

Microplastic occurrence in diet of *Larimus breviceps* Cuvier, 1830 in the surf zone of a tropical beach

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INTRODUCTION

Plastics in the marine and estuarine ecosystems are one of the factors that can affect the trophic niche of fish community. This kind of marine litter has been disposed in the coastal areas and can reach to many fish nursery areas, as beach surf zone, mangroves and estuarine main channel. Once in these areas, fragments are mistakable as "prey", ingested by the ichthyofauna and transferred along the chain.

OBJETIVO

Based on this, the aim of this study was to investigate the feed ecology of *Larimus breviceps*, along his history life, at the surf zone of a beach adjacent to an estuary mouth in northeast, Brazil

MATERIALS AND METHODS

This study was conducted in Miramar beach, located at Cabedelo city, North of Paraíba state, Brazil (Figure 1). The beach was divided into two distinct areas (A1 e A2), being A1 more near the estuary of Rio Paraíba and the A2, the area under marine influence.

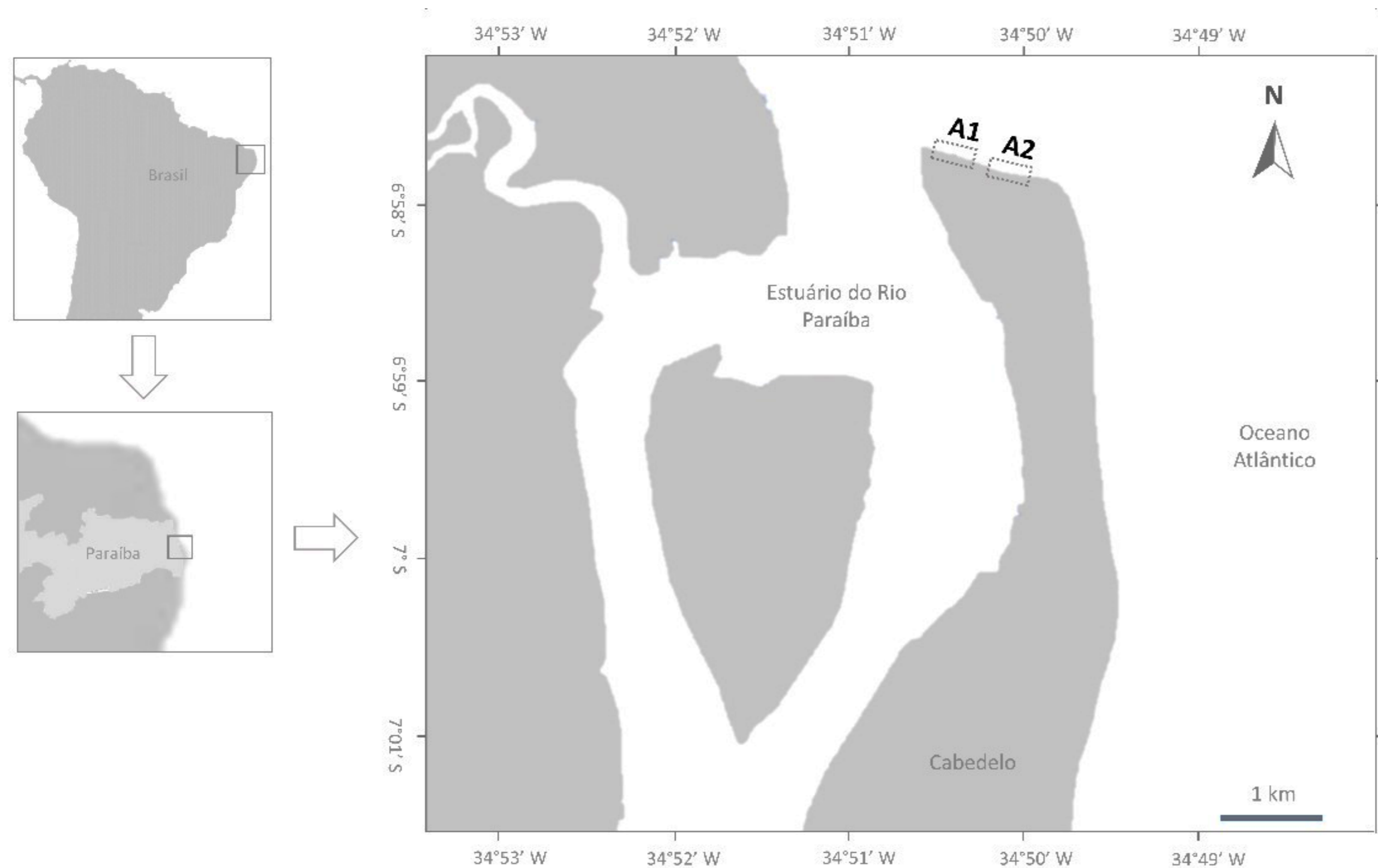


