

# LANDSCAPES & ARCHAEOLOGY: Settlement patterns in the South-Central coast of Santa Catarina (Brazil) in front of palaeoenvironmental changes

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Figure 1: Study area with the seven cores drilled along the littoral. 1- Garopaba, 2- Figueirinha, 3- Riachinho, 4- Sangão, 5- Campo Mãe Luzia, 6- São João do Sul and 7- Sta. Rosa do Sul.

## INTRODUCTION

Environmental changes affected the geomorphology of the south central Santa Catarina Coastal Plain (Brazil) during the Holocene. Climatic turnovers and sea-level fluctuations promoted the formation of sandy barriers, wide lagoon systems and vegetation changes in a context of human occupation.

## MATERIALS & METHODS

Palaeosea-level behaviour prediction curve for this area (Milne *et al.*, 2005; Angulo *et al.*, 2006) was used to construct a graphic combining the palynological results obtained from seven continental cores drilled in the Coastal Plain (Fig.1 and Fig.2) (Amaral *et al.*, 2012; Cancelli, 2012; Kuhn *et al.*, 2017; Val-Peón *et al.*, 2017).

## DISCUSSION & CONCLUSIONS

- Maximum transgressive *ca.* 5100 BP: terrains flooded by the sea (Figure 3A).
- Interconnected lagoon system progressively transformed in swamps after *ca.* 4000 BP (Figure 3B).
- Atlantic Rainforest development from *ca.* 2500 BP onwards following S-N direction (Figure 3C).
- **SAMBAQUIS' BUILDERS**: settlements on the highest points of the sand barrier during the transgression. Progressive occupation of the land released by the sea. High degree of specialization in coastal environments.
- **MERIDIONAL JÊ GROUPS**: more intensive occupation in the highlands. Coastal sites are scarce and related to late sambaquis: are they interaction sites consequence of the arrival of some hinterland Jê groups to the coast?
- **GUARANÍ GROUPS**: exploitation of diverse ecosystems in the highlands and the coast. Settlements near rivers, lagoons and on the top of the palaeodunes. Wide range of adaptive strategies, opportunistic behaviour?

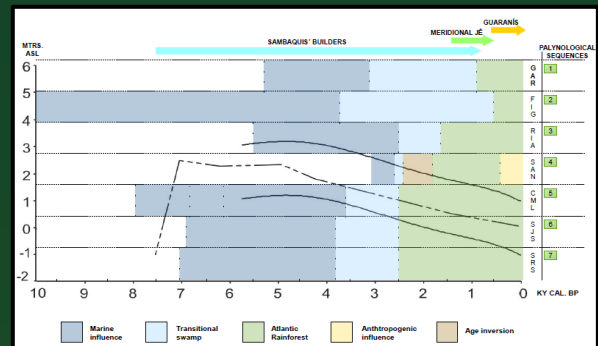


Figure 2: palaeosea-level reconstruction for the Southern State of Sta. Catarina. The interpretation of the seven cores drilled in this State was presented considering the different phases of palaeoenvironmental evolution during the Holocene. Taking into account these factors, human occupation is presented on the top of the graphic: blue arrow for the sambaquis builders, green arrow for the Meridional Jê groups and orange arrow for the Guarani groups.

*ca.* 5100 cal BP

5100 -2500 cal BP

2500 cal BP-present

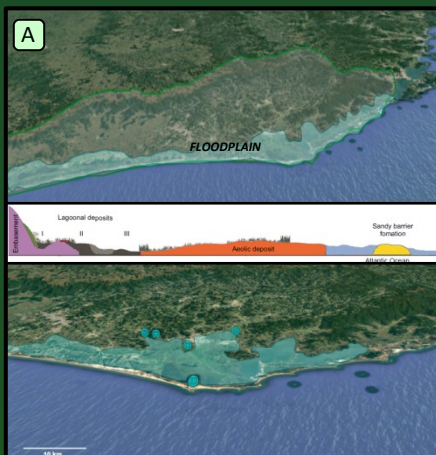


Figure 3A: landscape reconstruction during the marine transgression. The picture on the top shows the terrain flooded by the sea (blue). The topological profile represents the sandy barrier formation, the marine influence, and the scarce vegetation, mainly herbaceous. The picture on the bottom shows the archaeological sites, only sambaquis, during this period.

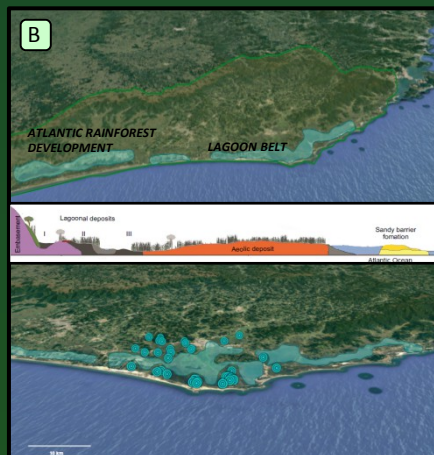


Figure 3B: transitional landscape reconstruction between the marine transgression and the Atlantic Rainforest development. The flooded areas became interconnected palaeolagoons which started a progressive transformation in a swampy area. Atlantic Rainforest started its development from SW to NE, but still did not reach this region. The topological profile represents the lagoon-barrier IV formation and the restinga-like vegetation for this period. Sambaquis builders's occupation increased during this phase.

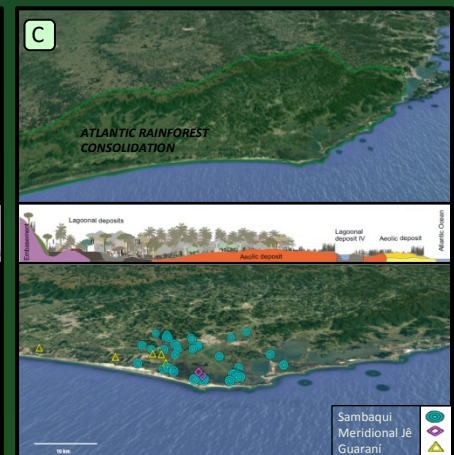


Figure 3C: landscape reconstruction from 2500 cal BP onwards. The Atlantic Rainforest started its development until the present. Lagoonal bodies became smaller and marine influence disappeared. The topological profile shows the consolidation of the lagoon-barrier IV system and the forest colonization. Diverse human groups settled on the region during this period: sambaquis builders until *ca.* 900 BP, Meridional Jê from *ca.* 1500 to *ca.* 900 BP and Guarani groups from *ca.* 700 BP until the European Colonization.

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