

Supplementary Information

Microplastics in Latin America Ecosystems: A Critical Review of the Current Stage and Research Needs

*Andreia N. Fernandes,  *,^a Crislaine Bertoldi,^a Larissa Z. Lara,^a Jéssica Stival,^b Nortom M. Alves,^a Pedro M. Cabrera^a and Marco T. Grassi  ^b*

^a*Instituto de Química, Universidade Federal do Rio Grande do Sul (UFRGS), Av. Bento Gonçalves, 9500, 91501-970 Porto Alegre-RS, Brazil*

^b*Departamento de Química, Universidade Federal do Paraná (UFPR), 81531-980 Curitiba-PR, Brazil*

*e-mail: andreia.fernandes@ufrgs.br

Table S1. Abundance of microplastics in water compartments across Latin America (n = 41 studies)

| Location | Compartment | Sampling method | Microplastic abundance | Physical characterization | Chemical characterization | Reference |
|--|--------------------------|--|---|-----------------------------------|---------------------------|-----------|
| Continental shelf and marine protected area, Argentina | marine surface water | manta trawl net (350 µm) | 0.14 ± 0.08 items m ⁻³ | stereomicroscope with a polarizer | na | 1 |
| Patagonia, Argentina | marine bottom water | niskin bottle | 10,500 items m ⁻³ | microscope (50×), SEM-EDS | na | 2 |
| Río de la Plata, Argentina | estuary subsurface | plankton net (36 µm) | 5-110 items m ⁻³ | stereomicroscope | FTIR-ATR | 3 |
| Southwestern Atlantic Estuary, Argentina | estuary water column | nansen net (60 µm) | ni | stereomicroscope | na | 4 |
| Rio de la Plata, Argentina | estuary subsurface water | plankton net (36 µm) | 139 items m ⁻³ | stereomicroscope (5.6×) | na | 5 |
| Bahía Blanca, Argentina | estuary water column | van dorn bottle and plankton net (60 µm) | 5,900 to 782,000 item m ⁻³ (bottle)-42.6 to 113.6 item m ⁻³ (net) | stereomicroscope | na | 6 |
| Langueyú stream, Argentina | freshwater surface | bucket | 23.6 × 10 ⁶ items m ⁻³ | optical microscope | Raman | 7 |
| Bahía Blanca, Argentina | estuary surface water | bottle | 3000-11500 items m ⁻³ | stereomicroscope, SEM-EDX, XRD | FTIR | 8 |
| La Salada Lake, Argentina | freshwater surface | bucket | 40-143.3 items m ⁻³ | stereomicroscope | na | 9 |

Table S1. Abundance of microplastics in water compartments across Latin America (cont.)

| Location | Compartment | Sampling method | Microplastic abundance | Physical characterization | Chemical characterization | Reference |
|---|-------------------------------------|-------------------------------|---|------------------------------|---------------------------|-----------|
| Patagonia, Argentina | freshwater surface | net (38 µm) | 0.9 ± 0.6 items m ⁻³ | stereomicroscope | Raman | 10 |
| Equatorial Atlantic, Brazil | marine subsurface water | plankton net (300 µm) | 0.01 items m ⁻³ | stereomicroscope (5×) | na | 11 |
| Western Tropical Atlantic Ocean, Brazil | marine surface water | plankton net (300 µm) | 0.03 items m ⁻³ | stereomicroscope (5×) | na | 12 |
| Guanabara Bay, Brazil | marine surface water | plankton net (150 µm) | 16.4 items m ⁻³ | microscope (56×) | na | 13 |
| Guanabara Bay, Brazil | marine surface and subsurface water | plankton net (64 and 200 µm) | 0.6-11 items m ⁻³ | stereomicroscope | FTIR | 14 |
| Guanabara Bay, Brazil | marine surface water | plankton net (64 and 300 µm) | 0.6-11 items m ⁻³ | stereomicroscope | FTIR-ATR | 15 |
| Western equatorial Atlantic, Brazil | marine subsurface water | plankton net (120 and 300 µm) | 0.02 ± 0.01-0.14 ± 0.11 items m ⁻³ | stereomicroscope | na | 16 |
| Guanabara Bay, Brazil | marine surface water | plankton net (120 µm) | 1.01-56.33 items m ⁻³ | stereomicroscope, SEM-EDS | FTIR-ATR | 17 |
| Bahía Blanca Estuary, Argentina | estuary surface | nansen net (60 µm) | 1820-33,373 items m ⁻³ | stereomicroscope | FTIR | 18 |
| Porto Alegre, Brazil | freshwater surface | zooplankton net (60 µm) | 11.9-61.2 items m ⁻³ | stereomicroscope (5 and 10×) | µFTIR and Raman | 19 |

Table S1. Abundance of microplastics in water compartments across Latin America (cont.)

| Location | Compartment | Sampling method | Microplastic abundance | Physical characterization | Chemical characterization | Reference |
|--|---------------------------------------|-------------------------|---|--------------------------------|---------------------------|-----------|
| Sinos River, Southern Brazil | freshwater surface and drinking water | bottle | 330,000 items m ⁻³ (freshwater); 105,800 items m ⁻³ (drinking water) | fluorescence microscopy | na | 20 |
| Pernambuco State, Brazil | estuary and marine surface | plankton net (300 µm) | ni | Zooscan device | FTIR | 21 |
| Brazilian coast, Brazil | marine surface | manta trawl (330 µm) | ni | visual | FTIR | 22 |
| Acaraí Lagoon, Brazil | freshwater | plankton net (300 µm) | 0.014-0.034 items m ⁻³ | stereomicroscope | na | 23 |
| Martínez-Baker channels, Chile | estuary surface water | tucker trawl (300 µm) | 1-7 items m ⁻³ (0.67 to 4×) | stereomicroscope | FTIR-ATR | 24 |
| South Pacific, Chile | marine surface water | manta trawl (333 µm) | 26,898 pieces km ⁻² | microscope | na | 25 |
| Easter Island, Chile | marine surface water | epineuston net (300 µm) | 0.06 ± 0.008 items m ⁻³ | microscope binocular | FTIR-ATR; µFTIR | 26 |
| Albuquerque atoll, Caribbean Sea, Colombia | marine surface water | plankton net (80 µm) | 0.009 and 0.244 items m ⁻³ | stereomicroscope | na | 27 |
| Magdalena River, Colombia | freshwater surface | neuston net (20 µm) | 97-135 items m ⁻³ | optical microscopy (100×), SEM | na | 28 |

Table S1. Abundance of microplastics in water compartments across Latin America (cont.)

| Location | Compartment | Sampling method | Microplastic abundance | Physical characterization | Chemical characterization | Reference |
|---|---------------------|-------------------------------|------------------------------------|---------------------------|---------------------------|-----------|
| Caribbean Sea and Pacific Ocean, Colombia | marine surface | plankton net (500 µm) | 0.01-8.96 items m ⁻³ | stereomicroscope | FTIR | 29 |
| Atrato River, Colombia | freshwater surface | mini bongo net (300 µm) | 0.91 items m ⁻³ | microscope | na | 30 |
| Eastern tropical Pacific Ocean, Costa Rica | marine water column | plankton net (200 µm) | ni | microscope (60×) | na | 31 |
| Guayllabamba River Basin, Ecuador | freshwater | drift net | 0.73-1584.23 items m ⁻³ | microscope | na | 32 |
| Isla Santay, Ecuador | estuary | bottle | 26,000 items m ⁻³ | stereomicroscope | na | 33 |
| Tropical Eastern Pacific and Galápagos archipelago, Ecuador | marine surface | plankton net (300 and 500 µm) | ni | microscope | na | 34 |
| Kingston Harbour's mangrove, Jamaica | marine surface | manta trawl (355 µm) | 0.76 items m ⁻³ | stereomicroscope | FTIR | 35 |
| Rio Lagartos coastal lagoon, Mexico | estuary surface | net tow (200 µm) | 0.14-1.51 items m ⁻³ | stereomicroscope | na | 36 |
| Tecolutla Estuary, Mexico | estuary column | bottle | 151,000 items m ⁻³ | microscope, SEM, EDX | FTIR | 37 |

Table S1. Abundance of microplastics in water compartments across Latin America (cont.)

