Dr. Gabriel L. M. Rosa
Oecologia Australis
Editor-in-chief – Ornithology

Dear editor, once again we are thankful for the comments provided by the two anonymous reviewers that greatly improved the quality of our manuscript. We accepted the great majority of the suggestions provided by both reviewers, including a deep reformulation in the introduction and discussion. We attended all suggestions provided by Reviewer #1. However, the Reviewer #2 provided several comments in addition to the first-round review in which we tried to attempt as much as possible. Thus, we added most of the references suggested, rewritten many sentences as well as well as many paragraphs. Finally, we requested a grammar revision from an English native speaker which have contributed to the clarity of the new sentences. Once we attended for twice almost all the suggestions provided by the two reviewers and have already received a positive final decision from the Reviewer #1 we would like to ask for more specific suggestions from the reviewer #2, in case you consider we still need to change something on this manuscript.

Please find below the itemized response to the suggested changes of the reviewers.

Sincerely,

The authors

Comments of REVIEWER #1
--------------------------------------------------------------

\*\*\*General comments\*\*\*

The authors did a good job in this second submission. They accepted much of
my suggestions and they did a further review. I noticed that they improved a
lot the contextualization and the discussions, citing strong references.
Thus, now the paper have a good persuasive text.
Before I consider ready to be accepted, I just have few comments (see
bellow)

My apologies, in advance, in suggesting more than technical changes in your
paper. Reports of encounters of ringed birds is still neglect in Brazil,
although nowadays there are lots of citizens over the country equipped with
proper materials to help observe/track birds. Your paper is a good example
of how important casual encounters could be for science and environmental
policy if people start to report this encounter in a proper online spot.
Thus, I believe that we could change this scenario if more papers could
calls attention for this demand.

\*\*Suggested corrections\*\*

\*\*Keywords: If you allow me, I would suggest you to include ‘bird
banding’, ‘bird resighting’ and ‘citizen science’ in your list.
You have now a paper that are also calling attention for future coordinated
reports of ringed pigeons, including citizen science methodology. So, I
suggest you to let your paper traceable for those researchers that are
seeking for examples of benefits of bird banding techniques, as well as for
those that are planning new citizen science projects.

Authors: We added citizen science instead of transoceanic which is already mentioned in the title.

\*\*Paragraph in lines 103-109: The content in this paragraph is important for
the paper, but I am afraid that much is in the wrong place. Please follow my
explanation:
-       Take a look that the sentence in lines 103-105 is repeating information in
lines 122-123. As short communication don´t have clear separation of topics
(such as, material and methods, results, etc), by using repetitive sentences
that are very next each other would hinder a good text reading. Thus, I
believe that you could avoid this sentence in this paragraph, and rewrite
the lines 122-123, for example:

Your new lines 122-123 - […]In our review we found five similar records of
transatlantic movement on homing pigeons arriving in the Brazilian coast,
three of them available only in non-scientific newspaper:[…]

-       Take a look that the sentence in lines 105-107 is actually discussing one
results of your paper (i.e., the number of reports of ringed pigeons that
you found after your review). Therefore, you could use this sentence right
after the lines 122-123, or even after line 146…it is up to you.

-       The sentence in lines 107-109 is the only content that in think is really
in the right place. I just suggest you a few adjustment:

[…]In the next paragraphs, we describe our original record in Abrolhos
Archipelago followed by the review of all similar records found in the
literature. Practical applications and recommendations are discussed at the
end of the present paper. […]

Authors: Thank very much for your suggestion. We restructured these sentences as well as a considerable part of these two paragraphs where the redundancy was pointed out.

\*\*Line 211 and 214 – Please correct the reference. Instead Alexandrino et
al. 2008 it is actually Alexandrino et al. 2018.

Authors: Changed.