Fig. 1. Location of the studied area (A1S e A2S) in Praia de Miramar, Cabedelo- PB.



Fig. 2. Photography of *Larimus breviceps*

Fishes were sampled by beach seine net (5 mm mesh-size) at the surf zone of Miramar beach, from april 2019 to february 2020. At laboratory, fishes were classed into three size classes, as juvenile (60 mm < TL); subadults (60 < TL < 108mm) and adults (TL > 108 mm). After that, they were dissected and stomachs were analyzed under stereoscopy (40x). Contents were identified as prey items and were counted and weighted (± 0.001). Then, data of each prey was computed as Index of relative importance [IRI% = (N% + W%) * FO%].

RESULTS

A total of 83 specimens were analyzed, identifying 14 different type of preys (Tab 1).

Tab. 1. Individuos of *Larimus breviceps* analyzed.

| Ontogenetic stages | Nº of fishes | Total length (mm) | | |
|------------------------|--------------|-------------------|--------|--------------------|
| | | Min. | Max. | Mean \pm S.D. |
| Juvenile (60 mm) | 24 | 33.74 | 59.70 | 48.13 \pm 8.98 |
| Subadult (60 < 108 mm) | 38 | 60.04 | 105.00 | 81.96 \pm 13.51 |
| Adult (> 108 mm) | 21 | 109.5 | 178.04 | 134.24 \pm 21.50 |

