

CASKS OF OIL BURDENS OF BALEEN

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THE IMPORTANCE OF WHALES AND WHALING IN BRAZIL (17TH - 18TH CENTURIES)

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Framework

Whaling in Brazil was a Crown Monopoly - first Iberian and since 1640 Portuguese - in effect from 1614 to 1801.

Our goal was to characterize the operation and to understand the importance and value of whales and whaling in the context of the Portuguese settlement in South America in the early modern period.

Our study was founded by a deep bibliographic review, and the collection and critical analysis of written historical sources, complemented by iconography elements (Fig. 1).

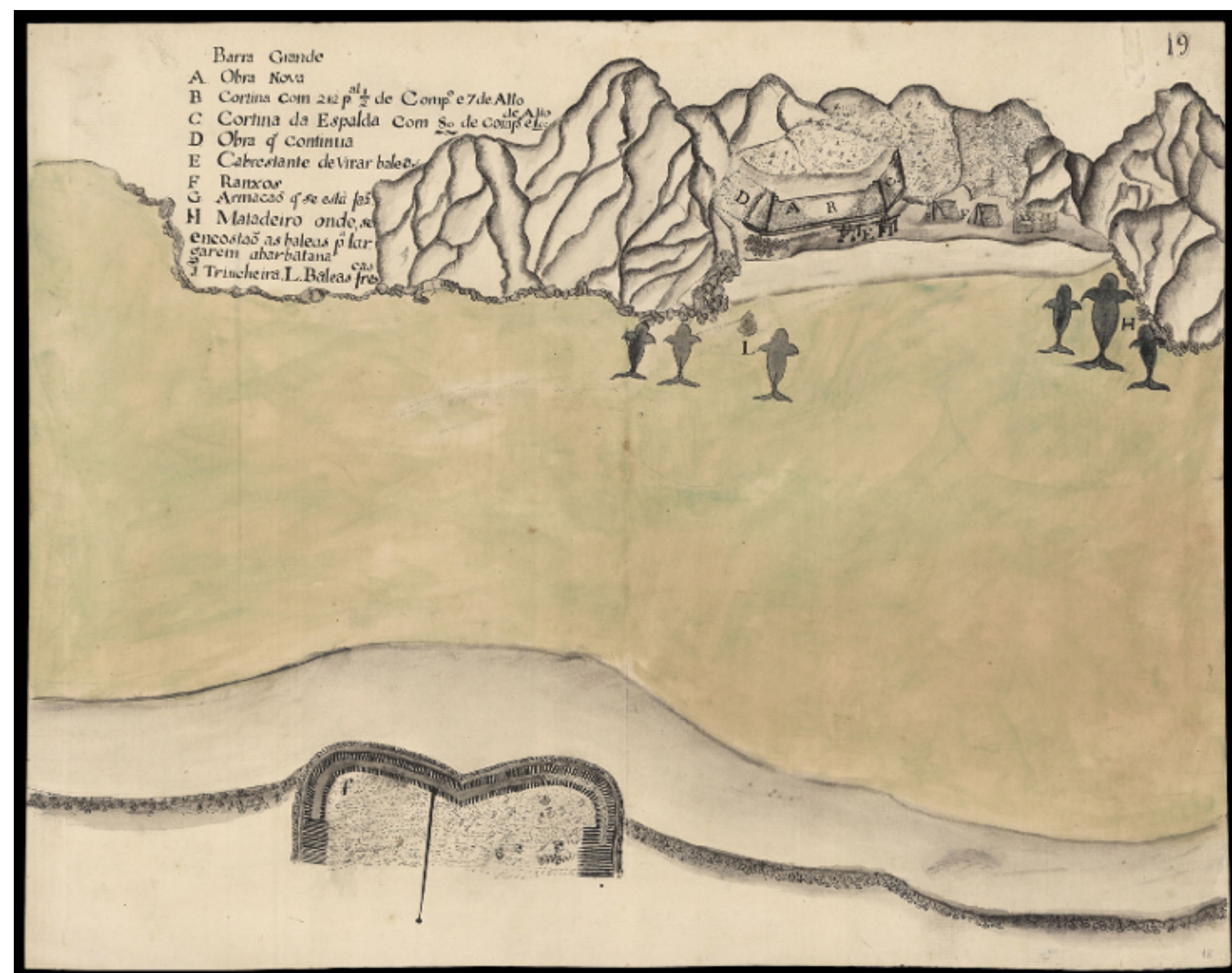


Figure 1: Fortress plant of Barra de Santos, São Paulo in *Cartas Topograficas do Continente do Sul e parte Meridional da America Portuguesa...*, 1775.