| Location | Compartment | Sampling method | Microplastic abundance | Physical characterization | Chemical characterization | Reference |
|-------------------------------|-------------------------------|-----------------------------|---|------------------------------|---------------------------|-----------|
| La Paz Bay, Mexico | marine surface | manta trawl | 0.0-0.14 items m ⁻³ | stereomicroscope | FTIR | 38 |
| Veracruz-Boca del Río, Mexico | freshwater and marine surface | ni | ni | microscope | na | 39 |
| Todos Santos Bay, Mexico | marine surface water | manta trawl (333 µm) | 0.01-0.70 items m ⁻³ | trinoocular stereoscopy (5×) | FTIR-ATR | 40 |
| Banderas Bay, Mexico | marine surface water | zooplankton net (333 µm) | 0.013 ± 0.028 items m ⁻³ (dry season)-0.044 ± 0.064 items m ⁻³ (hurricane season) | microscope (8-30×) | µFTIR-ATR | 41 |

ni: not informed; na: not available; SEM-EDS: scanning electron microscopy with energy dispersive spectroscopy; FTIR-ATR: Fourier-transform infrared with attenuated total reflection; SEM-EDX: scanning electron microscopy with energy dispersive X-ray; XDR: extended detection and response; µFTIR: Fourier-transform infrared with microscope with attenuated total reflection; FTIR: Fourier-transform infrared.

Table S2. Abundance of microplastics in sediments/soils across Latin America (n = 68 studies)

| Location | Compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|---|-------------|------------------------------------|---------------------------|---------------------------|---------------------|-----------|
| Setúbal Lake, Argentina | terrestrial | 704 items m ⁻² | stereomicroscope | FTIR | fragment | 42 |
| Paraná River, Argentina | terrestrial | 4,654 items m ⁻² | stereomicroscope | FTIR | film and fiber | 43 |
| Argentina coastline | marine | 182.85 items kg ⁻¹ | stereomicroscope | na | fiber | 1 |
| Paraná River, Argentina | beach | 2,864-88,224 items m ⁻² | stereomicroscope | FTIR | fiber | 44 |
| Pampean and North Patagonian, Argentina | estuary | 0-1,030 items kg ⁻¹ | stereomicroscope | FTIR | fragment | 45 |
| Rio de la Plata, Argentina | estuary | 23-263 items m ⁻² | stereomicroscope | FTIR | fiber | 3 |
| Río de la Plata, Argentina | estuary | ni | microscope | na | fragment | 46 |
| Aruba coastline | beach | ni | visual | na | pellet | 47 |
| Grussáí Beach, Brazil | beach | 400 items kg ⁻¹ | stereomicroscope | na | fiber | 48 |
| Boa Viagem Beach, Brazil | beach | 0,000029 items m ⁻² | stereomicroscope | na | fragment | 49 |
| São Paulo State beaches, Brazil | beach | 5.90-530 items m ⁻³ | visual | Raman | pellet | 50 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|--|-------------|---|---------------------------|---------------------------|---------------------|-----------|
| Guanabara bay, Brazil | beach | 3-1,300 items m ⁻² | stereomicroscope | na | fragment | 51 |
| Boa Viagem Beach, Brazil | beach | 642.6 items m ⁻² (protected area) and 130.6 items m ⁻² (exposed area) | stereomicroscope | na | fragment | 52 |
| Guanabara bay, Brazil | marine | 160-1,000 items kg ⁻¹ or 4,367-25,794 items m ⁻² | stereomicroscope | FTIR | fiber | 53 |
| Vitória Bay, Brazil | marine | 0-126.6 items kg ⁻¹ | stereomicroscope and SEM | na | fiber | 54 |
| Rio de Janeiro continental shelf, Brazil | marine | 100 items kg ⁻¹ | stereomicroscope | na | fiber | 55 |
| Corvina beach Brazil | beach | 492.5 items m ⁻³ | stereomicroscope | na | fiber | 56 |
| Fernando de Noronha beaches, Brazil | beach | 33.3-266.6 items m ⁻² | stereomicroscope | na | fiber | 57 |
| Amazon rivers, Brazil | freshwater | 417-8,178 items kg ⁻¹ | stereomicroscope | na | fiber | 58 |
| Poá city centre, Brazil | terrestrial | 57,542 items kg ⁻¹ | microscope | FTIR | fragment | 59 |
| Ponta do Sul, Brazil | marine | ni | visual | na | pellet | 60 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | Compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|---------------------------------------|------------------|---|---------------------------|---------------------------|------------------------------------|-----------|
| Mansa Beach, Brazil | marine | ni | visual | na | pellet | 61 |
| Jurujuba and Itaipu Embayment, Brazil | beach and marine | 166.50 items kg ⁻¹ beach and 20.74 items kg ⁻¹ marine sediment | stereomicroscope and SEM | FTIR | beach (fragment) marine (fiber) | 17 |
| Fernando de Noronha beaches, Brazil | beach | ni | visual | na | pellets | 62 |
| São Paulo state coast, Brazil | beach | ni | visual | na | pellets | 63 |
| São Paulo state coast, Brazil | beach | ni | visual | na | pellet | 64 |
| São Paulo state coast, Brazil | beach | ni | visual | na | pellet | 65 |
| Santos Bay, Brazil | beach | ni | visual | na | pellets | 66 |
| Brazilian coast | beach | 2.4-30.4 items m ⁻² | stereomicroscope | FTIR | fragment | 67 |
| Fernando de Noronha, Brazil | beach | 0.6-1,059.3 items m ⁻² | stereomicroscope | na | fragment | 68 |
| Água Branca Basin, Brazil | freshwater | ni | stereomicroscope | na | ni | 69 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | Compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|---|-------------|--|---------------------------|---------------------------|---------------------|-----------|
| Tecolutla estuary, Brazil | estuary | 121 items kg ⁻¹ | microscope, SEM and EDX | FTIR | fiber | 37 |
| Trindade Island, Brazil | beach | ni | visual | FTIR | pellet | 70 |
| Northeast Brazil | beach | ni | visual | FTIR | ni | 71 |
| Salvador beaches, Brazil | beach | 23.26 items m ⁻² | ni | na | pellet | 72 |
| Lenga Beach, Chile | marine | ni | visual | FTIR-ATR | pellets | 73 |
| Chile's Región Metropolitana, Chile | terrestrial | 306 items kg ⁻¹ (croplands) and 184 items kg ⁻¹ (pastures) | visual | FTIR | fiber | 74 |
| Mellipilla county, Chile | terrestrial | 1,000-3,500 items kg ⁻¹ | stereomicroscope | na | fiber | 75 |
| Continental coast, Chile | beach | 27 items m ⁻² | microscope | na | fragment | 76 |
| Ciénaga Grande de Santa Marta, Colombia | freshwater | 31-2,863 items kg ⁻¹ | stereomicroscope | FTIR | film | 77 |
| Santa Marta beaches, Colombia | beach | 32-103 items m ⁻² | stereomicroscope | FTIR | fragment | 78 |
| Colombian beaches | beach | 3-1387 items m ⁻² | stereomicroscope | FTIR | fragment | 79 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | Compartment | Microp plastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|----------------------------|----------------------|-----------------------------------|---------------------------|---------------------------|---------------------|-----------|
| Magdalena Colombia | River, freshwater | 10.4-102.4 items kg ⁻¹ | microscope and SEM | Raman | fiber | 28 |
| South Cay, Colombia | beach | 99-141 items m ⁻² | stereomicroscope | na | fragment | 27 |
| Caribbean Colombia | Coast, beach | ni | SEM | FTIR | pellet | 80 |
| Colombian beaches | beach | ni | stereomicroscope | FTIR | pellet | 81 |
| Cartagena, Colombia | beach | ni | stereomicroscope | FTIR | pellet | 82 |
| Guayllabamba Ecuador | river, freshwater | 14.0-186.5 items kg ⁻¹ | microscope | na | fiber | 32 |
| Isla Santay, Ecuador | beach | 660 items kg ⁻¹ | stereomicroscope | FTIR | fragment | 33 |
| El Quetzalito, Guatemala | beach | 279 items m ⁻² | stethoscope | FTIR | foam | 83 |
| Beaches of Lesser Antilles | beach | 261 items kg ⁻¹ | stereomicroscope | na | fiber | 84 |
| Campeche, Mexico | marine | 104-1,004 items m ⁻² | visual | na | fragment | 85 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | Compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|--------------------------------------|-------------|------------------------------------|----------------------------------|---------------------------|---------------------|-----------|
| Todos Santos bay, Mexico | marine | 850-24,940 items kg ⁻¹ | stereomicroscope | FTIR | fragment and fiber | 40 |
| Baja California Peninsula, Mexico | beach | 135 items kg ⁻¹ | visual | FTIR | fiber | 86 |
| Mexican beaches | shoreline | 31.7-545.8 items m ⁻² | visual | FTIR | fragment | 87 |
| Atoyac River basin, Mexico | freshwater | 4,500 items kg ⁻¹ | stereomicroscope, MEV and EDX | na | film | 88 |
| San Juan Cotzocan, Mexico | terrestrial | 1,490-1,530 items kg ⁻¹ | stereomicroscope | na | fiber | 89 |
| Campeche, Mexico | terrestrial | 870 items kg ⁻¹ | stereomicroscope | na | fragment | 90 |
| Huatulco Bay, Mexico | beach | ni | SEM | FTIR | fiber | 91 |
| Rio Lagartos Lagoon, Mexico | freshwater | 0-328.1 items kg ⁻¹ | stereomicroscope | na | fiber | 36 |
| Veracruz-Boca del Río, Mexico | beach | ni | visual | na | ni | 39 |
| Mexican coast | Beach | 31.7-545.8 items m ⁻² | visual | FTIR | fragment | 92 |

