

Exotic oyster *Saccostrea cucullata* in mangroves in Protected Areas on the southeastern coast of São Paulo (Brazil)

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The exotic oyster *Saccostrea cucullata*, originally from the Indo-Pacific, was first recorded in 2014 on the Brazilian coast in the Bertioga region (SP, 23°S). Its arrival in the country is due to the activities of ships in the Port of Santos (SP), the largest in Latin America. In 2019, the mapping of the distribution of *S. cucullata* in the mangroves on the southeastern coast of São Paulo (24°S) was carried out. But this species had already been observed in the region by the local community, in 2017. The region is recognized by UNESCO and the Ramsar Convention and has several for Integral Protection and Sustainable Use Conservation Units (CU) categories. More recently, this exotic species was registered in the states of Rio de Janeiro (22°S), Paraná (25°S) and Santa Catarina (27°S). The current study aims to evaluate the population of exotic oyster *Saccostrea cucullata* in mangroves in Protected Areas (PAs) on the southeastern coast of São Paulo (Brazil). In a joint action between the university, the management of APs and the local fishing community, four Sustainable Use CUs were selected to assess the population of exotic oysters. For this, two approaches were defined. In the first approach, only exotic oysters were collected, on different substrates, in three Sustainable Use CUs: Taquari Extractive Reserve (EXTRE), Itapinhapima Sustainable Development Reserve and Cananéia-Iguape-Peruíbe Environmental Protection Area, in September / 2019. In the second approach, four plots (P1 to P4) were defined in mangrove forests in EXTRE Ilha do Tumba in winter (August / 2019) and summer (March / 2020). In 9m² subplots, all native (*Crassostrea brasiliana*) and exotic (*S. cucullata*) oysters fixed in the red mangrove rhizophores *Rhizophora mangle* were collected, as well as the interstitial salinity at 10 cm depth. In the laboratory, all oysters were counted, and the total weight were obtained using a digital scale. In the first approach, a total of 516 exotic oysters, weighing 22.2 kg, were collected in red mangrove rhizophores and on the sandy sediment. In the 2nd approach, in winter, 3,963 totals of native and exotic oysters were collected, with P1 15%, P2 15%, P3 4% and P4 17% of exotic oysters, with a total weight of 8.3 kg. In summer, a total of 4,137 native and exotic oysters were collected, with P1 16%, P2 9%, P3 9% and P4 9% exotic oysters, weighing a total of 7.7 kg. Regarding interstitial salinity, in the region of study of the 1st approach, the salinity value was 29 ppm, showing that it is similar values carried out in previous years in the mangroves on this same coastal sector. In the EXTRE of Ilha do Tumba, in the winter samples, the salinity values varied between 27 and 37 ppm and in the summer between 24 and 35 ppm. The highest values were obtained in the southernmost plots of the estuary. It is believed that they are due to the contribution of salt water from the new connection between the Atlantic Ocean and the estuary, due to the rupture of a sandbar. The effort between the three spheres, university, local community, and CU management (state government level) improved the current study. The recent connection between the Atlantic Ocean and the coastal system has contributed to the increase in salinity further south of the estuary, favoring the development of the exotic oyster. The important presence of exotic oysters in PAs on the southeastern coast of São Paulo highlights the urgent need for monitoring and management strategies to assist in the conservation approaches of this coastal system.

Keywords: Invasive species; Natural and anthropic impacts; Management