

General comments

This paper reviewed the research on marine plastics in the Indian Ocean (IO). Focusing fields include the source, observations, transportation, fate, and impacts of marine plastics. Although the authors should check this manuscript warily because of many mistakes (e.g., not accurate section number, no figure 3), this paper contributes to understanding marine pollution by plastics in IO; hence, I recommended publishing this paper after careful and sincere revisions.

Specific comments

Location	Sentence	Comments / Question / Suggestion
Abstract	In the northern Indian Ocean, the majority of the plastic material will most likely end up being beached due to the absence of a subtropical gyre,	This leads to misunderstanding. Why plastic materials being beached due to the absence of a subtropical gyre. You must explain more for this reasoning.
L97-98	Plastic waste enters the IO from coastal sources transported by wind and tides, from sources far into the hinterland transported by rivers, and directly from ocean-based sources.	Because the authors ignore “the coastal source transported by wind and tide,” please explain its meaning in the following subsection.
L129	Lebreton et al. (2017) estimated that plastic waste input from rivers in the IO peaks in August (Figure 1c).	Where is Figure 1c? If the author mean Figure 3 in Lebreton et al. (2017, https://www.nature.com/articles/ncomms15611.pdf), modify the sentence. If not so, show Figure 1c.
L 130	In the southern hemisphere, the largest coastal and riverine sources of IO plastic waste are from Indonesia and eastern Africa (Figure 1b).	I could not understand why the authors mean “the largest coastal and riverine source of IO plastic waste are from Indonesia and eastern Africa.” For me, the largest looks like Indonesia only.
L 170	This therefore highlights the need for a standardised global protocol for the study	Already some researchers focus on the standardization of protocols. Refer them, for example:

	<p>of plastic debris and should be a major priority in ocean plastic research going forward.</p>	<p>Michida Y., Chavanich S., Chiba S., Cordova M.R., Cózar Cabañas A., Galgani F. Hagmann P., Hinata H., Isobe A., Kershaw P., Kozlovskii N., Li D., Lusher A.L., Martí E., Mason S.A., Mu J., Saito H., Shim W.J., Syakti A.D., Agung Dhamar, Takada H., Thompson R., Tokai T. Uchida K. Vasilenko K., Wang J (2020) Guidelines for Harmonizing Ocean Surface Microplastic Monitoring Methods. Ministry of the Environment Japan, 71 pp.</p> <p>Isobe A., Buenaventura N.T., Chastain S., Chavanich S., Cózar A., DeLorenzo M., Hagmann P., Hinata H., Kozlovskii N., Lusher A.L., Martí E., Michida Y., Mu J., Ohno M., Potter G., Ross P.S., Sagawa N., Shim W.J., Song Y.K., Takada H., Tokai T., Torii T., Uchida K., Vassillenko K., Viyakarn V., and Zhang W. (2019) An interlaboratory comparison exercise for the determination of microplastics in standard sample bottles. <i>Mar. Pollut. Bull.</i>, 146, pp. 831–837. https://doi.org/10.1016/j.marpolbul.2019.07.033.</p> <p>Gago J., Filgueiras A., Pedrotti M.L., Suaria G., Tirelli V., Andrade J., Frias J., Nash R., O’Connor I., Lopes C., Caetano M., Raimundo J., Carretero O., Viñas L., Antunes J., Bessa F., Sobral P., Goruppi A., Aliani S., Palazzo L., de Lucia G.A., Camedda A., Muniategui S., Grueiro G., Fernandez V., Gerdtts G. (2018) Standardized protocol for monitoring microplastics in seawater. JPI-Oceans BASEMAN project. pp. 34.</p>
L188 to L201	<p>Buoyant plastics drifting ~~~~ (Maximenko et al., 2012).</p>	<p>this paragraph is redundant. Please organize a little more.</p>
L 191	<p>Ocean surface currents are forced by many different</p>	<p>How waves force ocean currents? I think it is because of storks drift. Why the author divide Coriolis force</p>

	mechanisms such as wind, waves, tides, and density gradients (Talley et al., 2011; van Sebille et al., 2020). In combination with the Coriolis force, these forcing mechanisms result in Ekman currents, geostrophic currents, and Stokes drift that transport plastics.	and geostrophic currents? If readers are not physical oceanographers, these two sentences lead to misunderstanding. So, please modify them.
L 203	-	Where is Figure 3
L 249	The presence of the land mass in the northern IO results in there being no subtropical gyre.	This explanation is too direct and incorrect. Refer the comments for the abstract
L 301	This location was selected as a central location where current reversals driven by the monsoon, but it does not reflect a source of plastics (see section 4).	Where is the location in section 4? Now I'm reading section 4.
L360 - L380	Subsection 4.3 To the best of our ~ needs further investigation.	Although I could understand what the author means, the explanation looks de-organized. Please modify.
L 400 to L 405	However, ~ in the IO.	The discussion is too rough. Please explain more details.
L 413 to L 440	5. Fate	What is the difference from Section 4? Section 4 and Section 5 look similar to each other. Perhaps, reorganization of the section is required to help readers' understanding.
L 547	The main beaching region in the southern IO is the coast of northern Madagascar.	Why can readers understand northern Madagascar has a beach region from sections as mentioned above?
Figure 3		The authors do not refer to this figure in the manuscript. Refer to this figure to the proper place.