Table S2. Abundance of microplastics in sediments/soils across Latin America (cont.)

| Location | Compartment | Microplastic abundance | Physical characterization | Chemical characterization | Most abundant shape | Reference |
|--|-------------|-----------------------------------|---------------------------|---------------------------|---------------------|-----------|
| Panama coast | beach | 28-420 items m ⁻² | visual | FTIR | fragment | 93 |
| Lima coast beaches, Peru | beach | 16.67-489.7 items m ⁻² | stereomicroscope | FTIR | foam | 94 |
| Porto Rico coast | beach | 3-17 items kg ⁻¹ | microscope | FTIR | fiber | 95 |
| Barra del Chuy and La Coronilla beaches, Uruguay | beach | ni | microscope | FTIR | fiber | 96 |
| Punta del este beaches, Uruguay | beach | 25 items m ⁻² | Raman microscope | Raman | fragment | 97 |
| Uruguay | beach | 0.6-170.8 items m ⁻² | visual | FTIR | pellet | 98 |

ni: not informed; na: not available; SEM-EDS: scanning electron microscopy with energy dispersive spectroscopy; FTIR-ATR: Fourier-transform infrared with attenuated total reflection; SEM-EDX: scanning electron microscopy with energy dispersive X-ray; XDR: extended detection and response; μFTIR: Fourier-transform infrared with microscope with attenuated total reflection.

Table S3. Abundance of microplastics in the biota across Latin America (n = 75 studies)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|--|-------------|-----------------|---|---|------------------------|-----------|
| Bahía Blanca Estuary, Argentina | estuary | crab | gastrointestinal tract and gills | ni | 100 | 4 |
| Bahía Blanca Estuary, Argentina | estuary | fish | gastrointestinal tract | 12.1 items ind ⁻¹ | 100 | 99 |
| Bahía Blanca Estuary, Argentina | estuary | bivalve | entire body | 4.2, 2, and 0.5 items ind ⁻¹ | 100 | 6 |
| Argentinean coastline of the RLP estuary | estuary | fish | gastrointestinal tract | 18.5 items ind ⁻¹ | 100 | 100 |
| Paraná River, Argentina | freshwater | fish | gastrointestinal tract | 9.9 items ind ⁻¹ | 100 | 43 |
| Puerto Madryn, Argentina | marine | mussel and fish | entire body, gastrointestinal tract | 1.6 items g ⁻¹ (fish) and 0.3 items g ⁻¹ (mussel) | 38.5 for fish | 2 |
| Río de la Plata estuary, La Plata, Argentina | estuary | mussel | entire body | 2.08 items g ⁻¹ | 96 | 101 |
| Bahía Blanca Estuary, Argentina | estuary | shrimp | abdominal muscle and gastrointestinal tract | 1.31 items g ⁻¹ | 90 | 102 |
| Ushuaia Bay, Argentina | marine | mussel | soft tissue | 8.6 items ind ⁻¹ | 100 | 103 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|--|-------------|--------|------------------------|---|------------------------|-----------|
| Northwest Patagonia, Argentina | terrestrial | bird | regurgitated pellets | ni | 1.1, 17.3, and 24.5 | 104 |
| Paraíba do Sul River, Brazil | freshwater | fish | gastrointestinal tract | ni | 3 | 105 |
| Coast of Rio Grande do Sul, Brazil | marine | turtle | stomach | ni | 88 | 106 |
| Camburi Beach, Brazil | marine | coral | tubes and tissue | ni | Ni | 107 |
| Tietê River, Brazil | freshwater | fish | gastrointestinal tract | 3.26±1.75 and 9.37 ± 8.19 items ind ⁻¹ | 72 | 108 |
| St. Peter and St. Paul's Archipelago, Brazil | marine | fish | stomach | ni | 39 | 109 |
| Cananéia-Iguape, Brazil | estuary | crab | stomach | ni | 2 | 110 |
| Santo Antônio dos Anjos, Brazil | estuary | fish | stomach | ni | 26.9 and 9.0 | 111 |
| Guarapari Islands, Brazil | marine | fish | gastrointestinal tract | 1.67±1.23 items ind ⁻¹ | 12 | 112 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|--|-------------|----------|------------------------|--------------------------------|------------------------|-----------|
| Paranaguá Estuarine System, Brazil | | estuary | oyster | entire body | ni | 100 | 113 |
| Goiana Estuary, Brazil | | estuary | fish | gastrointestinal tract | ni | 58 | 114 |
| Vale do Itajaí, Brazil | | marine | seabird | gastrointestinal tract | ni | 45. | 115 |
| Salvador, Brazil | | marine | fish | stomach | 2 to 6 items ind ⁻¹ | 22 | 116 |
| Espírito Santo, São Paulo and Alagoas, Brazil | | marine | turtle | gastrointestinal tract | ni | Ni | 117 |
| Sorocaba River, Brazil | | freshwater | fish | stomach | ni | 1.8 | 118 |
| Balneário Pinhal and Mostardas, Brazil | | marine | seabird | gastrointestinal tract | ni | 11.4 to 16.9 | 119 |
| Amazonian coast, Brazil | | marine | stingray | stomach | 2.4 items ind ⁻¹ | 30.4 | 120 |
| Ivaí River basin, Brazil | | freshwater | fish | stomach | ni | 21.4 | 16 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|-------------|---------|----------------------------------|-----------------------------------|------------------------|-----------|
| Guamá river and Acará-Capim basin, Pará, Brazil | freshwater | fish | gastrointestinal tract and gills | ni | 98 | 121 |
| Goiana Estuary, Brazil | estuary | fish | stomach | ni | 14.4 36.36 | 122 |
| Southeast Brazilian coast | marine | fish | gastrointestinal tract | 0.06-1.65 items ind ⁻¹ | 13.9 | 123 |
| Extreme southern coast of Brazil | marine | turtle | gastrointestinal tract | ni | 12.8 | 124 |
| Pará, Brazil | marine | anemone | entire body | 1.6 items ind ⁻¹ | 75.6 | 125 |
| Xingu River, Brazil | freshwater | fish | stomach | ni | 80 | 126 |
| Balneário Pinhal, Brazil | terrestrial | seabird | stomach | 294.3 mg ind ⁻¹ | 71 | 127 |
| Goiana Estuary, Brazil | estuary | fish | gastrointestinal tract | 1.4 a 6.5 items ind ⁻¹ | 50 | 128 |
| Costinha and Miramar beaches, Paraíba, Brazil | marine | fish | gastrointestinal tract | 1.3 items ind ⁻¹ | 9.48 | 129 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|--|-------------|---------|------------------------|-----------------------------------|------------------------|-----------|
| Ponta Verde beach, Maceio, Alagoas, Brazil | marine | crab | gastrointestinal tract | ni | 47.4 | 130 |
| Meireles beach, Fortaleza, Ceará, Brazil | marine | fish | stomach | 0-14 items ind ⁻¹ | 55 | 131 |
| Amazon river, Brazil | freshwater | fish | gastrointestinal tract | 8.76 items ind ⁻¹ | 30 | 132 |
| Goiana Estuary, Brazil | estuary | fish | gastrointestinal tract | 0-63 items ind ⁻¹ | 51 | 133 |
| Grussáí Beach Arch, Brazil | marine | crab | gut | 1-158 items ind ⁻¹ | 30-54 | 48 |
| Guanabara Bay, Rio de Janeiro, Brazil | marine | mussel | entire body | 16.6-31.2 items ind ⁻¹ | 100 | 134 |
| Goiana Estuary, Brazil | estuary | fish | gut | 0.01-0.11 mg ind ⁻¹ | 13.4 | 135 |
| Santos Estuary, São Paulo, Brazil | estuary | mussel | entire body | ni | 75 | 136 |
| Estaleiro and Estaleirinho Beach, Santa Catarina, Brazil | marine | annelid | gut | ni | — | 137 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|-------------|----------|------------------------|------------------------------------|------------------------|-----------|
| Pajeú River, Brazil | freshwater | fish | gut | 1 a 24 items ind ⁻¹ | 83 | 138 |
| Paraiba and Mamanguape Estuaries, Brazil | freshwater | fish | stomach | 1.06 items ind ⁻¹ | 9 | 139 |
| Peixe Lagoon, Rio Grande do Sul, Brazil | marine | turtle | gastrointestinal tract | ni | 4 25 | 140 |
| Coast of the state of Rio Grande do Sul, Brazil | marine | seabirds | gastrointestinal tract | ni | 28 | 141 |
| Goiana Estuary, Brazil | estuary | fish | stomach | ni | 18 33 18 | 142 |
| Goiana Estuary, Brazil | estuary | fish | stomach | 0.03 mg | 7.9 | 143 |
| Guafo Island, Northern Chilean Patagonia | marine | seal | feces | 2.7-13.35 items g ⁻¹ | 67 | 144 |
| Coast of Rapa Nui, Chile | marine | fish | gut | 2.5 items ind ⁻¹ | 80 | 26 |
| Santiago, Chile | marine | fish | gastrointestinal tract | 10-61 items ind ⁻¹ | ni | 145 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|---------------------|----------|---------------------------------|--|-------------------------------|-----------|
| Southeast Pacific Ocean, Chile | marine | fish | gastrointestinal tract | 0.03-0.1 items ind ⁻¹ | 2.21 | 146 |
| Coastline of Peru and Chile | marine | otariids | feces | 0.04-3.7 items g ⁻¹ | 1-100 | 147 |
| Biobío River, Chile | freshwater | fish | gastrointestinal tract | ni | 33.3 | 148 |
| Rapa Nui Coast, Chile | marine | fish | gastrointestinal tract, stomach | 1.5 items ind ⁻¹ | 16 | 149 |
| Huila, Colombia | freshwater and farm | fish | stomach, gill, and flesh | 2.1 ± 1.26 items ind ⁻¹ | 44 (farm) and 75 (freshwater) | 150 |
| Córdoba, Colombian Caribbean | marine | fish | gastrointestinal tract | 3.45 items ind ⁻¹ | 7 | 151 |
| Magdalena River, Colombia | freshwater | fish | gastrointestinal tract | ni | 12.1 | 152 |
| Province of Puntarenas, Central Pacific of Costa Rica | marine | fish | gastrointestinal tract | 36 items ind ⁻¹ | 100 | 153 |
| Guayas River, Ecuador | estuary | crab | muscle tissues | 0.50 ± 0.87 to 29.81 ± 18.13 items g ⁻¹ | ni | 33 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|-------------|---------------------------------------|--|---|------------------------|-----------|
| Galápagos, Ecuador | marine | fish, crustaceans, and mollusks | gastrointestinal tract and dorsal muscle | ni | 69 | 34 |
| Gulf of Tehuantepec, Mexican Tropical Pacific | marine | fish | stomach | 67 items ind ⁻¹ | 24, 22.2, 53.8 | 154 |
| Atoyac Riverbasin, Mexico | freshwater | fish | gastrointestinal tract | ni | 100 | 155 |
| Campeche Bay, Mexico | marine | fish | gastrointestinal tract | 1.31 items ind ⁻¹ | 42 | 156 |
| Campeche, Mexico | soil | earthworm and chicken | earthworm casts, chicken gizzard, crop and feces | 10.2 items ind ⁻¹ | ni | 90 |
| Gulf of Mexico, Mexico | estuary | fish | gastrointestinal tract | 4.71 items ind ⁻¹ | 100 | 37 |
| Punta Corrientes, Peru | marine | otter | feces | ni | 100 | 157 |
| Los Yuyos and Las Sombrillas Beaches, Peru | marine | mollusk | soft tissues | 3.79 items ind ⁻¹ and 3.15 items g ⁻¹ | ni | 158 |
| Peru-Chile trench | marine | amphipod | hindgut | ni | 80 | 159 |