Whaling stations

During the almost two centuries of this operation, whaling stations ("armações") were developed sequentially, from north to south (Fig. 2), in Bahia (early 1600), Rio de Janeiro (c. 1620), São Paulo (c. 1730) and Santa Catarina (c. 1740), accompanying the appropriation of the shoreline and the establishment of the first coastal villages. Whaling stations were set in protected areas such as bays and sheltered waters between the mainland and close islands, strategically planned and supported by the geographic and natural features of the region and sometimes also by military protection.

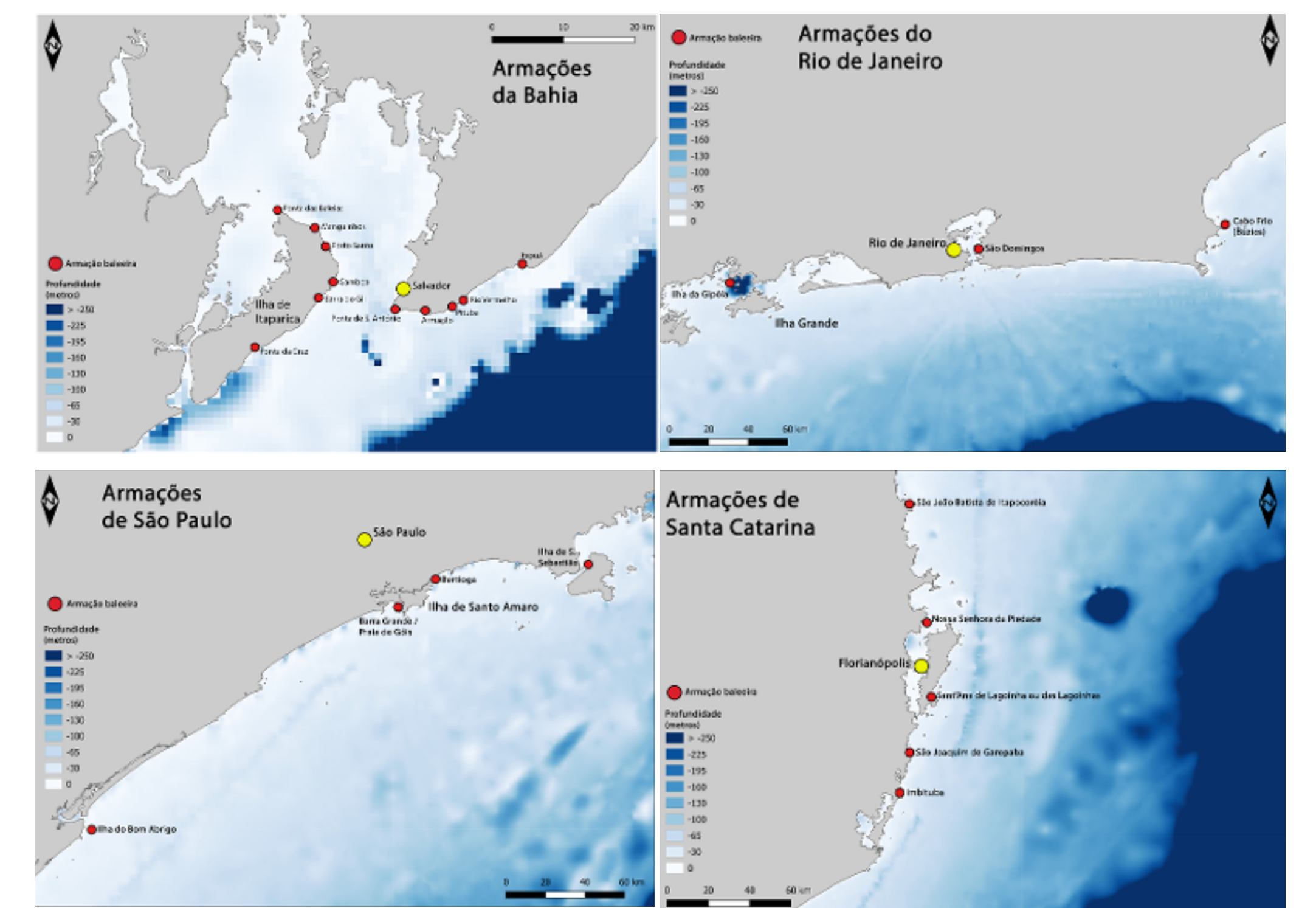


Figure 2: Whaling stations of Bahia, Rio de Janeiro, São Paulo and Santa Catarina (1614-1801). Maps design by Patrick Hayes, 2019.

Whale products from Rio to Lisbon

The processing methods were rudimentary, and some stations did not have size and capacity to process all the animals or each animal entirely and properly, despite the huge effort in the hunting, contributing to the discharge of a large number of whales. Descriptions of the whaling stations environment also reinforce a heavy scenario of unbearable temperatures, animal entrails and forced labour. The activity was economically relevant due to

the contracts established and the main commercial products: mostly whale oil and baleen and later also spermaceti. The oil was mainly utilized in Brazil and so far the consumption and navigation of the product in and for Portugal has been overlooked. Our analysis of contracts-related documentation and ship cargoes from Rio de Janeiro to Lisbon between 1764 and 1785 may be revealing a different pattern of usage and valorisation in Europe.

Between 1765 and 1776 a total of 57.500 barrels of whale oil was produced where the shipment to Lisbon was on average 47,8% of the total production (Fig. 3). The baleen plates were stocked in burdens, each weighing 4 "quintais" (a former Portuguese measure) or 235 kg. In those twelve years, the production was of 26.824 "quintais" that were shipped in its totality to the metropolis (Fig. 4), confirming the demand of European markets.

