsen’yaku (Honhen fuki)* [Military history of Japan: The Chosŏn campaign] (Tokyo: Kaikōsha, 1924), app. 122.
38. *Sŏnjo sillok* 47:28A (1594.1.30).
39. On the naval battles, see Yi Min’ung, “The Role of the Chosŏn Navy and Major Naval Battles during the Imjin Waeran,” in Lewis, *The East Asian War, 1592–1598*, 120–40.
40. *Sŏnjo sillok* 43:9B (1593.10.16).
41. *Sŏnjo sillok* 61:51B (1595.3.18).
42. *Sŏnjo sillok* 61:13B (1596.11.7); *Sŏnjo sillok* 43:30B (1596.1.23).
43. Lee, “Protect the Pines, Punish the People,” 91.
44. Lee, “Protect the Pines, Punish the People,” 68.
45. *Sejong sillok* 121:39B (1448.8.27).
46. *Sejong sillok* 5:5A (1419.8.11); Noh Seongryong and Bae Jaesoo, “Chosŏn hugi songjŏng ūi chŏn’gae kwajŏng kwa t’ŭksŏng: Kukpang munje rŭl chungshim ŭro” [Development and character of policies for pine tree management in the late

- Chosŏn dynasty: Focusing on defense issues], *Asea yŏn'gu* 63 (2020): 46; Lee, "Protect the Pines, Punish the People," 73–77.
47. In 1872, the Chosŏn government ordered that national maps be drawn up. A total of 459 maps were completed at this time and are preserved in the archives of the Kyujanggak Institute for Korean Studies.
 48. Shin Yunho, "Imjin waeran shigi samdo sugun yŏn'gu"; *Sŏngjong sillok* [The veritable records of King Sŏngjong] 217:20A (1488.6.29).
 49. The position of army commander (*pyŏngma chŏltosa*) is outlined in the military section (Pyŏngjŏn) of the state code. According to the code, the primary responsibilities of the position were military training and national security. When confronted with a foreign invasion, the military commander should "immediately take appropriate measures and in case of any emergency, he has the authority to mobilize the military to take measures and then report to the central court afterwards."
 50. *Sŏnjo sillok* 27:23A (1592.6.28); *Sŏnjo sillok* 94:15A (1597.11.10). There were two magistrates on Kŏje during the war: the first was killed while fighting against the Japanese forces in 1593, and another replaced him. *Sŏnjo sillok* 23:10A (1593.8.4).
 51. Han Sungil, "16 segi chung-hu pan yŏnhae kunhyŏn ŭi chŏnsŏn paech'i wa unyong" [The deployment and operation of warships in coastal counties in the sixteenth century], *Chiyŏk kwa yŏksa* 42 (2018): 254.
 52. Yi Sunsin, *Nanjung ilgi* [War diary of Admiral Yi Sunsin] (Seoul: Han'guk kojŏ pŏnyŏkwŏn, 2001), 3, second day of the Ninth Month, 1595, https://db.itkc.or.kr/dir/item?itemId=MO#/dir/node?dataId=ITKC_MO_0232A_0080_010 (accessed December 4, 2020).
 53. Park Byŏngju, "Kwisŏn ŭi kŏnjo changso e taehayŏ—ssangbong chosŏnso rŭl chungshim ŭro" [Places for turtle ship building—focusing on the Ssangbong shipyard], *Kunsa* 5 (1982): 181–93; Kwon Soonkang and Lee Hoyoel, "Kyŏngsangdo nambu chiyŏk yŏnhae kunhyŏn kwa sugun yŏngjin ŭi sŏnso e kwanhan yŏn'gu" [Study on the shipyard of the coastal counties and the naval castle in the southern Kyŏngsang-do], *Kŏnch'uk yŏksa yŏn'gu* 28 (2019): 10.
 54. John King Fairbank, "A Preliminary Framework," in John King Fairbank, ed., *The Chinese World Order: Traditional China's Foreign Relations* (Cambridge, MA: Harvard University Press, 1968), 1–19; Harriet T. Zurndorfer, "Wanli China versus Hideyoshi's Japan: Rethinking China's involvement in the Imjin Waeran," in Lewis, *The East Asian War, 1592–1598*, 197–235.
