

# MICROFIBERS AT THE NEGRO RIVER, PATAGONIA ARGENTINA

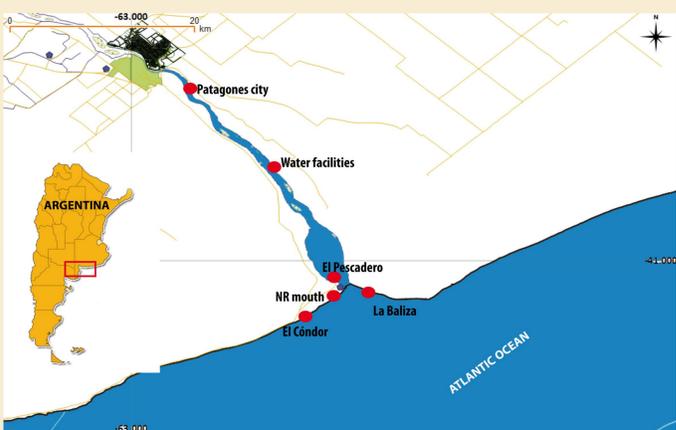
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**INTRODUCTION:** Riverine inputs to the ocean has been pointed as a major source of plastics to the ocean; beside this, information on river plastic loads is scarce and patchily distributed around the world. In this work, we aimed to assess the average amount of microfibers (MFs) transported in the Negro River (NR, Argentinean Patagonia) water which reaches its estuary and the Atlantic coast along cold (July) and warm (December) seasons.



Study area and sampling sites.

**METHODOLOGY:** surface water was collected at six locations along the Negro River estuary (El Cóndor, El Pescadero, La Baliza, NR mouth, Water Facilities, Patagones City) using a 350 µm pore floating net fitted with a mechanical flowmeter. The samples were subsequently digested with 30% H<sub>2</sub>O<sub>2</sub> at 40 °C for 72 h, filtered with GF/F filters and finally counted under binocular stereoscopic loupe.



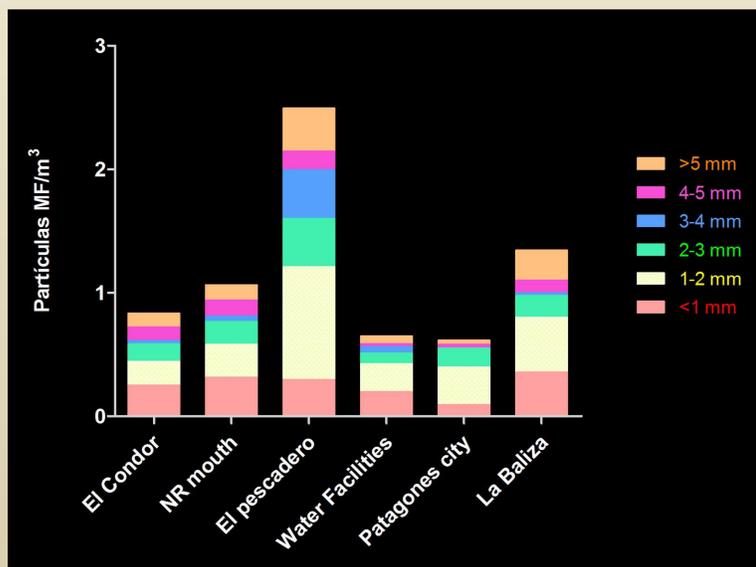
## RESULTS & DISCUSSION

While lower counts were found in winter ( $0.42 \pm 0.21$  MFs.m<sup>-3</sup>), concentrations in summer almost doubled the winter values ( $0.79 \pm 0.72$  MFs. m<sup>-3</sup>) probably due to the higher outdoor activities along the river. In regards to microfiber size distribution and colour, there was a homogeneous pattern along the year which showed higher counts in the medium and small MFs range (> 1 µm up to 3 mm).

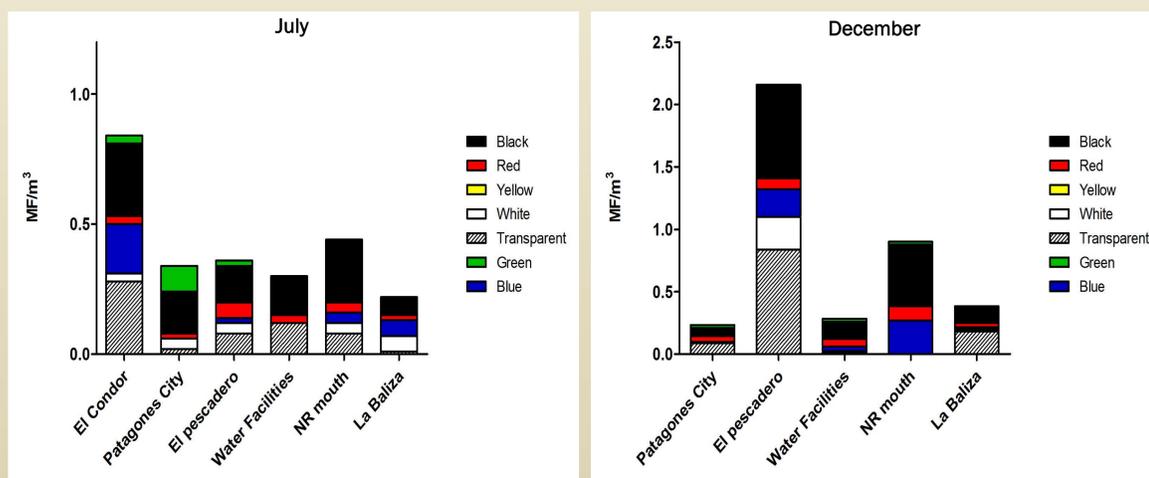
The results obtained showed that MF particles were found in 100% of the samples with a global average of 0.65 MFs.m<sup>-3</sup>.



Examples of MFs found in surface water.



Microfibers in surface water (MF/m<sup>3</sup>) categorized by length.



Microfibers in surface water (MF/m<sup>3</sup>) categorized by site and colour.

The average colour distribution was black (41%) > transparent (20%) > blue (12%) > white (11%) > red (9%) > green (7%).

**CONCLUSIONS:** This work provides evidence of the impact of plastic in riverine waters reaching the Atlantic Ocean, providing a scientific baseline and raising a concern in regard to the need to mitigate each possible source of MFs to the water course.