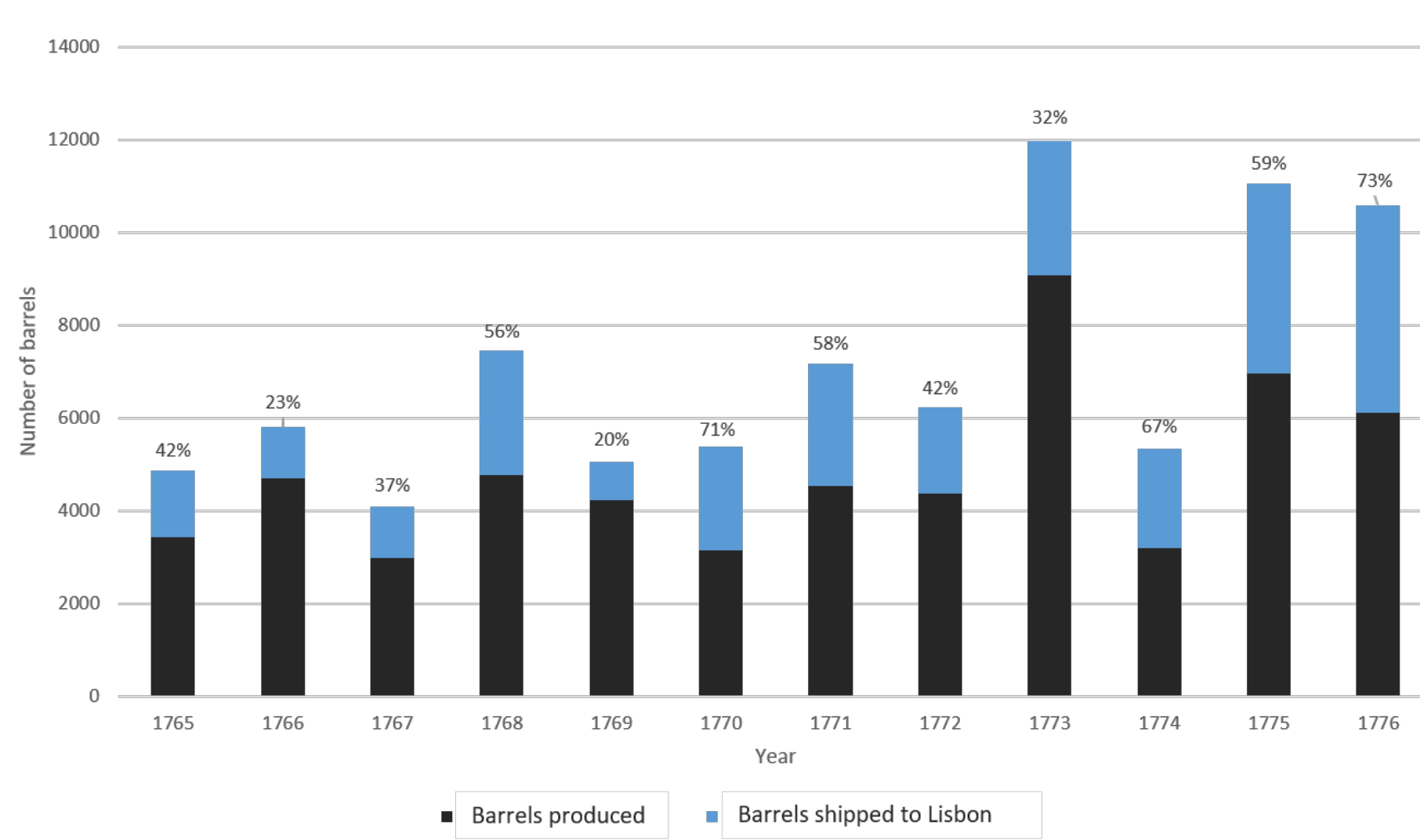


Figure 3: Whale oil produced in Brazil and shipped to Lisbon (1765-1776)