Line 214 – If you want to call attention for more participation of
non-ornithologist citizens in report encounters with ringed pigeons
(including sailors or ship passengers) I suggest you to cite citizen science
projects in Brazil that are trying to engage citizens for bird individual
monitoring.  So, this reference is useful to be cited in this line:

Alexandrino, ER, et al. 2019. Challenges in Engaging Birdwatchers in Bird
Monitoring in a Forest Patch: Lessons for Future Citizen Science Projects in
Agricultural Landscapes. Citizen Science: Theory and Practice, 4(1): 4, pp.
1–14. DOI: <https://doi.org/10.5334/cstp.198>

I also invite you to visit the citizen science project “Eu vi uma ave
usando pulseiras!?” (Did I see a banded bird!?)
<https://scistarter.org/did-i-see-a-banded-bird>.
See the project goal.

Many thanks for the invitation.

\*\*Reference - Line 223 and 225 – Please exclude “jump to page 38, first
column”.
Done.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Comments of REVIEWER #2

--------------------------------------------------------------
Major comments.

The authors propose a short communication study to report the one occurrence of the non-native species Columba livia (a.k.a. house pigeon) in one oceanic island from the Brazilian archipelago. The species occurrence was tracked from the Canary Islands which suggests a successful transatlantic movement of one individual to overcome the oceanic barrier. Combining the personal observation, ecological and evolutionary background and past observation of the species in a similar context, the authors' highlight to the possibility that individuals of house pigeons are biologically and ecologically fitted to overcome the ocean barrier and can be a strong threat for the native bird assembly of Abrolhos Islands. In addition, the authors call for the attention of the necessity of systematic surveillance and data repository of non-native species recorded in the Brazilian Islands. In order to increase the available evidence for long-distance movements, the authors lumped their personal observation with similar observations collected in the literature. However, although the great relevance of real-time observation of introduction events, the study data seem to be not fitted to support the impact of house pigeons on native bird assemblage. Conversely, because of the importance of document recent introduction events, the author’s data seem to support the notion that species can move over larger distances mainly when supported with human assistance. This information on the authors’ data can be used to argue about the potential effects of human activities in move species for distances over their natural capacity and could provide good insights for further studies. Following this rationale, the present study also seems to be important to reinforce the effects of human capacity in shape species traits and consequently facilitate the spread of non-native species. Further, the data seems to support the necessity of studies with non-native species in Brazilian island regions which apparently does not have much information available. Particularly, I would like to highlight for the authors to take care of extrapolations. Almost all arguments of the study are extrapolations from one observation which are not supported by the whole data (i.e. observation and literature review). In addition, I would like to recommend for the authors to put more effort into writing clear and straightforward sentences. Therefore, I am inclined to suggest that the study is not finished to be published and with some theoretical modification the study could be fitted for future publication. For instance, I argue that the manuscript should be completely restructured.

Minor comments:

Lines 1 - 2: I would like to suggest more commit to the title. Since the authors do not show evidence of the negative effects of the house pigeons for native bird assembly, I suggest removing the expression potential threat from the title.

Authors: We prefer to keep the original title, as we think that “potential threats for native birds” is an important part of the text and the main reason for this publication.

Line 6 - 10: I would like to suggest the following modification:

Historically, domestic pigeon (*Columba livia domestica* Gmelin,1789) (Columbiformes, Columbidae) breeders use the species to promotes race competitions which over the time could select traits that to increase the flight performance and spatial orientation capabilities. Although the remarkable navigational abilities of the species, it is possible that these birds sometimes become disoriented pushing the specimen to fly off-course and over distances larger than usual.

Authors: Changed as suggested. New lines 6-11:

“Historically, Domestic pigeon (*Columba livia domestica* Gmelin,1789) (Columbiformes, Columbidae) breeders use the species to promotes race competitions which over the time could select traits to increase the flight performance and spatial orientation capabilities. Although the species has remarkable navigational abilities, it is possible that these birds sometimes become disoriented pushing the individuals to fly off-course and over distances larger than usual.”

Line 11 – Change “*recovered”* by “*observed*” and remove the word “off”.

Authors: Changed.

Line 11 – 12: replace “five similar records by secondary sources into” by “*in the scientific literature for similar introduction events (N = 5) in Southwest Atlantic Ocean coast”*

Authors: Changed. *New lines 11-15:*

“Here we report a Domestic Pigeon ringed in the Canary Islands (Spain) observed in the Abrolhos Archipelago, eastern Brazil, and compiled similar events (N = 5) in the Southwest Atlantic Ocean coast.”

