

# Knowing the Littoral: Perception and Representation of Terraqueous Spaces in a Global Perspective

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**Abstract:** Littorals are interfaces between worlds, where land and water meet and mingle. Central to human interaction with the sea, these regions, veritable staging grounds for globalization, have been thoroughly analyzed, mostly as discrete singularities, important for their unique local features. The global ocean is, however, a medium of physical, biological, and cultural connection among littorals. Each shore is thus also part of the “global coastline.” Building on this idea, this Focus section brings to the forefront and historicizes the interconnectedness of coasts and littoral knowledge on a planetary scale.

Neat distinctions between land and sea are recent constructs. The two have, indeed, long been seen as inseparable, mingling incessantly along the world’s shores. The coastline of modern Western cartography, as Paul Carter explains, “is an artefact of linear thinking, a binary abstraction that corresponds to nothing in nature.” Littorals, independently of whether one defines them strictly, including just the intertidal zone, or adopts a broader cultural approach, extending them way beyond the reach of the tides, are much more blurry and unruly than they appear on maps.<sup>1</sup> They actually defy our efforts to assert material and legal control.

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<sup>1</sup> Paul Carter, *Dark Writing: Geography, Performance, Design* (Honolulu: Univ. Hawai’i Press, 2008), p. 9. See also Henry Bokuniewicz, “Littoral,” in *Encyclopedia of Coastal Science*, ed. Maurice L. Schwartz (Dordrecht: Springer Netherlands, 2005), pp. 592–594, [https://doi.org/10.1007/1-4020-3880-1\\_195](https://doi.org/10.1007/1-4020-3880-1_195); and Katherine G. Sammler, “The Rising Politics of Sea Level: Demarcating Territory in a Vertically Relative World,” *Territory, Politics, Governance*, 30 June 2019, pp. 1–17, <https://doi.org/10.1080/21622671.2019.1632219>. For a detailed discussion of the role of littorals in history and of the historiographical category of the terraqueous see also John R. Gillis, *The Human Shore: Seacoasts in History* (Chicago: Univ. Chicago Press, 2012); Michael N. Pearson, “Littoral Society: The Concept and the Problems,” *Journal of World History*, 2006, 17:353–373; and Alison Bashford, “Terraqueous Histories,” *Historical Journal*, 2017, 60:253–272, <https://doi.org/10.1017/S0018246X16000431>.

The production of knowledge about these constantly changing boundary areas, pivotal for trade, travel, and exchange, has long been crucial. For obvious reasons of proximity, the interaction between human societies and the sea has had the longest history and the greatest impact along the world's littorals. Because of the dangers closeness to land entails for navigation, sailing instructions, in the form of both rutters and nautical charts, have always paid particular attention to shallow waters. Conversely, the need to defend the land, both from the encroaching sea itself and from marauding foreigners, has led to an enhanced understanding and mapping of these hybrid regions. Knowing littorals has thus been, historically, an act of power, allowing those concerned to secure commerce and improve safety, while also facilitating access to the wider world.

Littorals can, however, be visualized from radically diverging perspectives: very different aspects will be registered depending on whether they are observed from land or sea. The point of view selectively highlights or hides critical features. Mapping coasts from the sea, for instance, is, as shown by Richard Sorrenson in his seminal study of ships as scientific instruments, mostly a matter of inferring that leaves much unknowable or undefined. Looking at the sea, and in particular at its life-forms, from the littoral will produce very different pictures, or even scientific approaches, depending on the local geomorphology, as highlighted by Raf de Bont in his comparison of the marine stations in Naples and Wimereux.<sup>2</sup>

This Focus section is the product of a panel on the production of knowledge in and about littorals organized at the 2019 History of Science Society meeting in Utrecht. It offers a first attempt at a global comparison of the ways in which littorals have been perceived and represented in different social, cultural, and scientific settings through the age of proto-globalization.<sup>3</sup> The individuality of coastal ecotones has long been central to their understanding: traditionally they have been seen as discrete singularities, which deserved to be analyzed for their peculiar and exceptional features. Knowing the littoral has often meant mapping and describing a specific shore. But each coast is more than that. It is also an intrinsically mobile element of a global coastline, subject, through sedimentation, erosion, and biological exchange, to the constant agency of the global ocean. Recognition of the interconnectedness of all littorals has become more urgent in the face of the challenges posed by the Anthropocene, but the history of how coasts have been known and represented sheds new light on how connections between global change and local instability have a longer history.<sup>4</sup>