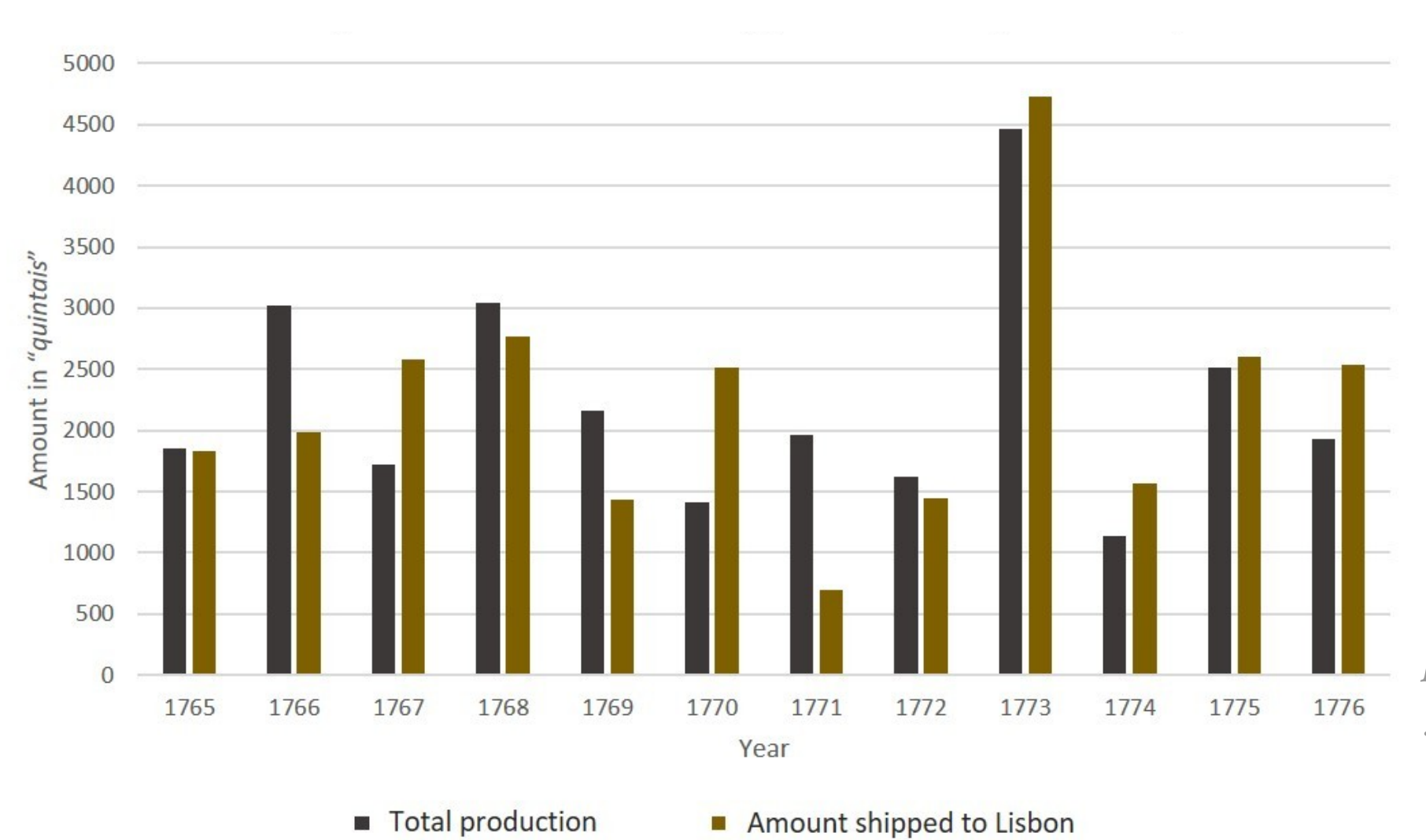


Figure 4: Baleen produced in Brazil and shipped to Lisbon (1765-1776)

Species and whaling styles

Within this whaling operation, thousands of whales were hunted, most probably southern right whale (*Eubalaena australis*) - represented in Fig. 1 - and humpback whale (*Megaptera novaeangliae*). These are migratory animals who travel annually between their feeding areas in circumpolar cold waters and breeding tropical areas, such as the waters of Brazil, where they mate and give birth. By the late 18th century the first concerns about the hunting of calves were discussed.