Line 12 - 15: I would like to suggest for the authors to take care of extrapolations. The sentence “*Our results indicate that these events may occur more frequently than previously thought and might be becoming more frequent as the result of the growth in international trade and the increase in offshore shipping, which may provide the pigeons with stopovers*” is not supported by the study data. I believe that to support this sentence it will be necessary at least a frequency table of the introduced events. In addition, what sort of evidence could be used to support the sentence “international trade and the increase in offshore shipping, which may provide the pigeons with stopovers”?

Authors: We removed this sentence from the abstract, however, we decided to keep this discussion in the manuscript as we provide more evidence to support our supposition. Please, check the newlines: 167-182.

Lines 15 – 16: Please consider removing the sentence “*As the profile of these vagrants and the circumstances in which these occurs are not accessible to health authorities or scientists, we encourage the creation of a systematized database of these events*”. Further, what are the connections between health authorities and the presence of house pigeons on islands? Along the text It was not clear to me.

Authors: We rewrote the paragraph. We also added a sentence to better support our conclusion in the abstract. Please see the new lines 15-19 supporting our conclusion. See below:

“As domestic pigeons are possible intermediate hosts of diseases, we encourage the creation of a systematized database of this kind of movements of these birds, including the profile of these vagrants and the circumstances in which these events occur, which can be a basis to be used for scientists and decision makers”.

Lines 21 -44: Particularly, it was difficult to understand the two first paragraphs. Therefore, I was forced to rewrite the paragraphs. I would like that the authors considered the following modifications in the paragraphs.

The Rock Pigeon Columba livia is native from Palearctic regions and is one of the most successful non-natives globally spread birds. Although the native range of the species belongs to parts of Europe, Africa, and Asia, the presence of C. livia is broadly documented in the Americas continent. One potential explanation for the presence of the species in regions kilometers far from the natural species movement capacity lies in the ability of pigeons (family Columbidae) in flight long distances. However, flight over long distances does not necessarily indicate the capacity to overcome the challenges imposed by flight over large geographic barriers such as oceans. Conversely, because of the long history in the use of pigeons for breeding experiments over many generations, it is possible that the flight capacity and accuracy in return to their geographic origin have been enhanced (Shapiro & Domyan 2013). This could be associated with the existence of a lucrative business of racing competitions (Baptista et al. 1997) which force pigeon breeders to effectively train the birds to fly over long distances. Further, the Rock Pigeon movement capacity is estimated in up to 20 km from the roosting to the feeding sites (Baptista et al. 1997) which is inviable to overcome the oceanic barrier. Therefore, because the majority of the knowledge in avian navigation came from homing pigeons (Wiltschko & Wiltschko 2017), the species seems to be a good candidate species to study the effect of long flight capacity in the colonization of new geographical regions.

One of the remarkable navigational abilities in Domestic Pigeons is the capacity to track reference points and mapping the geographical surface (Wiltschko & Wiltschko 2017). For example, controlled experiments using geographic position system (i.e. GPS) shown that when flying over the sea or other homogeneous surfaces (e.g, water) domestic pigeons can effectively recognize and dynamically correct the flight trajectory over the land surface (Dell’Ariccia et al. 2009). This supports the notion that pigeons can recognize and overnight on vessels (Nicol 1945; Hutto 1998) when necessary. These abilities allow pigeons to rest on ships and can contribute to moving the species kilometers far from their origin. However, pigeons’ navigational abilities can be affected by natural factors such as storms, magnetic anomalies, and initial orientation behavior (Dennis et al. 2007), which can result in flight disorientation and force the species to fly over homogeneous surfaces such oceans. Therefore, the combination of spatial disorientation and the capacity to track different surfaces can increase the likelihood of species to move longer distances over the ocean.

Authors: We made several modifications in these two paragraphs. We also took the topic sentence of each paragraphs suggested by the reviewer 2 to incorporate in our paragraph construction.