Table S3. Abundance of microplastics in the biota across Latin America (cont.)

| Location | Compartment | Animal | Translocation spot | Abundance | Contamination rate / % | Reference |
|---|-------------|---------------------------|------------------------|------------------------------|------------------------|-----------|
| Uruguayan coast | marine | turtle | gastrointestinal tract | 0.05 items ind ⁻¹ | 32 | 160 |
| Punta del Diablo, Uruguay | marine | fish | gastrointestinal tract | ni | 18.7 | 161 |
| Barra del Chuy and La Coronilla, Uruguay | marine | isopods and polychaeta | entire body | ni | ni | 96 |

ni: not informed; na: not available;

References

1. Ronda, A. C.; Arias, A. H.; Oliva, A. L.; Marcovecchio, J. E.; *Mar. Pollut. Bull.* **2019**, *149*, 110618.
2. Ríos, M. F.; Hernández-Moresino, R. D.; Galván, D. E.; *Mar. Pollut. Bull.* **2020**, *159*, 111491.
3. Pazos, R. S.; Amalvy, J.; Cochero, J.; Pecile, A.; Gómez, N.; *Mar. Pollut. Bull.* **2021**, *168*, 112382.
4. Villagran, D. M.; Truchet, D. M.; Buzzi, N. S.; Forero Lopez, A. D.; Fernández Severini, M. D.; *Mar. Pollut. Bull.* **2020**, *150*, 110686.
5. Pazos, R. S.; Bauer, D. E.; Gómez, N.; *Environ. Pollut.* **2018**, *243*, 134.
6. Fernández Severini, M. D.; Villagran, D. M.; Buzzi, N. S.; Sartor, G. C.; *Reg. Stud. Mar. Sci.* **2019**, *32*, 100829.
7. Montecinos, S.; Tognana, S.; Pereyra, M.; Silva, L.; Tomba, J. P.; *Sci. Total Environ.* **2021**, *760*, 143390.
8. Forero López, A. D.; Truchet, D. M.; Rimondino, G. N.; Maisano, L.; Spetter, C. V.; Buzzi, N. S.; Nazzarro, M. S.; Malanca, F. E.; Furlong, O.; Fernández Severini, M. D.; *Sci. Total Environ.* **2021**, *754*, 142413.
9. Alfonso, M. B.; Arias, A. H.; Piccolo, M. C.; *Environ. Monit. Assess.* **2020**, *192*, 117.
10. Alfonso, M. B.; Scordo, F.; Seitz, C.; Mavo Manstretta, G. M.; Ronda, A. C.; Arias, A. H.; Tomba, J. P.; Silva, L. I.; Perillo, G. M. E.; Piccolo, M. C.; *Sci. Total Environ.* **2020**, *733*, 139385.
11. Ivar do Sul, J. A.; Costa, M. F.; Barletta, M.; Cysneiros, F. J. A.; *Mar. Pollut. Bull.* **2013**, *75*, 305.
12. Ivar do Sul, J. A.; Costa, M. F.; Fillmann, G.; *Water, Air, Soil Pollut.* **2014**, *225*, 2004.
13. Castro, R. O.; Silva, M. L.; Marques, M. R. C.; de Araújo, F. V.; *Mar. Pollut. Bull.* **2016**, *110*, 555.
14. Figueiredo, G. M.; Vianna, T. M. P.; *Mar. Pollut. Bull.* **2018**, *135*, 256.
15. Olivatto, G. P.; Martins, M. C. T.; Montagner, C. C.; Henry, T. B.; Carreira, R. S.; *Mar. Pollut. Bull.* **2019**, *139*, 157.
16. Garcia, T. M.; Campos, C. C.; Mota, E. M. T.; Santos, N. M. O.; Campelo, R. P. S.; Prado, L. C. G.; Melo Jr., M.; Soares, M. O.; *Mar. Pollut. Bull.* **2020**, *150*, 110705.
17. Castro, R. O.; da Silva, M. L.; Marques, M. R. C.; de Araújo, F. V.; *Mar. Pollut. Bull.* **2020**, *160*, 111537.
18. Forero-López, A. D.; Rimondino, G. N.; Truchet, D. M.; Colombo, C. V.; Buzzi, N. S.; Malanca, F. E.; Spetter, C. V.; Fernández-Severini, M. D.; *Sci. Total Environ.* **2021**, *785*, 147141.
19. Bertoldi, C.; Lara, L. Z.; Mizushima, F. A. L.; Martins, F. C. G.; Battisti, M. A.; Hinrichs, R.; Fernandes, A. N.; *Sci. Total Environ.* **2021**, *759*, 143503.
20. Ferraz, M.; Bauer, A. L.; Valiati, V. H.; Schulz, U. H.; *Water (Switzerland)* **2020**, *12*, 1.
21. Lins-Silva, N.; Marcolin, C. R.; Kessler, F.; Schwamborn, R.; *Mar. Environ. Res.* **2021**, *169*, 105327.
22. Lacerda, A. L. F.; Proietti, M. C.; Secchi, E. R.; Taylor, J. D.; *Mol. Ecol.* **2020**, *29*, 1903.
23. Lorenzi, L.; Reginato, B. C.; Mayer, D. G.; Dantas, D. V.; *Environ. Sci. Pollut. Res.* **2020**, *27*, 8797.
24. Castillo, C.; Fernández, C.; Gutiérrez, M. H.; Aranda, M.; Urbina, M. A.; Yáñez, J.; Álvarez, Á.; Pantoja-Gutiérrez, S.; *Mar. Pollut. Bull.* **2020**, *160*, 111591.
25. Eriksen, M.; Maximenko, N.; Thiel, M.; Cummins, A.; Lattin, G.; Wilson, S.; Hafner, J.; Zellers, A.; Rifman, S.; *Mar. Pollut. Bull.* **2013**, *68*, 71.