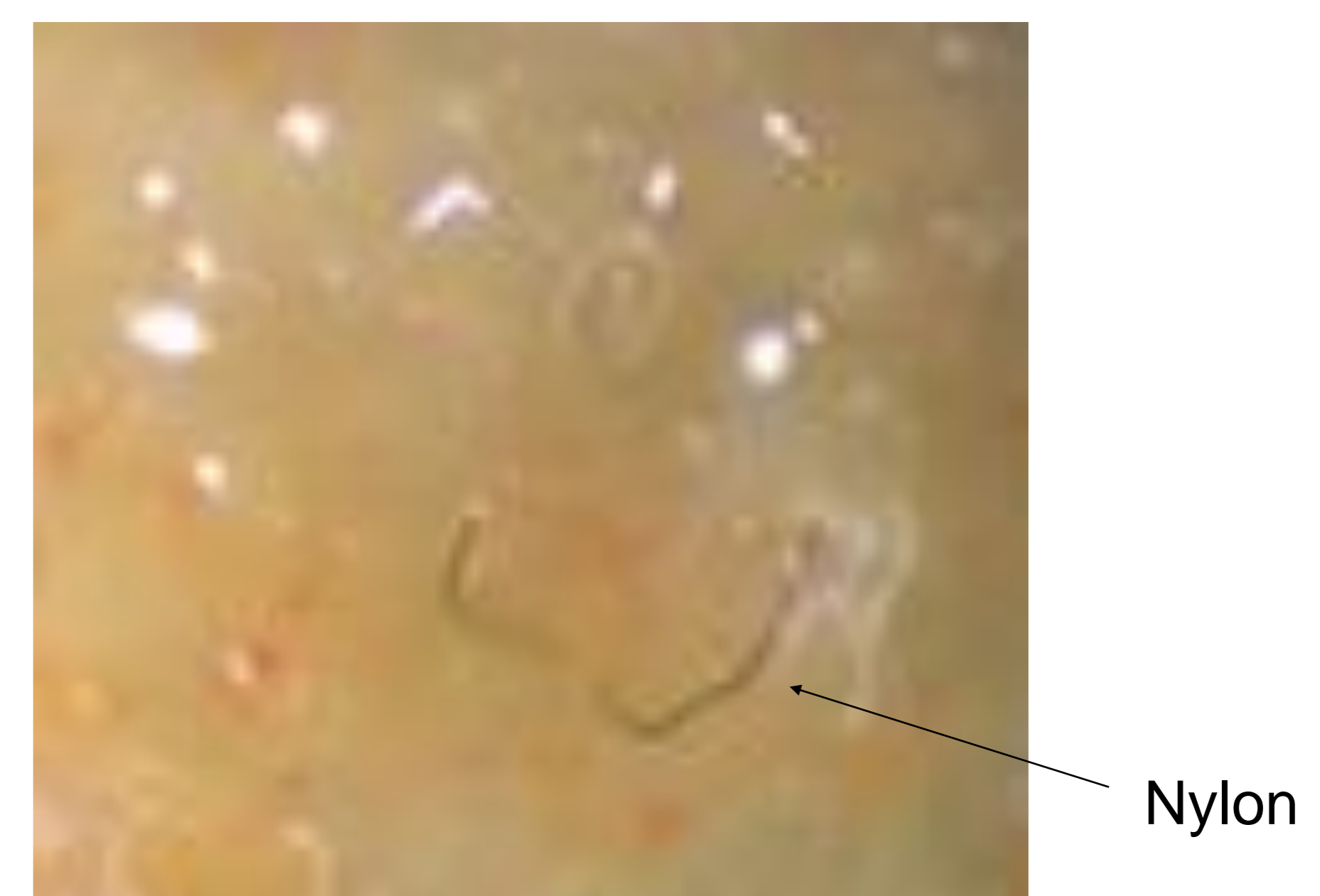


Fig. Nylon fragments found in stomach contents of *L. breviceps*.

Tab. 2. Percent of Index of relative importance (IRI%) by fish stage.

| Item alimentar | Ontogenetic stages | | |
|----------------|--------------------|----------|-------|
| | Juvenile | Subadult | Adult |
| Nylon | 0.14 | 0.47 | 3.12 |

Tab. 3. Occurrence of nylon fragments by feed index for each size-class and beach area.

| Itens (prey) | Fase | Area 1 | | | | Area 2 | | | |
|--------------|------|--------|------|------|------|--------|------|------|------|
| | | Fo% | N% | P% | IRI% | Fo% | N% | P% | IRI% |
| Nylon | JUV | 50.00 | 0.43 | 0.61 | 0.46 | 12.50 | 0.29 | 0.22 | 0.05 |
| | SUB | 46.15 | 0.78 | 0.51 | 0.58 | 28.00 | 1.21 | 0.13 | 0.46 |
| | ADU | 57.14 | 6.20 | 0.09 | 5.04 | 21.43 | 5.77 | 0.02 | 1.67 |

| Item | Size | Early rainy | | | | Late rainy | | | |
|-------|------|-------------|------|------|------|------------|------|------|--------|
| | | Fo% | N% | P% | IRI% | Fo% | N% | P% | IRI% |
| Nylon | JUV | 20.00 | 0.25 | 0.23 | 0.07 | 44.44 | 3.49 | 1.15 | 2.50** |
| | SUB | 14.29 | 1.56 | 0.00 | 0.26 | 41.67 | 1.69 | 0.33 | 0.75 |
| | ADU | 50.00 | 7.98 | 0.09 | 5.66 | 0.00 | 0.00 | 0.01 | 0.00 |

| Item | Size | Early dry | | | | Late dry | | | |
|-------|------|-----------|------|------|------|----------|------|------|------|
| | | Fo% | N% | P% | IRI% | Fo% | N% | P% | IRI% |
| Nylon | JUV | 12.50 | 0.07 | 0.17 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| | SUB | 41.67 | 1.19 | 0.54 | 0.69 | 28.57 | 0.36 | 0.06 | 0.14 |
| | ADU | 0.00 | 0.00 | 0.00 | 0.00 | 75.00 | 5.77 | 0.15 | 6.02 |

Acknowledge