Lines 45 – 53: If the study is focused on Brazilian islands, why emphasize only the status of the global island and not South America or Brazilian oceanic islands? I suggest rewrite the paragraph in order to provide more ecological information which supports the harmful of the presence of non-native species in oceanic Islands located in neotropical regions.

Bovendorp, R.S., Galetti, M., 2007. Density and population size of mammals introduced on a land-bridge island in southeastern Brazil. Biol. Invasions 9, 353–357. <https://doi.org/10.1007/s10530-006-9031-7>

Meyer, W.M., Cowie, R.H., 2010. Invasive temperate species are a threat to tropical island biodiversity. Biotropica 42, 732–738. <https://doi.org/10.1111/j.1744-7429.2010.00629.x>

Traveset, A., Kueffer, C., Daehler, C.C., 2014. Global and regional nested patterns of non-native invasive floras on tropical islands. J. Biogeogr. 41, 823–832. <https://doi.org/10.1111/jbi.12243>

Authors: We removed this paragraph as the focus of this short note is report the occurrence of Domestic pigeons crossing the Atlantic Ocean and its impact on native fauna in general, not specifically for insular fauna.

Lines 54 – 55: Please, be pragmatic and avoid emotional appeal in the sentences. Remove the sentence “and birds are the major victims”

Authors: We rewrote this sentence removing the term “victims”. Please check the new lines: 49-51. See below:

“Invasive birds have been assumed to cause minor or minimal impacts when compared with invasive mammals. Rodents (*Rattus* spp.), for example, are responsible for major impacts on insular wildlife (Towns et al. 2006).”

Lines 57: add Spatz et al. 2017 as reference for “invasive birds have been assumed to cause minor or minimal impacts, and it is usually more appropriate to adopt control measures than eradication (Strubbe et al. 2011)”

Added.

Lines 63 – 64: Please provide examples for the mentioned other types of impact.

We mentioned the hybridization as an additional impact to the previous cited pathogen transmission. Please check the lines 57-61 (also attached below). We also rewrote some previous sentences to make the text more readable – new lines 53-54.

New lines 56-57: “Nevertheless, these invasive birds, especially columbid species, are still potential vectors for many diseases to native birds”.

Lines 57-61: “Columbiformes was ranked sixth in the number of impacts and was notably associated with disease transmission, although other types of impacts have also been documented for columbid alien populations, such as hybridization with native species (Appendix 1).”

Lines 82 – 146: I would like to suggest for the authors to consider the following suggestions:

Since one of the strong author’s argument is the lack of reporting information from non-native species, I would like to suggest that the authors report their results in a more efficient format. The authors put too much effort to describe the results which consequently reduce the text space for more relevant information about the non-native species. Thus, I would like to suggest that the authors remove all the descriptive information from the main text and summarize them as a table. The table is more efficient in a report this sort of data and certainly will increase the efficiency to the readers in understand and visualize the potential patterns in the data. Below, I provided one example of a potential table.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Landmass Name | Land type | Longitude | Latitude | Country Origin | Distance (miles) | Year | Is ringed? | Reference |
| Santa Bárbara | Island | ? | ? | Canary Island | ? | 2014 | Yes | Author name |
| Fortaleza | Coastal | 38°31’ W | 03°44’ S | Guelley | 5,700 | 1986 | ? |  |
| Espírito Santo | Coastal | 40°18’ W | 20°17’ S | Canary Island | ? | 1990 | ? | Sick 1997 |
| São Pedro e São Paulo | Island | 29°02’05” W | 00°55’00” N | Canary Island | ? | 2012 | ? | ? |
| Fernando de Noronha | Island | 32°25’ W | 03°51’ S | Marroco | ? | 2015 | ? | ? |

However, some caution will be needed with the table. In order to increase the accessibility of the geographical information, I would like to suggest that the longitude and latitude columns should be reported in decimal coordinates instead of DMS (i.e. degree, minute and seconds) format. I’m sure that a large number of open-source software facilitates the procedure to deal with this sort of transformation. However, in the absence of software, it will be possible to use the website (http://www.dpi.inpe.br/calcula/) to transform the data. The distances should be reported in kilometers. I think that with the distances in hand it will be possible to measure an average geographic distance and the respective standard deviation between the origin and observed geographical location which could be used as reference measure from the distances flew (or traveled) by the species. Note that since you have the potential standard estimated distance for home pigeon in 20 km maybe it could be possible to test the hypothesis that the observed flight over the Atlantic Ocean could be more expected than a random event. This could be done using resample techniques to test if the known value of 20km of flight distance falls within or outside the confidence margins generate from a random distribution based on the distance sample.