		<p>In figure 3(a), the left side is the land (river); in contrast, in figure 3(b), the left side implies offshore. Please use the same direction in (a) and (b).</p> <p>The meaning of the arrow (ocean currents) in (a) is difficult to understand.</p>
Table 1	A sequence of the location	<p>Why do the authors choose this sequence? Arrangement with Observations (this might be “Observation site”?) is more fruitful for readers.</p>

Technical corrections

Line	Sentence	Comments / Question / Suggestion
L152	Size categories as defined by GESAMP (2018; Frias and Nash, 2019) are: <0.1 mm (nanoplastics); 0.33–1.00mm (small microplastics); 1.01–4.75mm (large microplastics); 4.76–200 mm (mesoplastic); and, > 0.200 mm (macroplastics).	<p>Followings are mistakes.</p> <p>4.76–<u>200 mm</u> (mesoplastic)</p> <p><u>> 0.200 mm</u> (macroplastics)</p> <p>I recommend using the latest version of GESAMP.</p> <p>GESAMP(2019)</p> <p>http://www.gesamp.org/publications/guidelines-for-the-monitoring-and-assessment-of-plastic-litter-in-the-ocean</p>
L 155	high- and low density polypropylene (HDPP and LDPP, respectively);	I have no experience using high- and low-density polypropylene. I do not think it is not shared. Check Figure 2.1 in GESAMP (2019).
L159	However, all types of plastics were found in water and sediment samples (fibres, fragments, films, and pellets).	What about Foam? Check Figure 9.4 in GESAMP (2019).
L165	Global open ocean plastic samples were standardised by van Sebille et al. (2020) and the plastic concentrations from these samples in the IO can be	In Figure 2a, the authors refer van Sebille et al. (2015). Which is the right?

	quantitatively compared (Figure 2a).	
L 220	Convergent flows promote downwelling causing an accumulation along the convergent flow boundary of buoyant plastic debris.	I recommend inserting “front” here.
L215	Aggregations of plankton, larvae, and eggs are often found on the surface. Here, as the water sinks at the front due to convergent flow buoyant material will remain at the surface. Predators such as fish and higher order biota are found above and beneath the front.	I recommend referring to the paper to strengthen the importance of fronts. Miyao Y., and Isobe A. (2016) A combined balloon photography and buoy-tracking experiment for mapping surface currents in coastal waters. J. Atmos. Oceanic Technol., 33, pp. 1237–1250. https://doi: 10.1175/JTECH-D-15-0113.1 . (see Fig 5)
L253	4.2.1 Northern Indian Ocean surface dynamics and plastic transport pathways	The font in the other sections (e.g., 4.2.2) is italic.
L 266	Along the coastlines of India and Sri Lanka in the Arabian Sea, the West Indian Coastal Current (WICC)	No WICC in Figure 4.
L269	After passing the coast of Sri Lanka, the ocean surface currents form an anti-clockwise eddy called the Sri Lanka Dome (SLD; Su et al., 2021).	No SLD in Figure 4
L300	Passive particles (100,000) were released at a location to the south of Sri Lanka (Figure 4) on 1 Sep 2019 (end of the south-west monsoon) and tracked over a period of 12 months.	The authors used Figure 4; is it a mistake of Figure 5?
L 302 to	During the first two months of ~	Is Figure 4 a misrefer of Figure 5?

L 313	and Indonesia (Figure 4e).	
L 324	In the south, the gyre is bounded by the Antarctic Circumpolar Current (ACC).	I recommend adding ACC in Figure 4.
L 347	Mheen et al. (2020a) showed that buoyant plastics can cross from the northern IO into the southern IO as they are transported by the SJC along the Sumatran coastline. This mainly occurred during the Second Inter-Monsoon in their simulations.	If need, I recommend referring to Figure 5.
L360	To the best of our knowledge, no studies have currently focussed on the transport of plastics from the Pacific Ocean into the IO through the ITF.	Perhaps, the words are no need to explain.
L 372 to L380	Based on Lagrangian particle tracking simulations, Maes et al. (2018) suggested ~ still needs further investigation.	Do you mean the pathway through FC? If so, use FC elsewhere.
L 550	7.2 Knowledge gaps	Where is 7.1?
L567	colourants	additivities?
Figure 4		The authors should add more information (national, currents, date) to figure for easy understanding.
Figure 7		Brown looks like Red. Change color.
Table 1	Naidu, , 2019	Naidu, 2019
Table 1	Barnes,(2004	Barnes, 2004
Table 1	Nel and Froneman 2015	Nel and Froneman, 2015