Paper ID	013
Author(s)	Yuk Ping (Daisy) Wan
Title	Acknowledgment of the Environment: Political Ecology of the Hunan region during the period of early imperial China, c. 223 BCE-280 CE

Abstract

Hunan is a core region of the middle reaches of the Yangtze River. Its plentiful water resources and favorable environment, mainly the Lake Dongting and Xiang River drainage basin, have long attracted human settlement and activities, shaping a multi-ethnic southern frontier region of the early Chinese empires two thousand years ago. The Qin and Han empires gradually expanded and strengthened state control into the Hunan region, evaluating and transforming the local economic and ecological landscapes to provide more arable lands and taxable surplus.

This presentation explores the political ecology of the early imperial Hunan, focusing on the state management of the flow of energy and resources, including human labor and natural resources or economic products, along the water. Specifically, I emphasize the interrelationships between the state, society, economy, and the environment, with diverse evidence and GIS spatial analysis.

Key questions are: What kinds of landscapes, flora, fauna, and people were considered beneficial or threatening for the empires? How did the governments extract and distribute both human and natural resources? The first part investigates the state's evaluation and understanding of the Hunan environment and taxable resources. The second part sheds light on the state's management of people and environment in various aspects, including the local administration, legal system, production activities, etc., emphasizing the rivers and lakes. I argue that the states' evaluation, regulations, and distributions of resources and people mirror the intricate interrelationships between the environment and state-building processes.

Keywords	Animals, Plants, Water, Land, and Humans.

Paper ID	015
Author(s)	Yu-Cheng Shih
Title	Brackish Dilemma: Fishing Industry, Local Politics, and Wetland Ecosystems in the Making of Modern Yangzi Delta, 1870-1930

Abstract

This paper highlights the importance of intertidal wetland ecologies in understanding the Yangzi Delta—the economic, cultural, and political core of modern China. This estuarine region, being subject to the constantly changing levels of water and salinity, was once among the most biologically diverse wetland ecosystems worldwide before its transformation into a major crop-producing region of global importance. Yet it remains unclear how such developments have impacted the local environment with respect to eco-consequences, especially in the inland areas of lakes and rivers where freshwater runoff encounters estuarine saline waves. With an emphasis on the brackish riparian dynamics, this essay explores the anthropogenic consequences where the market-driven industrialization since the nineteenth century transformed farms of this region into barren marshlands and vulnerable enclaves with constant floods, diseases, and other calamities.

By bringing back the saline environment into scope, this project portrays a landscape of the Yangzi Delta where marginal farmlands turned "back" into flourishing wetlands in the late 19th century. It seeks to historicize the series of inundations and other hydraulic issues around Lake Tai—the inland water center of this region as well as the biggest freshwater lake in southeastern China— since 1800 in the broader contexts regarding the lowland

ecosystems. By so doing, it attempts to uncover the ways in which human experiences with water have been reshaped by the vibrant interactions across aquatic vegetation, tidal effects, migratory fish, and other wetland microorganisms. Based on these multi-species intersections, this paper gives an original approach in rethinking why and in what ways the northern counties of Lake Tai became a frontier of the rising fishery, an industry that served to sustain the growing food demands in urban Shanghai. With newly found Japanese, British, and French sources, this research contributes to an original approach in scrutinizing how human and nonhuman agents co-face the growing salty waves from the estuaries.

Keywords	wetland ecologies, Yangzi Delta, salinity, intertidal environment, estuary, hydraulic, fishing, multi-species, water governance, local politics, food, floods

Paper ID	023
Author(s)	Yiying Pan
Title	Fixing Rapids on Paper? Exchange of Hydrographic Knowledge and Diplomatic Negotiation over the Localization of Maritime Regulatory Regimes in Inland Waters

Abstract

Between 1830 and 1930, major political and economic entities in Europe, Asia, and the Americas became increasingly connected by steam navigation and railway transportation. Against this global backdrop, steam navigation was established and became regular on the formidable Upper Yangzi River in China between the 1870s and the 1920s. Throughout this process, China, Britain, and the other treaty powers had tedious diplomatic negotiations over how to establish international navigation regulations for this complicated river segment. These diplomatic contestations were oriented toward a type of riverine condition rapids (tan)—fierce and turbulent river currents that had long imposed technological constraints on navigation.

