

334445 - ABUNDANCE AND OCEANIC SOURCE OF MICROPLASTICS: PELLETS AS A MODEL ON THE MIDDLE COAST OF RIO GRANDE DO SUL, BRAZIL

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INTRODUCTION

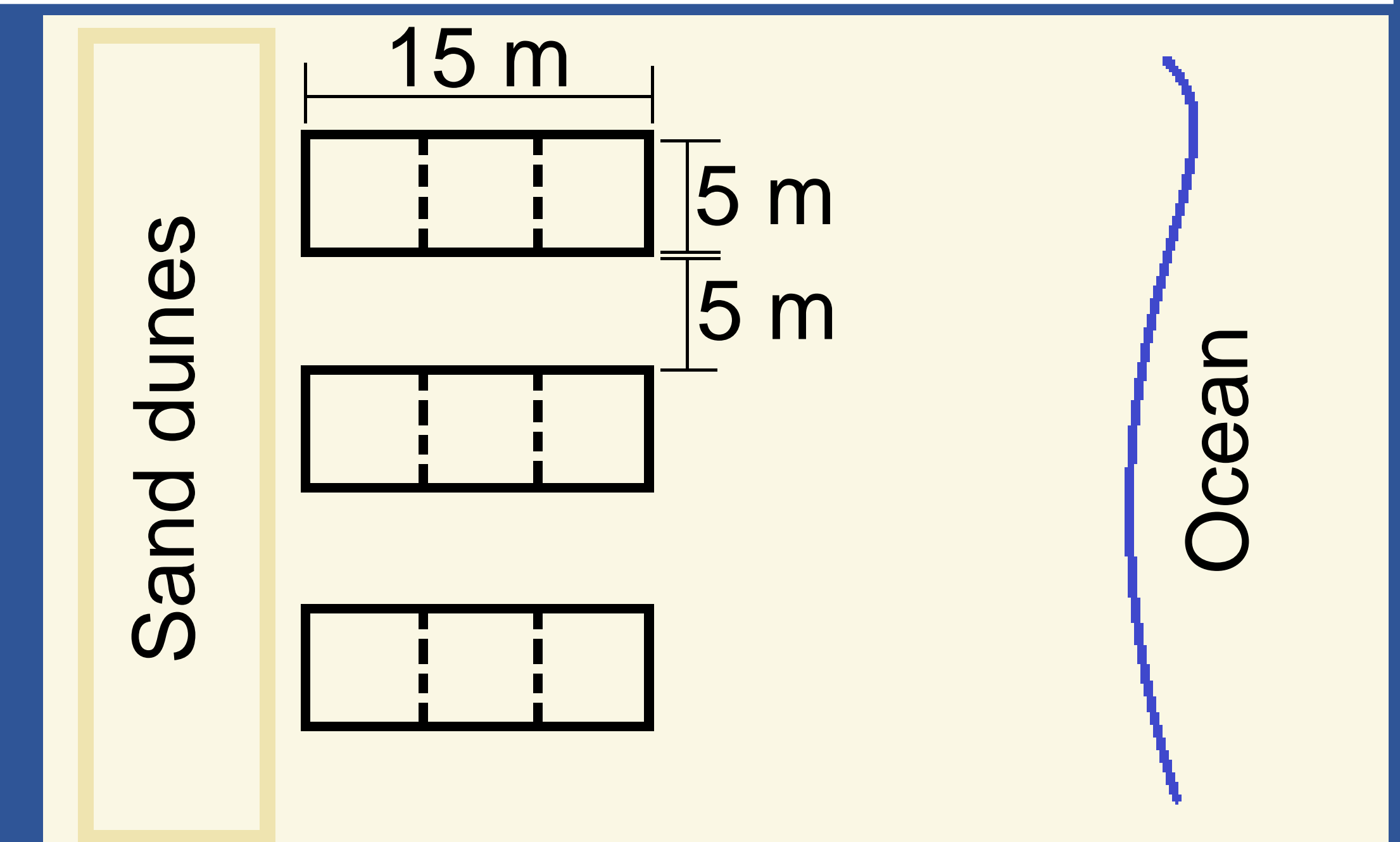
- Coastal regions can be affected by plastic litter, even far from urban centers, as result of sources like wind, waves and tides;
- One of microplastics widely found at marine coastal sand surfaces is pre-production pellets, the raw material which plastic is moulded by industry.