Authors: Thank you for your suggestion. However, we preferred to keep the information in the text, as we could lose specific details of the records in the format of a table. As we are talking about only six records never compiled before, ones interested in these records might easily extract any information in its own way.

Line 148: Change “*We disregarded an alleged*” by “*We not considered one occurrence record*” and remove “*of the arrival*”

Authors: Changed. New lines 115-117.

Line 149: remove *on the mainland of the Brazilian*

Authors: Changed.

Lines 150: If the authors have the photograph and a reference source, I suggest maintaining the information.

We were not able to contact the breeders as the website is instable. Additionally, information provided on website does not seem accurate enough to be added in the manuscript.

Lines 153: What means the expression “*a potential route of new diseases introduction*”? Since the authors are arguing about introduced species, I would like to suggest the use of the common expression in invasion ecology context. I would like to suggest changing the word *route* to *vector* or *pathway*. For more details read the following references:

Blackburn, T.M., Pyšek, P., Bacher, S., Carlton, J.T., Duncan, R.P., Jarošík, V., Wilson, J.R.U., Richardson, D.M., 2011. A proposed unified framework for biological invasions. Trends Ecol. Evol. 26, 333–339. <https://doi.org/10.1016/j.tree.2011.03.023>

Lockwood et al, 2007. Invasion Ecology

Authors: We changed it as suggested. Now line 145.

Lines 156 – 157: The data provided by the study do not support the sentence “*We believe that these pigeons should be carried by ships which provide stopovers for them*” However, the hypothesis that human activities facilitate the movements of species is broadly used as a potential explanation for species movement over larger distances. I would like to suggest to the author to put more effort into the argumentation that humans’ activities can facilitate the movement of species which increases the likelihood to overcome larger biogeographical barriers. Further, if it is possible to provide some examples for introduced species assisted by human activities. For more detail I suggest the following studies:

Adelino, J.R.P., Anjos, L. dos, Lima, M.R., 2017. Invasive potential of the pied crow (Corvus albus) in eastern Brazil: best to eradicate before it spreads. Perspect. Ecol. Conserv. 15, 227–233. <https://doi.org/10.1016/j.pecon.2017.07.001>

Banks, N.C., Paini, D.R., Bayliss, K.L., Hodda, M., 2015. The role of global trade and transport network topology in the human-mediated dispersal of alien species. Ecol. Lett. 18, 188–199. <https://doi.org/10.1111/ele.12397>

Capinha, C., Essl, F., Seebens, H., Moser, D., Pereira, H.M., 2015. The dispersal of alien species redefines biogeography in the Anthropocene. Science (80-. ). 348, 1248–1251. <https://doi.org/10.1126/science.aaa8913>

Gallardo, B., Zieritz, A., Aldridge, D.C., 2015. The importance of the human footprint in shaping the global distribution of terrestrial, freshwater and marine invaders. PLoS One 10, 1–17. <https://doi.org/10.1371/journal.pone.0125801>

Hulme, P.E., 2009. Trade, transport and trouble: Managing invasive species pathways in an era of globalization. J. Appl. Ecol. 46, 10–18. <https://doi.org/10.1111/j.1365-2664.2008.01600.x>

In order to attend this comment, we rewrote several sentences to make this statement more convincing. New lines: 153-161.

“We believe that all these recorded pigeons benefitted from ships that provided stopovers for them. Is largely accepted that human activities facilitate species movements over larger distances than expected in natural conditions (Gallardo et al. 2015). Additionally, there is an abundant literature reporting terrestrial birds resting in overseas ships (Nicol 1945, Casement 1983, Smith 1987) which seems to be the case of at least one of these records, on Espírito Santo state (Sick 1997). We are aware that a unique explanation for these records might not hold because we cannot check detailed information, such as day and geographic coordinates, from departure to time of arrival. However, it is unlikely that pigeons might flight such long distances without rest.”

