

The Technopolitics of Modern East Asian Forests: Circulation of Forestry Knowledge and Ecological Legacies

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In 20th-century East Asia, forests were not merely natural entities. They were sites of complex history, shaped by the constant interplay of state power, science and technology, labor, and ecological actors. Forests were logged, transported, surveyed, and reforested, and ultimately shaped human bodies and daily life through issues such as allergies and biodiversity. The four papers featured in this special issue trace precisely this process. From timber rafting on the Yalu River to postwar Japanese cedar afforestation, the FAO-UNDP forest survey in South Korea, and cedar afforestation and pollen allergies on Jeju Island, these articles demonstrate how the technologies and policies surrounding forests were intertwined with East Asia's modernization, colonial experiences, Cold War-era development, and environmental health issues.

This project began at the 2025 AAEH (Asian Association for Environmental History) conference held in Takamatsu, Japan. Xiang Chi, Max Altenhofen, and Manyong Moon presented on a panel titled “Forests and Humans in the Twentieth-Century Korean Environment,” and Julia Mariko Jacoby participated as a member of the audience and exchanged views with the presenters. This event served as the catalyst for this special issue on the Technopolitics of Modern East Asian Forests. The four authors subsequently held an online workshop in May, where they shared their first drafts, discussed them, and revised their papers. Anonymous feedback from reviewers and the editorial board during the peer-review process greatly improved the quality of the papers, culminating in today's special issue.

The first article in this special issue, Xiang Chi's “The Making of the Sino-Japanese Hybrid Raft,” focuses on the transnational circulation and indigenization of knowledge and technology. It traces the evolution of timber-transport rafting techniques in the Yalu River basin in the early 20th century. The Japanese colonial authorities attempted a complete replacement by framing their own raft-tying and navigation techniques as “civilized modern technology,” while portraying traditional Chinese timber laborer (muba 木把) methods and rafts as primitive and uneconomical. However, given the Yalu River's rugged hydrological environment

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and the specific nature of local labor practices, what emerged was not a unilateral replacement but a technological hybridization known as the Sino-Japanese hybrid raft, which combined a Japanese-style lightweight frame with Chinese-style steering oars. This article thus demonstrates that colonial technology transfer was not a linear process of modernization, but rather a complex process of reorganization within the context of local ecology and labor norms.

Next, Max Altenhofen's paper, "Inventorying for Reforestation," analyzes the aerial photogrammetry and forest resource survey projects introduced to South Korea through technical assistance from international organizations during the Cold War (1964-1973). While the FAO-UNDP sought to transplant standardized industrial forestry development models from Europe and North America, South Korean foresters and bureaucrats did not merely accept them; instead, they selectively adopted and appropriated these models to establish an indigenous national forest resource survey system centered on forest conservation, erosion control, and watershed management. This paper critically expands upon the concept of "legibility" proposed by James C. Scott, revealing that the technical standardization—which enabled the production of forest data, the regulation of slash-and-burn farmers, and the governance of space—was constructed through continuous negotiations between international advisory teams and domestic experts.¹

The third paper, "From Economic Miracle to Pollen Allergy Crisis" by Julia Mariko Jacoby, traces the historical trajectory of Japan's postwar forest rationalization policy, which was launched in 1957 with the National Forest Productivity Enhancement Plan. While this policy drove the large-scale expansion of monospecific coniferous forests (Japanese cedar and Japanese cypress), the subsequent liberalization of timber imports and rural depopulation in the 1960s precipitated unintended consequences: the collapse of the forestry industry and the abandonment of forests. Furthermore, the pollen emitted by mature trees triggered a hay fever crisis in the 1980s, which has since become a "national disease" and a social disaster affecting more than 40 percent of the population. Jacoby sharply points out that, rather than undertaking fundamental reforms to its forestry policy, Japanese society remains trapped in technocratic solutions—such as the development of pollen-free cedar—and a subsidy system, thereby perpetuating material and institutional path dependence.

In line with this, Manyong Moon's paper, "The Dual Nature of Japanese Cedar Trees on Jeju Island," sheds light on the unintended consequences of Japanese cedar afforestation on Jeju Island, which lay hidden behind South Korea's successful 10-year mountain restoration and reforestation plan launched in 1973. Initially welcomed as fast-growing trees—serving as windbreaks for citrus orchards and as a

¹ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

source of timber—and forming the island's largest artificial forest, Japanese cedar trees were identified in the late 1980s as a major allergen causing allergic rhinitis and faced fierce criticism as an invasive species that undermines biodiversity. At the same time, however, these cedar forests are now—more than 50 years later—marketed as Jeju's unique tourist attraction and cultural heritage. By illuminating the dual status of the Japanese cedar—which has evolved from a useful resource to a pariah (allergen/ecological threat) and finally to an iconic landscape—Moon offers insights into the nature of the ecological policy failure resulting from national afforestation policies that prioritized quantitative expansion, as well as the historical lessons to be learned.

A secondary theme uniting these four papers is the consistent linkage between forest development and mechanisms of social control. On the Yalu River, innovations in rafting techniques were tied to the strategies of colonial enterprises aimed at breaking the Chinese “muba” workers' monopoly on these skills and restructuring their livelihoods. In South Korea's FAO-UNDP forest survey, aerial photography and sample surveys not only transformed forests into manageable resources but also served as the basis for state intervention to identify slash-and-burn areas and relocate and control mountain residents. In Japan's postwar afforestation policies as well, the crises surrounding labor in mountain villages, property rights, communal usage rights, and forestry labor were regarded as obstacles to rationalization. Thus, the history of forests is not merely the history of trees and soil, but also the history of how workers, mountain residents, bureaucrats, scientists, corporations, and international organizations viewed and managed forests.

These four papers collectively invite us to reinterpret the history of East Asian forests not as a history of nature's restoration but as a history of shaping and managing nature in specific ways. The rafts on the Yalu River reveal the world of technology and labor required to transport forest resources along the river, while the FAO-UNDP forest survey illustrates the process by which the state transformed forests into objects it could interpret through aerial photographs and statistics. The history of Japanese cedar afforestation reveals how bureaucracy and a certain logic of 'rationalization' have shaped a form of forestry industry that became heavily dependent on state intervention, ultimately requiring the state to address its problems such as the pollen allergy crisis, while the paper on Jeju cedar demonstrates how this issue is reframed within the contexts of South Korea's forest greening efforts, regional landscapes, public health, and debates over indigenous ecology.

Ultimately, these four papers propose a new way for us to view forests. A forest is neither a backdrop for development, nor a symbol of national success, nor simply a space of untouched nature. A forest is a historical site where layers of transferred technology, selected tree species, mobilized labor, accumulated data, and belated physical reactions overlap. From this perspective, the history of East Asian forests is no longer a one-sided success story of green mountains, but rather a space for

reflecting on the promises of an era when humans believed they could rationally manage nature, and the complex legacy those promises left behind. Therefore, by situating the history of East Asian forests at the intersection of environmental history, the study of science and technology (STS), the history of medicine, and transnational history, these four studies will provide new critical insights into forest governance for us today, as we navigate an era marked by the climate crisis and the loss of biodiversity.