26. Ory, N. C.; Sobral, P.; Ferreira, J. L.; Thiel, M.; *Sci. Total Environ.* **2017**, *586*, 430.
27. Portz, L.; Manzolli, R. P.; Herrera, G. V.; Garcia, L. L.; Villate, D. A.; Ivar do Sul, J. A.; *Mar. Pollut. Bull.* **2020**, *157*, 111323.
28. Silva, P. M.; Nanny, M. A.; *Water (Switzerland)* **2020**, *12*, 1210.
29. Garcés-Ordóñez, O.; Espinosa, L. F.; Costa Muniz, M.; Pereira, L. B. S.; dos Anjos, R. M.; *Environ. Sci. Pollut. Res.* **2021**, *28*, 43431.

30. Correa-Herrera, T.; Barletta, M.; Lima, A. R. A.; Jiménez-Segura, L. F.; Arango-Sánchez, L. B.; *J. Fish Biol.* **2017**, *90*, 1356.
31. Johnson, D. E.; Ross Salazar, E.; Gallagher, A.; Rees, A.; Sheridan Rodriguez, C.; Cambronero Solano, S.; Rojas Ortega, G.; Barrio Froján, C.; *Mar. Policy* **2018**, *96*, 235.
32. Donoso, J. M.; Rios-Touma, B.; *Heliyon* **2020**, *6*, e04302.
33. Villegas, L.; Cabrera, M.; Capparelli, M. V.; *Bull. Environ. Contam. Toxicol.* **2021**, *107*, 20.
34. Alfaro-Núñez, A.; Astorga, D.; Cáceres-Farías, L.; Bastidas, L.; Soto Villegas, C.; Macay, K.; Christensen, J. H.; *Sci. Rep.* **2021**, *11*, 6424.
35. Rose, D.; Webber, M.; *Sci. Total Environ.* **2019**, *664*, 753.
36. Quesadas-Rojas, M.; Enriquez, C.; Valle-Levinson, A.; *Sci. Total Environ.* **2021**, *776*, 145803.
37. Sánchez-Hernández, L. J.; Ramírez-Romero, P.; Rodríguez-González, F.; Ramos-Sánchez, V. H.; Márquez Montes, R. A.; Romero-Paredes Rubio, H.; Sujitha, S. B.; Jonathan, M. P.; *Chemosphere* **2021**, *277*, 130261.
38. Fossi, M. C.; Baini, M.; Panti, C.; Galli, M.; Jiménez, B.; Muñoz-Arnanz, J.; Marsili, L.; Finoia, M. G.; Ramírez-Macías, D.; *Comp. Biochem. Physiol., Part C: Toxicol. Pharmacol.* **2017**, *199*, 48.
39. Narciso-Ortiz, L.; Coreño-Alonso, A.; Mendoza-Olivares, D.; Lucho-Constantino, C. A.; Lizardi-Jiménez, M. A.; *Environ. Sci. Pollut. Res.* **2020**, *27*, 23035.
40. Ramírez-Álvarez, N.; Rios Mendoza, L. M.; Macías-Zamora, J. V.; Oregel-Vázquez, L.; Alvarez-Aguilar, A.; Hernández-Guzmán, F. A.; Sánchez-Osorio, J. L.; Moore, C. J.; Silva-Jiménez, H.; Navarro-Olache, L. F.; *Sci. Total Environ.* **2020**, *703*, 134838.
41. Pelamatti, T.; Fonseca-Ponce, I. A.; Rios-Mendoza, L. M.; Stewart, J. D.; Marín-Enríquez, E.; Marmolejo-Rodriguez, A. J.; Hoyos-Padilla, E. M.; Galván-Magaña, F.; González-Armas, R.; *Mar. Pollut. Bull.* **2019**, *145*, 604.
42. Blettler, M. C. M.; Ulla, M. A.; Rabuffetti, A. P.; Garello, N.; *Environ. Monit. Assess.* **2017**, *189*, 581.
43. Blettler, M. C. M.; Garello, N.; Ginon, L.; Abrial, E.; Espinola, L. A.; Wantzen, K. M.; *Environ. Pollut.* **2019**, *255*, 113348.
44. Mitchell, C.; Quaglino, M. C.; Posner, V. M.; Arranz, S. E.; Sciara, A. A.; *Environ. Sci. Pollut. Res.* **2021**, *28*, 16140.
45. Díaz-Jaramillo, M.; Islas, M. S.; Gonzalez, M.; *Environ. Pollut.* **2021**, *273*, 116398.
46. Pazos, R. S.; Suárez, J. C.; Gómez, N.; *Ecosistemas* **2020**, *29*, 1.
47. de Scisciolo, T.; Mijts, E. N.; Becker, T.; Eppinga, M. B.; *Mar. Pollut. Bull.* **2016**, *106*, 49.
48. Costa, L. L.; Arueira, V. F.; da Costa, M. F.; di Beneditto, A. P. M.; Zalmon, I. R.; *Mar. Pollut. Bull.* **2019**, *145*, 5.
49. Costa, M. F.; Ivar do Sul, J. A.; Silva-Cavalcanti, J. S.; Araújo, M. C. B.; Spengler, Â.; Tourinho, P. S.; *Environ. Monit. Assess.* **2010**, *168*, 299.
50. Turra, A.; Manzano, A. B.; Dias, R. J. S.; Mahiques, M. M.; Barbosa, L.; Balthazar-Silva, D.; Moreira, F. T.; *Sci. Rep.* **2014**, *4*, 4435.
51. de Carvalho, D. G.; Baptista Neto, J. A.; *Ocean Coast. Manag.* **2016**, *128*, 10.
52. Pinheiro, L. M.; Monteiro, R. C. P.; Ivar do Sul, J. A.; Costa, M. F.; *Mar. Pollut. Bull.* **2019**, *141*, 569.
53. Alves, V. E. N.; Figueiredo, G. M.; *Mar. Pollut. Bull.* **2019**, *146*, 326.
54. Baptista Neto, J. A.; Gaylarde, C.; Beech, I.; Bastos, A. C.; da Silva Quaresma, V.; de Carvalho, D. G.; *Ocean Coastal Manage.* **2019**, *169*, 247.
55. Baptista Neto, J. A.; de Carvalho, D. G.; Medeiros, K.; Drabinski, T. L.; de Melo, G. V.; Silva, R. C. O.; Silva,