OBJECTIVE

To evaluate oceanic contribution to plastic particle pollution composition at remote coastal areas using pellets as indicators.

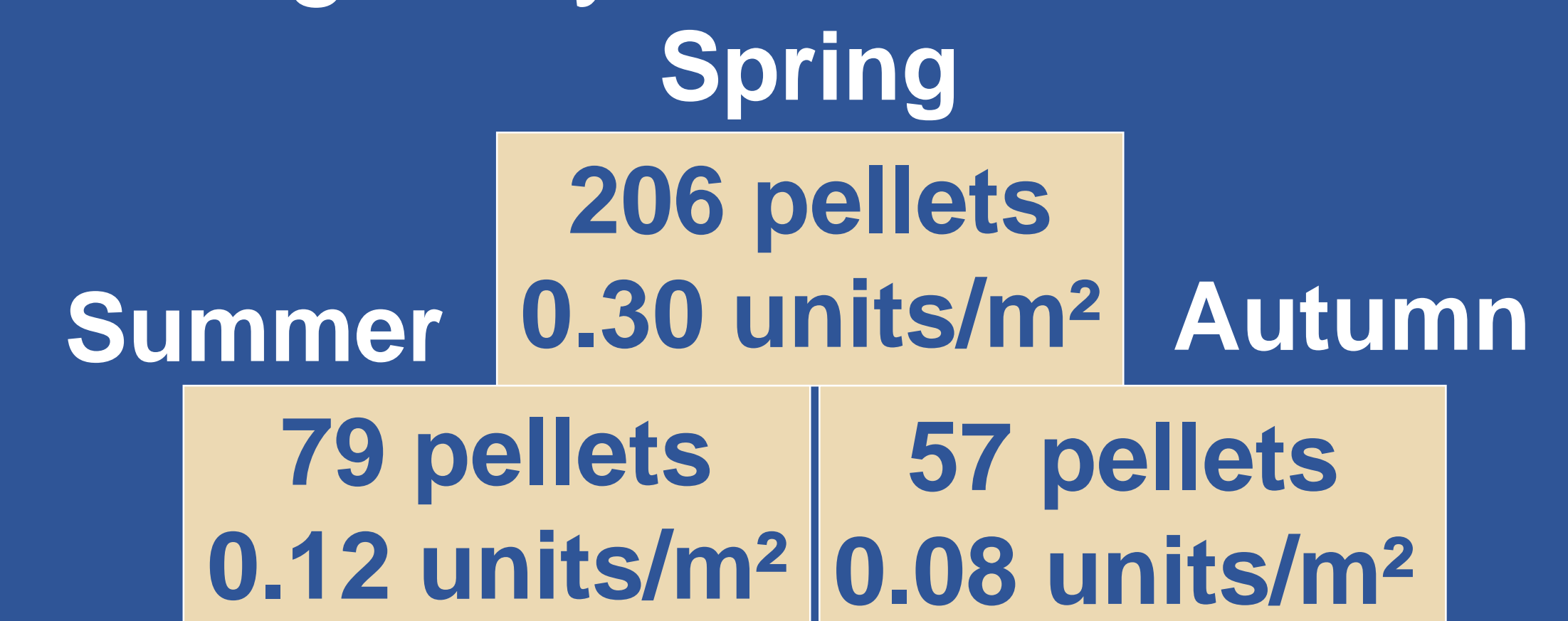
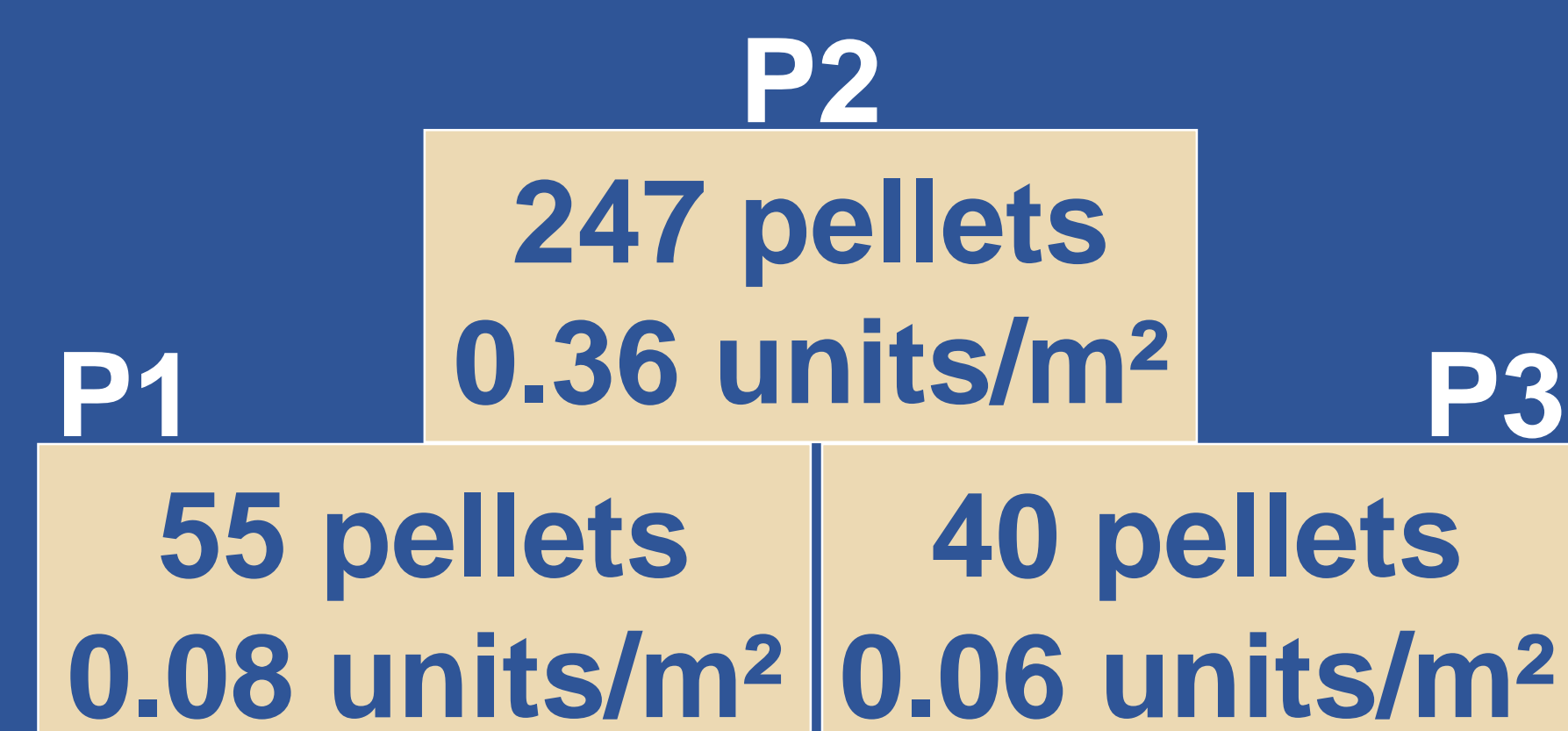
MATERIAL AND METHODS