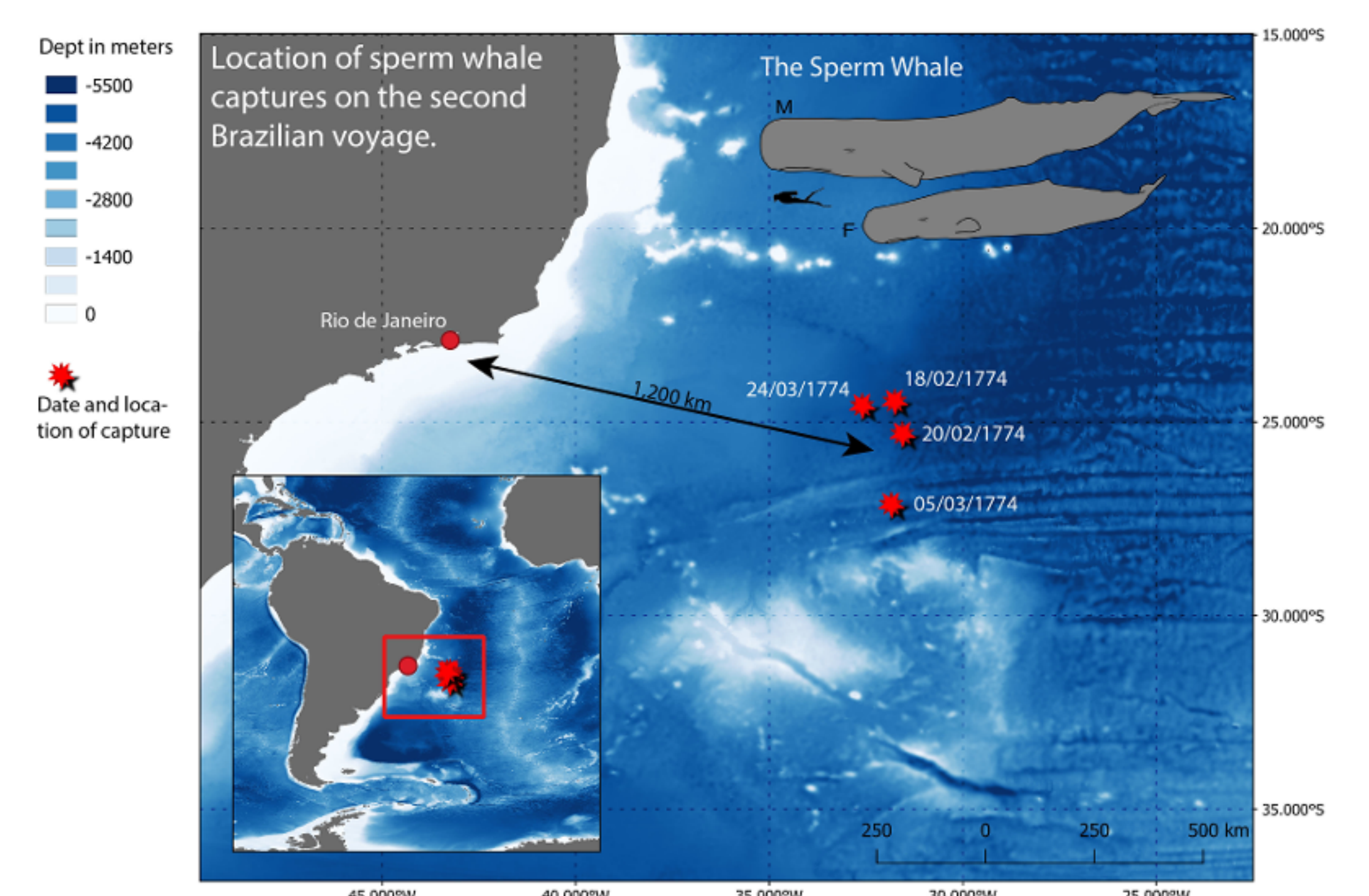


Figure 5: Location of sperm whale captures between February 5 to April 1, 1774, where nine whales were caught, at an average depth of 5,100 meters. Nina VIEIRA, Patrick HAYES & Al MATTHEWS, "Facing Changes, Changing Targets: Sperm Whale Hunting in Late Eighteenth-Century Brazil," *Environment & Society Portal, Arcadia* (Autumn 2019), no. 44. Rachel Carson Center for Environment and Society, available at <http://www.environmentandsociety.org/node/8798>

At least for the period 1774-77, the operation was also targeting sperm whale (*Physeter macrocephalus*), chased in the open sea (Fig. 5), which was entirely new for those whalers of the south who learned from a North American crew.

The activity conducted in colonial Brazil seems to have been the only whaling operation of Iberian origin organized in the South Atlantic. According to the 'Taxonomy of Whaling' concept defined by Randall R. Reeves and Tim D. Smith¹, we characterized this operation as Basque-style in its entire extension and American-style Shore for a short period.

Our new data about circulation and valuation of whale products point to new research questions that will allow to understand, in the future, the relation between centres of extraction, places of transformation and those of final consumption in a past commercial network supported by a marine living resource. Further studies are expected to understand this whaling operation in its cultural, commercial and environmental dimensions.

¹ Randall R. REEVES & Tim D. SMITH, "A taxonomy of world whaling: Operations and eras", in James A. ESTEES, Douglas P. DEMASTER, Daniel F. DOAK, Terrie M. WILLIAMS & Robert L. BROWNELL, Jr. (eds.) *Whales, whaling, and ocean ecosystems*. University of California Press, London, 2006.