- D. C. P.; de Sousa Batista, L.; Dias, G. T. M.; da Fonseca, E. M.; dos Santos Filho, J. R.; *Mar. Pollut. Bull.* **2019**, *149*, 110558.
56. Martinelli Filho, J. E.; Monteiro, R. C. P.; *Mar. Pollut. Bull.* **2019**, *145*, 219.
57. Monteiro, R. C. P.; Ivar do Sul, J. A.; Costa, M. F.; *Ocean Coastal Res.* **2020**, *68*, e20235.
58. Gerolin, C. R.; Pupim, F. N.; Sawakuchi, A. O.; Grohmann, C. H.; Labuto, G.; Semensatto, D.; *Sci. Total Environ.* **2020**, *749*, 141604.
59. Moruzzi, R. B.; Speranza, L. G.; da Conceição, F. T.; de Souza Martins, S. T.; Busquets, R.; Campos, L. C.; *Water (Switzerland)* **2020**, *12*, 1994.
60. Moreira, F. T.; Prantoni, A. L.; Martini, B.; de Abreu, M. A.; Stoiev, S. B.; Turra, A.; *Mar. Pollut. Bull.* **2016**, *102*, 114.
61. Cavalcante, R. M.; Pinheiro, L. S.; Teixeira, C. E. P.; Paiva, B. P.; Fernandes, G. M.; Brandão, D. B.; Frota, F. F.; Filho, F. J. N. S.; Schettini, C. A. F.; *Waste Manage.* **2020**, *108*, 13.
62. Ivar do Sul, J. A.; Spengler, Â.; Costa, M. F.; *Mar. Pollut. Bull.* **2009**, *58*, 1236.
63. Balthazar-Silva, D.; Turra, A.; Moreira, F. T.; Camargo, R. M.; Oliveira, A. L.; Barbosa, L.; Gorman, D.; *Front. Environ. Sci.* **2020**, *8*, 1.
64. Moreira, F. T.; Balthazar-Silva, D.; Barbosa, L.; Turra, A.; *Environ. Pollut.* **2016**, *218*, 313.
65. Izar, G. M.; Morais, L. G.; Pereira, C. D. S.; Cesar, A.; Abessa, D. M. S.; Christofoletti, R. A.; *Reg. Stud. Mar. Sci.* **2019**, *29*, 100705.
66. Fisner, M.; Majer, A. P.; Balthazar-Silva, D.; Gorman, D.; Turra, A.; *Environ. Sci. Pollut. Res.* **2017**, *24*, 13732.
67. Maynard, I. F. N.; Bortoluzzi, P. C.; Nascimento, L. M.; Madi, R. R.; Cavalcanti, E. B.; Lima, Á. S.; Jeraldo, V. L. S.; Marques, M. N.; *Sci. Total Environ.* **2021**, *771*, 144777.
68. Carvalho, J. P. S.; Silva, T. S.; Costa, M. F.; *Mar. Pollut. Bull.* **2021**, *166*, 112212.
69. Toyama, D.; Fernandes, V. V.; Christoforo, A. L.; Menezes, D. B.; *J. Environ. Manage.* **2021**, *290*, 112610.
70. Andrades, R.; Santos, R. G.; Joyeux, J. C.; Chelazzi, D.; Cincinelli, A.; Giarrizzo, T.; *Mar. Pollut. Bull.* **2018**, *137*, 180.
71. Palombini, F. L.; Demori, R.; Cidade, M. K.; Kindlein, W.; de Jacques, J. J.; *Environ. Sci. Pollut. Res.* **2018**, *25*, 26218.
72. Fernandino, G.; Elliff, C. I.; Silva, I. R.; Bittencourt, A. C. S. P.; *J. Integr. Coastal Zone Manage.* **2015**, *15*, 325.
73. Pozo, K.; Urbina, W.; Gómez, V.; Torres, M.; Nuñez, D.; Přibylová, P.; Audy, O.; Clarke, B.; Arias, A.; Tombesi, N.; Guida, Y.; Klánová, J.; *Mar. Pollut. Bull.* **2020**, *151*, 110786.
74. Corradini, F.; Casado, F.; Leiva, V.; Huerta-Lwanga, E.; Geissen, V.; *Sci. Total Environ.* **2021**, *752*, 141917.
75. Corradini, F.; Meza, P.; Eguiluz, R.; Casado, F.; Huerta-Lwanga, E.; Geissen, V.; *Sci. Total Environ.* **2019**, *671*, 411.
76. Hidalgo-Ruz, V.; Thiel, M.; *Mar. Environ. Res.* **2013**, *87-88*, 12.
77. Garcés-Ordóñez, O.; Castillo-Olaya, V. A.; Granados-Briceño, A. F.; Blandón García, L. M.; Espinosa Díaz, L. F.; *Mar. Pollut. Bull.* **2019**, *145*, 455.
78. Garcés-Ordóñez, O.; Espinosa Díaz, L. F.; Pereira Cardoso, R.; Costa Muniz, M.; *Mar. Pollut. Bull.* **2020**, *160*, 111558.
79. Garcés-Ordóñez, O.; Espinosa, L. F.; Cardoso, R. P.; Issa Cardozo, B. B.; Meigikos dos Anjos, R.; *Environ. Pollut.* **2020**, *267*, 115495.
80. Acosta-Coley, I.; Duran-Izquierdo, M.; Rodriguez-Cavallo, E.; Mercado-Camargo, J.; Mendez-Cuadro, D.;