The essays collected here discuss the perception and representation of intertidal zones in a *longue durée* perspective and on a planetary scale. Chronologically, the contributions range from late medieval times to the nineteenth century, stopping just at the time when, on the one hand, coasts were construed as “lines” by Western science and, on the other, they began to be appreciated as spaces of leisure, a signal of a radical change in the way they were approached.<sup>5</sup> Spatially, the assembled contributions touch very different geographical regions, looking at the representation of danger and risks along the coasts of Qing China, the interactions between shores and

<sup>2</sup> Richard Sorrenson, “The Ship as a Scientific Instrument in the Eighteenth Century,” *Osiris*, 1996, N.S., 11:221–236; and Raf de Bont, “Between the Laboratory and the Deep Blue Sea: Space Issues in the Marine Stations of Naples and Wimereux,” *Social Studies of Science*, 2009, 39:199–227.

<sup>3</sup> On the periodization of globalization see Antony G. Hopkins, “Introduction: Globalization—An Agenda for Historians,” in *Globalization in World History*, ed. Hopkins (New York: Norton, 2003), pp. 1–10, esp. pp. 3–4.

<sup>4</sup> Hervé Regnaud and Patricia Limido, “Coastal Landscape as Part of a Global Ocean: Two Shifts: Images, Ocean, Global Climate,” *Geo: Geography and Environment*, 2016, 3(2):1–14, <https://doi.org/10.1002/geo2.29>, esp. pp. 9–11.

<sup>5</sup> On these changes see, respectively, John R. Gillis and Franziska Torma, “Introduction,” in *Fluid Frontiers: New Currents in Marine Environmental History*, ed. Gillis and Torma (Winwick: White Horse, 2015), pp. 1–12, esp. pp. 8–9; and Alain Corbin, *The Lure of the Sea: The Discovery of the Seaside in the Western World, 1750–1840* (Berkeley: Univ. California Press, 1994).

open sea in the Atlantic World, the role of the marginal seas of continental Europe in the development of sea level as a geodetical reference point, and the reciprocal influx of law and science in the silted environments of the Bengal Delta.

In her take on Ming and Qing coastal cartography, Elke Papelitzky explores the motives behind the exclusive reliance of Chinese navigators on written sources rather than graphical representations. This was particularly evident in the sparseness and inconsistency with which sandbanks, shallow waters, and other navigational hazards found a place on maps of the coasts—all due to the fact that mapmaking was essentially an intellectual undertaking that extracted knowledge from sailors but gave nothing back. Detailed knowledge about the littorals thus moved only from sailors to literati mapmakers, never in the other direction. The maps the latter produced did not, in fact, allow for the determination of one's location and were not used as aids to navigation, which made the graphical representation of dangers a fancy rather than a necessity. The attitude toward the possible uses of maps changed over time, and navigation charts depicting depths and risks in detail became more common in the nineteenth century.

Christopher Pastore focuses his attention on the role of shallow waters in promoting efforts to further knowledge about the oceans and their life in the Age of Exploration. The sea was from early on a space of connection between littorals, giving shape to a tightly connected Atlantic World. Combining the analysis of folklore, firsthand observations, and natural history, Pastore shows how a less heroic, more inclusive, and geographically more expansive way of producing knowledge about the sea from the coast preceded the nineteenth-century development and institutionalization of oceanography and laid the foundations for state-sponsored investigations of the high seas. Early forms of knowledge about the oceans were rooted in the littorals and were the products of geographical and social peripheries.

My own essay moves the section toward the history of ideas, looking in detail at a pre-Anthropocene, eighteenth-century scholarly debate about perceived changes in the level of the sea. Peculiar geomorphological conditions of some coastal stretches in Europe's marginal seas were generalized into grand theories. This was foundational in the development of both the unique idea that the constantly changing littorals are actually the fringes of an impressively stable sea and their use as standard baselines for altitude measurements.

In her contribution, Debjani Bhattacharyya shifts the reader's attention to a rather more practical aspect of life on the littorals: the complex relationship between law, nature, and science. The history of sediments, their study, and their legal framing in the Bengal Delta, where the littoral is subject to the opposing influences of both tides and riverine silting, serves as an exemplary and compelling case study. Each in its own way, all the pieces in this section connect past understandings of littorals with contemporary sensibilities. This one does so in an even more explicit manner, however, bringing the nineteenth and twenty-first centuries together in an account that challenges the same idea of boundaries between land and water.

The discussion concludes with a commentary by Marina Tolmacheva that connects all the essays in a comparative perspective that looks from the littorals to the oceans and the more general issue of navigation. The commentary extends the global reach of this Focus section by touching on the scant knowledge available about pre-European accounts of shallow waters in the Indian Ocean.