This paper traces the interaction between hydrographic surveys of rapids and the formation of the Upper Yangtze Navigation Regulations, a localized variation of the Regulations for Preventing Collision at Sea that had been widely adopted by the maritime nations since the 1860s. Employing Chinese, British, and French sources, this paper analyzes how the inland extension of maritime regulatory regimes hinged on multidirectional processes of knowledge exchange, including translingual exchange of hydrographic concepts, codification of experiential knowledge into written or graphic records, and the synthesis of riverine complexities into legal norms. In particular, this paper foregrounds how the eco-social dynamics of rapids diversified the methods of enforcing navigation security as global maritime networks moved into inland waters. This paper joins a growing body of scholarship in reconstructing how diverse watery environments shaped the global circulation of maritime norms and the expansion of global economic interactions during the modern period.

Keywords	River Rapids, Hydrographic Knowledge, Steam Navigation, Glocalization, Maritime Law

Paper ID	166
Author(s)	Kerby C. Alvarez
Title	Anak ng Pasig Naman Kayo!: Environmentalism, Nationalism, and the Pasig River Rehabilitation in Metro Manila, Philippines since the 1990-2019

Abstract

From the ancient times to the Spanish colonial period, and throughout the 20th century, the Pasig River has

been a vital waterscape of the country's capital region, Metro Manila. For centuries, historical records indicate that almost all vital economic and environmental activities took place in the river, from transportation to daily economic activities. The river gradually deteriorated and in 1990, ecologists and environmentalists in and on the Philippines declared it "biologically-dead." In the following years, multi-sectoral efforts and partnerships, both from the government, private organizations, and civil society organizations, were launched to "clean," "save," and "revive" the said river. For almost three decades, the national efforts to rehabilitate the "dead" river have evolved from reactive approaches such as clean-up drives and formative campaigns of environmental awareness to proactive (yet toothless) campaigns to eradicate the primary source of Pasig's pollutants – factories, highly-density settlements, and the polluted waterways connected to the river.

This paper argues that the rehabilitation efforts for the Pasig River are emblematic representations of the country's discourse on environmentalism, and correlated and have a strong intersection with the nationalist perspectives of the era, as it coincided with the national sentiments of the era. Therefore, various forms of environmentalism and nationalism were projected, all grounded on the use of the Pasig River, and its story of degradation and hope for revival as a core narrative to recalibrate its sordid past.

Keywords	Pasig River, Water, Human Settlements, Pollution

Paper ID	293
Author(s)	Minoru TOKUMASU, Yoshinori YAMADA, Ki-Cheol SHIN and Keiji TAKASE
Title	Water use to prevent salinization under climate change in the Saijo Plain, Japan

Abstract

Water sources for irrigation and life of the Saijo Plain in Ehime Prefecture are the Kamo River water, shallow groundwater discharged from the middle reaches of the plain, and deep confined groundwater. Climate change has caused drought to become more frequent in recent years, and dependency on groundwater increases during drought periods. As a result, salinization of groundwater is increasing in coastal areas. Drought was particularly severe in July 1994. The groundwater level dropped significantly, leading to increased salinization in coastal areas, causing damage to agriculture. In this study, we propose efficient and sustainable water use to mitigate the fall in groundwater levels during droughts.

The hydrological analysis of the plains during the drought year was carried out as follows. In August of 2021, when shallow groundwater had ceased discharging because of drought, surface water and groundwater were collected and water flow rates were measured at 43 points in the Saijo Plain. We focused on the difference in Stibnite (Sb) content in each water source and used them as tracers for hydrological analysis. The ratio of the water source at each point was determined from simultaneous equations using the Sb concentrations. A lumped parametric model was used to simulate the groundwater level.

As a result, even during droughts every few decades, the risk of salinization was found to be significantly reduced by the efficient allocation of irrigation water from the Kamo River and proper management of groundwater pumping. A detailed analysis will be provided in our presentation.

Keywords	water source, drought, salinization, climate change, Stibnite