 55. Ronald P. Toby, *State and Diplomacy in Early Modern Japan: Asia in the Development of the Tokugawa Bakufu* (Stanford, CA: Stanford University Press, 1991), 170–71; David C. Kang, *East Asia before the West: Five Centuries of Trade and Tribute* (New York: Columbia University Press, 2010), 54–81.
 56. Hyōjirō is also known as Yōshitsura. On peace negotiations during the war, see Akiko Sajima, "Hideyoshi's View of Chosŏn Korea and Japan-Ming Negotiations," in Lewis, *The East Asian War, 1592–1598*, 104–5; *Sŏnjo Sillok* 85:14B (1597.2.23).
 57. *Sŏnjo Sillok* 85:14B (1597.2.23).
 58. *Sŏnjo Sillok* 85:14B (1597.2.23).

59. Kitajima, *Toyotomi Hideyoshi Chōsen shinryaku kankei shiryō shūsei*, 3:447–54.
60. *Sōnjo sillok* 86:24A (1597.3.25).
61. *Sōnjo sillok* 86:23A (1597.3.24); *Sōnjo sillok* 86:24A (1597.3.25). See also Kitajima Manji, *Hideyoshi no Chōsen shinryaku to minshū* [The general populace and Hideyoshi's invasions of Korea] (Tokyo: Iwanami Shoten, 2012), 171–72.
62. *Sōnjo sillok* 86:24A (1597.3.25).
63. *Sōnjo sillok* 86:24A (1597.3.25).
64. *Sōnjo sillok* 86:24A (1597.3.25).
65. *Sōnjo sillok* 86:24A (1597.3.25).
66. *Sōnjo sillok* 86:27B (1597.3.30). The letter was written in the names of Yukinaga and Yanagawa Shigenobu on the fifteenth day of the Third Month in 1597.
67. *Sōnjo sillok* 82:7A (1596.11.2).
68. Kwŏn Hyŏp, *Sōktanggong Yōnhaengnok* [Diary of Sōktanggong on the trip to Beijing] (Seoul: Han'guk kojŏ pōnyŏkwŏn, 2001), twenty-fifth and twenty-sixth days of the Third Month of 1597, https://db.itkc.or.kr/dir/item?itemId=GO#/dir/node?dataId=ITKC_GO_1413A_0010 (accessed December 4, 2020). He went to Ming China three times, in 1553, 1597, and 1618.
69. Kwŏn Hyŏp, *Sōktanggong Yōnhaengnok*, seventh, twenty-fifth, and twenty-sixth days of the Third Month of 1597.
70. Miller, *Fir and Empire*, 162.
71. Concerning these conflicts on Kōje Island, Kitajima Manji has also argued that they became an excuse for Hideyoshi's daimyos to expand the scale of their campaign beyond Kyōngsang Province into neighboring Chōlla Province. Kitajima, *Hideyoshi no Chōsen shinryaku to minshū*, 171–72; *Sōnjo sillok* 87:31B (1597.4.19).
72. *Sōnjo sillok* 87:31B (1597.4.19).
73. Kitajima, *Hideyoshi no Chōsen shinryaku to minshū*, 171–72.
74. Lee Weohee, “Chōngyu chaeran'gi Ch'ilch'ōllyang haejŏn ūi p'aein punsŏk: Chōnjaeng ūi wŏnch'ik chōkyong ūl chungshim ūro” [Analysis on the cause of defeat in the Ch'ilch'ōllyang engagement: Focused on the application aspects of the principles of war], *Kunsa yŏn'gu* 139 (2015): 289–317.
75. Chōsen Nichinichiki Kenkyūkai, *Chōsen nichinichiki o yomu*, 14–15.
76. Lee, “Postwar Pines,” 328. See also Noh and Bae, “Chosŏn hugi songjŏng ūi chŏn'gae kwajŏng kwa t'ūksŏng,” 64–78.