- Surveys were conducted at the middle litoral of Rio Grande do Sul state, Brazil → very low human density, absence of industrial activities and located far from urban centers;
- Three sampling effort were performed along spring 2019, summer and autumn of 2020;
- Active visual survey was carried out by two collectors in three square plots of 5 m X 15 m distributed in three different points (P1, P2 and P3) over 30 km of coast;
- One-way ANOVA test → to compare pellets abundance both among areas and among seasonal sampling.



RESULTS

- Total of 342 pellets (0.17 pellets/m²) were collected → a small amount unusual for Brazilian coastal areas.
- The amount of pellets varied between the three points (p<0.01).
- Higher amounts of pellets were observed at point 2, followed by point 1 (p=0.02) and point 3 (p<0.01).
- There are no statistical differences between sampled seasons → suggests that pellet deposition seems to be continuous along the year.



- More sampling is necessary to establish which abiotic factors relate to seasonal influence deposition and abundance.

References:

UNEP/IOC. UNEP/IOC Guidelines on Survey and Monitoring of Marine Litter. Nairobi: United Nations Environment Programme/Intergovernmental Oceanographic Commission, 2009, 117 p.
 FERNANDINO, Gerson et al. How many pellets are too many? The pellet pollution index as a tool to assess beach pollution by plastic resin pellets in Salvador, Bahia, Brazil. RGCI, Lisboa, v. 15, n. 3, p. 325-332, 2015.