- Olivero-Verbel, J.; *Mar. Pollut. Bull.* **2019**, *146*, 574.
81. Acosta-Coley, I.; Mendez-Cuadro, D.; Rodriguez-Cavallo, E.; de la Rosa, J.; Olivero-Verbel, J.; *Mar. Pollut. Bull.* **2019**, *139*, 402.
82. Acosta-Coley, I.; Olivero-Verbel, J.; *Environ. Monit. Assess.* **2015**, *187*, 435.
83. Mazariegos-Ortíz, C.; de los Ángeles Rosales, M.; Carrillo-Ovalle, L.; Cardoso, R. P.; Muniz, M. C.; dos Anjos, R. M.; *Mar. Pollut. Bull.* **2020**, *156*, 111220.
84. Bosker, T.; Guaita, L.; Behrens, P.; *Mar. Pollut. Bull.* **2018**, *133*, 442.
85. Borges Ramirez, M. M.; Dzul Caamal, R.; Rendón von Osten, J.; *Sci. Total Environ.* **2019**, *672*, 97.
86. Piñon-Colin, T. J.; Rodriguez-Jimenez, R.; Pastrana-Corral, M. A.; Rogel-Hernandez, E.; Wakida, F. T.; *Mar. Pollut. Bull.* **2018**, *131*, 63.
87. Alvarez-Zeferino, J. C.; Ojeda-Benítez, S.; Cruz-Salas, A. A.; Martínez-Salvador, C.; Vázquez-Morillas, A.; *Resour. Conserv. Recycl.* **2020**, *155*, 104633.
88. Shruti, V. C.; Jonathan, M. P.; Rodriguez-Espinosa, P. F.; Rodríguez-González, F.; *Sci. Total Environ.* **2019**, *654*, 154.
89. Álvarez-Lopezello, J.; Robles, C.; del Castillo, R. F.; *Ecol. Indic.* **2021**, *121*, 107084.
90. Lwanga, E. H.; Vega, J. M.; Quej, V. K.; Chi, J. A.; del Cid, L. S.; Chi, C.; Segura, G. E.; Gertsen, H.; Salánki, T.; van der Ploeg, M.; Koelmans, A. A.; Geissen, V.; *Sci. Rep.* **2017**, *7*, 14071.
91. Retama, I.; Jonathan, M. P.; Shruti, V. C.; Velumani, S.; Sarkar, S. K.; Roy, P. D.; Rodríguez-Espinosa, P. F.; *Mar. Pollut. Bull.* **2016**, *113*, 530.
92. Alvarez-Zeferino, J. C.; Ojeda-Benítez, S.; Cruz-Salas, A. A.; Martínez-Salvador, C.; Vázquez Morillas, A.; *Data Br.* **2020**, *33*, 106473.
93. Delvalle de Borrero, D.; Fábrega Duque, J.; Olmos, J.; Garcés-Ordóñez, O.; do Amaral, S. S. G.; Vezzone, M.; de Sá Felizardo, J. P.; Meigikos dos Anjos, R.; *Air, Soil Water Res.* **2020**, *13*, 1.
94. De-la-Torre, G. E.; Dioses-Salinas, D. C.; Castro, J. M.; Antay, R.; Fernández, N. Y.; Espinoza-Morriberón, D.; Saldaña-Serrano, M.; *Mar. Pollut. Bull.* **2020**, *151*, 110877.
95. Pérez-Alvelo, K. M.; Llegus, E. M.; Forestier-Babilonia, J. M.; Elías-Arroyo, C. V.; Pagán-Malavé, K. N.; Bird-Rivera, G. J.; Rodríguez-Sierra, C. J.; *Mar. Pollut. Bull.* **2021**, *164*, 112010.
96. Vermeiren, P.; Lercari, D.; Muñoz, C. C.; Ikejima, K.; Celentano, E.; Jorge-Romero, G.; Defeo, O.; *Environ. Pollut.* **2021**, *286*, 117308.
97. Lozoya, J. P.; Teixeira de Mello, F.; Carrizo, D.; Weinstein, F.; Olivera, Y.; Cedrés, F.; Pereira, M.; Fossati, M.; *Environ. Pollut.* **2016**, *218*, 931.
98. Rodríguez, C.; Fossati, M.; Carrizo, D.; Sánchez-García, L.; Teixeira de Mello, F.; Weinstein, F.; Lozoya, J. P.; *Sci. Total Environ.* **2020**, *721*, 137734.
99. Arias, A. H.; Ronda, A. C.; Oliva, A. L.; Marcovecchio, J. E.; *Bull. Environ. Contam. Toxicol.* **2019**, *102*, 750.
100. Pazos, R. S.; Maiztegui, T.; Colautti, D. C.; Paracampo, A. H.; Gómez, N.; *Mar. Pollut. Bull.* **2017**, *122*, 85.
101. Pazos, R. S.; Spaccesi, F.; Gómez, N.; *Reg. Stud. Mar. Sci.* **2020**, *38*, 101360.
102. Fernández Severini, M. D.; Buzzi, N. S.; Forero López, A. D.; Colombo, C. V.; Chatelain Sartor, G. L.; Rimondino, G. N.; Truchet, D. M.; *Mar. Pollut. Bull.* **2020**, *161*, 111700.
103. Pérez, A. F.; Ojeda, M.; Rimondino, G. N.; Chiesa, I. L.; Di Mauro, R.; Boy, C. C.; Calcagno, J. A.; *Mar. Pollut. Bull.* **2020**, *161*, 111753.
104. Ballejo, F.; Plaza, P.; Spezzale, K. L.; Lambertucci, A. P.; Lambertucci, S. A.; *Sci. Total Environ.* **2021**, *755*, 142421.

105. Lima, F. P.; Azevedo-Santos, V. M.; Santos, V. M. R.; Vidotto-Magnoni, A. P.; Soares, C. L.; Manzano, F. V.; Nobile, A. B.; *Water, Air, Soil Pollut.* **2021**, 232, 29.
106. Petry, M. V.; Araújo, L. D.; Brum, A. C.; Benemann, V. R. F.; Finger, J. V. G.; *Mar. Pollut. Bull.* **2021**, 167, 112337.
107. da Costa, M. B.; dos Santos, M. O.; Viegas, G. M. F.; Ocaris, E. R. Y.; Caniçali, F. B.; Cozer, C. R.; Zamprogno, G. C.; Otegui, M. B. P.; *Mar. Pollut. Bull.* **2021**, 165, 112127.
108. Urbanski, B. Q.; Denadai, A. C.; Azevedo-Santos, V. M.; Nogueira, M. G.; *Biota Neotrop.* **2020**, 20, e20201005.
109. Nunes, L. T.; Cord, I.; Francini-Filho, R. B.; Stampar, S. N.; Pinheiro, H. T.; Rocha, L. A.; Floeter, S. R.; Ferreira, C. E. L.; *Coral Reefs* **2019**, 38, 955.
110. Gonçalves, G. R. L.; Negreiros-Franozo, M. L.; Fransozo, A.; Castilho, A. L.; *Hydrobiologia* **2020**, 847, 1013.
111. Dantas, D. V.; Ribeiro, C. I. R.; Frischknecht, C. C. A.; Machado, R.; Farias, E. G. G.; *Environ. Sci. Pollut. Res.* **2019**, 26, 8344.
112. Macieira, R. M.; Oliveira, L. A. S.; Cardozo-Ferreira, G. C.; Pimentel, C. R.; Andrade, R.; Gasparini, J. L.; Sarti, F.; Chelazzi, D.; Cincinelli, A.; Gomes, L. C.; Giarrizzo, T.; *Mar. Pollut. Bull.* **2021**, 167, 112371.
113. Vieira, K. S.; Baptista Neto, J. A.; Crapez, M. A. C.; Gaylarde, C.; Pierri, B. S.; Saldaña-Serrano, M.; Bainy, A. C. D.; Nogueira, D. J.; Fonseca, E. M.; *Mar. Pollut. Bull.* **2021**, 166, 112225.
114. Ferreira, G. V. B.; Barletta, M.; Lima, A. R. A.; Morley, S. A.; Costa, M. F.; *Sci. Rep.* **2019**, 9, 13514.
115. Colabuono, F. I.; Barquete, V.; Domingues, B. S.; Montone, R. C.; *Mar. Pollut. Bull.* **2009**, 58, 93.
116. Miranda, D. de A.; de Carvalho-Souza, G. F.; *Mar. Pollut. Bull.* **2016**, 103, 109.
117. Santos, R. G.; Andrade, R.; Demetrio, G. R.; Kuwai, G. M.; Sobral, M. F.; Vieira, J. S.; Machovsky-Capuska, G. E.; *Environ. Pollut.* **2020**, 265, 114918.
118. Oliveira, C. W. S.; Corrêa, C. S.; Smith, W. S.; *Rev. Ambiente Agua* **2020**, 9, 445.
119. Petry, M. V.; Benemann, V. R. F.; *Mar. Pollut. Bull.* **2017**, 117, 131.
120. Pegado, T.; Brabo, L.; Schmid, K.; Sarti, F.; Gava, T. T.; Nunes, J.; Chelazzi, D.; Cincinelli, A.; Giarrizzo, T.; *Mar. Pollut. Bull.* **2021**, 162, 111799.
121. Ribeiro-Brasil, D. R. G.; Torres, N. R.; Picanço, A. B.; Sousa, D. S.; Ribeiro, V. S.; Brasil, L. S.; Montag, L. F. A.; *Environ. Pollut.* **2020**, 266, 115241.
122. Silva, J. D. B.; Barletta, M.; Lima, A. R. A.; Ferreira, G. V. B.; *Environ. Pollut.* **2018**, 242, 1010.
123. Neto, J. G. B.; Rodrigues, F. L.; Ortega, I.; Rodrigues, L. dos S.; Lacerda, A. L. d. F.; Coletto, J. L.; Kessler, F.; Cardoso, L. G.; Madureira, L.; Proietti, M. C.; *Environ. Pollut.* **2020**, 267, 115508.
124. Rizzi, M.; Rodrigues, F. L.; Medeiros, L.; Ortega, I.; Rodrigues, L.; Monteiro, D. S.; Kessler, F.; Proietti, M. C.; *Mar. Pollut. Bull.* **2019**, 140, 536.
125. Morais, L. M. S.; Sarti, F.; Chelazzi, D.; Cincinelli, A.; Giarrizzo, T.; Martinelli Filho, J. E.; *Environ. Pollut.* **2020**, 265, 114817.
126. Andrade, M. C.; Winemiller, K. O.; Barbosa, P. S.; Fortunati, A.; Chelazzi, D.; Cincinelli, A.; Giarrizzo, T.; *Environ. Pollut.* **2019**, 244, 766.
127. Rossi, L. C.; Scherer, A. L.; Petry, M. V.; *Mar. Pollut. Bull.* **2019**, 138, 235.
128. Ferreira, G. V. B.; Barletta, M.; Lima, A. R. A.; *Sci. Total Environ.* **2019**, 655, 292.
129. de Amorim, A. L. A.; Ramos, J. A. A.; Nogueira Jr., M.; *Mar. Pollut. Bull.* **2020**, 158, 111214.
130. Roda, J. F. B.; Lauer, M. M.; Risso, W. E.; Bueno dos Reis Martinez, C.; *Comp. Biochem. Physiol., Part A: Mol. Integr. Physiol.* **2020**, 242, 110659.
131. Dantas, N. C. F. M.; Duarte, O. S.; Ferreira, W. C.; Ayala, A. P.; Rezende, C. F.; Feitosa, C. V.; *Mar. Pollut.*

- Bull.* **2020**, *153*, 110959.
132. Pegado, T. S. S.; Schmid, K.; Winemiller, K. O.; Chelazzi, D.; Cincinelli, A.; Dei, L.; Giarrizzo, T.; *Mar. Pollut. Bull.* **2018**, *133*, 814.
133. Ferreira, G. V. B.; Barletta, M.; Lima, A. R. A.; Morley, S. A.; Justino, A. K. S.; Costa, M. F.; *Environ. Pollut.* **2018**, *236*, 706.
134. Birnstiel, S.; Soares-Gomes, A.; da Gama, B. A. P.; *Mar. Pollut. Bull.* **2019**, *140*, 241.
135. Ramos, J. A. A.; Barletta, M.; Costa, M. F.; *Aquat. Biol.* **2012**, *17*, 29.
136. Santana, M. F. M.; Ascer, L. G.; Custódio, M. R.; Moreira, F. T.; Turra, A.; *Mar. Pollut. Bull.* **2016**, *106*, 183.
137. Gusmão, F.; Di Domenico, M.; Amaral, A. C. Z.; Martínez, A.; Gonzalez, B. C.; Worsaae, K.; Ivar do Sul, J. A.; da Cunha Lana, P.; *Environ. Pollut.* **2016**, *216*, 584.
138. Silva-Cavalcanti, J. S.; Silva, J. D. B.; de França, E. J.; de Araújo, M. C. B.; Gusmão, F.; *Environ. Pollut.* **2017**, *221*, 218.
139. Vendel, A. L.; Bessa, F.; Alves, V. E. N.; Amorim, A. L. A.; Patrício, J.; Palma, A. R. T.; *Mar. Pollut. Bull.* **2017**, *117*, 448.
140. Tourinho, P. S.; Ivar do Sul, J. A.; Fillmann, G.; *Mar. Pollut. Bull.* **2010**, *60*, 396.
141. Colabuono, F. I.; Taniguchi, S.; Montone, R. C.; *Mar. Pollut. Bull.* **2010**, *60*, 630.
142. Possatto, F. E.; Barletta, M.; Costa, M. F.; Ivar do Sul, J. A.; Dantas, D. V.; *Mar. Pollut. Bull.* **2011**, *62*, 1098.
143. Dantas, D. V.; Barletta, M.; da Costa, M. F.; *Environ. Sci. Pollut. Res.* **2012**, *19*, 600.
144. Perez-Venegas, D. J.; Seguel, M.; Pavés, H.; Pulgar, J.; Urbina, M.; Ahrendt, C.; Galbán-Malagón, C.; *Mar. Pollut. Bull.* **2018**, *136*, 50.
145. Mizraji, R.; Ahrendt, C.; Perez-Venegas, D.; Vargas, J.; Pulgar, J.; Aldana, M.; Patricio Ojeda, F.; Duarte, C.; Galbán-Malagón, C.; *Mar. Pollut. Bull.* **2017**, *116*, 498.
146. Ory, N.; Chagnon, C.; Felix, F.; Fernández, C.; Ferreira, J. L.; Gallardo, C.; Garcés Ordóñez, O.; Henostroza, A.; Laaz, E.; Mizraji, R.; Mojica, H.; Murillo Haro, V.; Ossa Medina, L.; Preciado, M.; Sobral, P.; Urbina, M. A.; Thiel, M.; *Mar. Pollut. Bull.* **2018**, *127*, 211.
147. Perez-Venegas, D. J.; Toro-Valdivieso, C.; Ayala, F.; Brito, B.; Iturra, L.; Arriagada, M.; Seguel, M.; Barrios, C.; Sepúlveda, M.; Oliva, D.; Cárdenas-Alayza, S.; Urbina, M. A.; Jorquera, A.; Castro-Nallar, E.; Galbán-Malagón, C.; *Mar. Pollut. Bull.* **2020**, *153*, 110966.
148. Pozo, K.; Gomez, V.; Torres, M.; Vera, L.; Nuñez, D.; Oyarzún, P.; Mendoza, G.; Clarke, B.; Fossi, M. C.; Baini, M.; Přibylová, P.; Klánová, J.; *Mar. Pollut. Bull.* **2019**, *140*, 315.
149. Chagnon, C.; Thiel, M.; Antunes, J.; Ferreira, J. L.; Sobral, P.; Ory, N. C.; *Environ. Pollut.* **2018**, *243*, 127.
150. Garcia, A. G.; Suárez, D. C.; Li, J.; Rotchell, J. M.; *Environ. Sci. Pollut. Res.* **2021**, *28*, 14488.
151. Garcés-Ordóñez, O.; Mejía-Esquibia, K. A.; Sierra-Labastidas, T.; Patiño, A.; Blandón, L. M.; Espinosa Díaz, L. F.; *Mar. Pollut. Bull.* **2020**, *154*, 111085.
152. Calderon, E. A.; Hansen, P.; Rodríguez, A.; Blettler, M. C. M.; Syberg, K.; Khan, F. R.; *Water, Air, Soil Pollut.* **2019**, *230*, 1.
153. Bermúdez-Guzmán, L.; Alpízar-Villalobos, C.; Gatgens-García, J.; Jiménez-Huezo, G.; Rodríguez-Arias, M.; Molina, H.; Villalobos, J.; Paniagua, S. A.; Vega-Baudrit, J. R.; Rojas-Jimenez, K.; *Reg. Stud. Mar. Sci.* **2020**, *38*, 101367.
154. del Carmen Alejo-Plata, M.; Herrera-Galindo, E.; Cruz-González, D. G.; *Mar. Pollut. Bull.* **2019**, *142*, 504.
155. Martinez-Tavera, E.; Duarte-Moro, A. M.; Sujitha, S. B.; Rodriguez-Espinosa, P. F.; Rosano-Ortega, G.; Expósito, N.; *Chemosphere* **2021**, *266*, 128968.

156. Borges-Ramírez, M. M.; Mendoza-Franco, E. F.; Escalona-Segura, G.; von Osten, J. R.; *Environ. Pollut.* **2020**, 267, 115659.
157. Santillán, L.; Saldaña-Serrano, M.; De-La-Torre, G. E.; *Mastozool. Neotrop.* **2020**, 27, 211.
158. De-La-torre, G. E.; Apaza-Vargas, D. M.; Santillán, L.; *Rev. Biol. Mar. Oceanogr.* **2020**, 55, 167.
159. Jamieson, A. J.; Brooks, L. S. R.; Reid, W. D. K.; Piertney, S. B.; Narayanaswamy, B. E.; Linley, T. D.; *R. Soc. Open Sci.* **2019**, 6, 180667.
160. Vélez-Rubio, G. M.; Teryda, N.; Asaroff, P. E.; Estrades, A.; Rodriguez, D.; Tomás, J.; *Mar. Pollut. Bull.* **2018**, 127, 603.
161. Limongi, P.; Lacerot, G.; Segura, A.; *Pan.-Am. J. Aquat. Sci.* **2019**, 14, 71.



This is an open-access article distributed under the terms of the Creative Commons Attribution Licence.