We are thankful for the bibliography provided, specially Hulme 2009, Gallardo et al. 2015, and Adelino et al 2017 which were cited also in different context of our manuscript.

Lines 163 – 166: I would like to suggest the rephrasing of the sentence by:

Although measure and infer the ecological impacts of alien species is not a simple task (Crystal-ornela et al. 2020), the negative effects of invasive species in faunal islands are well supported (Doherty et al. 2016; Spatz et al. 2017). However, negative effects of alien species has been subject of increasing denialism (Russell & Blackburn 2017).

Crystal-ornelas, R., Lockwood, J.L., 2020. The ‘known unknowns’ of invasive species impact measurement. Biol. Invasions 0. <https://doi.org/10.1007/s10530-020-02200-0>

Doherty, T.S., Glen, A.S., Nimmo, D.G., Ritchie, E.G., Dickman, C.R., 2016. Invasive predators and global biodiversity loss. Proc. Natl. Acad. Sci. U. S. A. 113, 11261–11265. <https://doi.org/10.1073/pnas.1602480113>

Spatz, D.R., Zilliacus, K.M., Holmes, N.D., Butchart, S.H.M., Genovesi, P., Ceballos, G., Tershy, B.R., Croll, D.A., 2017. Globally threatened vertebrates on islands with invasive species. Sci. Adv. 3. <https://doi.org/10.1126/sciadv.1603080>

Authors: We rewrote the paragraph adding some suggested rephrases. New lines: 209-211 and the whole paragraph 298-206 below.

“The negative effects of invasive species, especially in oceanic islands, are currently well supported (Doherty et al. 2016; Spatz et al. 2017). However, the magnitude of impacts varies from case to case and assessing these impacts is not a simple task. Impacts of alien species might be expressed in different levels of biological organization (*e.g.* physiological, populational, community), take decades before becoming detectable, and exert different magnitude of impact on different sites (Crystal-Ornelas et al. 2020). Unfortunately, these effects have been the subject of increasing denialism, which occurs when, far beyond the legitimate informed skepticism, doubts are created on a current scientific consensus (Russell & Blackburn 2017).”

Lines 166 – 169: I would like to suggest the use of the supplementary information to provide more robust arguments about the potential threats of invasive species.

Authors: Although we rewrote the paragraph, we decided to not accept this suggestion.

We had added this supplementary information summarizing the extensive review provided by Evans et al. (2016) in order to attempt to a similar comment provided by the Reviewer. As our main focus is reporting the occurrence of transatlantic pigeons crossing the Atlantic Ocean, the potential threats examples are the supportive information to highlight the importance of these occurrences, not the central topic of our report. Furthermore, we rewrote several sentences to make the text clearer and more convincing in such way that we do not think is necessary to add more speculative potential threats involved in these occurrences. The new paragraph is attached below:

Newlines: 207-223: “Given the magnitude of the potential impacts which these transatlantic vagrants might offer to native fauna, we cannot wait for an unequivocal evidence of direct impact before bringing these records formally for the scientific literature. Being cautious about potential invasions or disease transmission from vagrant Domestic Pigeons is prudent. Disease spreading or the establishment of an invasive population of Domestic Pigeons can result from just few individuals reaching high densities within a few years (Harmon *et al.* 1987, Smith 1987). In the Galapagos archipelago, Domestic Pigeons are suspected to have introduced the protozoan *Trichomonas gallinae* for the endemic and critically endangered Galapagos Dove *Zenaida galapagoensis* (Harmon *et al.* 1987), resulting in a long-term and expensive eradication project (Phillips *et al.* 2012). The establishment of new parasites and pathogens are among the most harmful alien groups to the faunal health (Young *et al.* 2016), and sporadic dispersions of a few pigeons may potentially introduce pathogens to novel habitats, as reported for long-distance migrant species (Altizer *et al.* 2011). Thus, we recommend the implementation of a systematic reporting system for vagrant ringed Domestic Pigeons recorded. Whenever members of the public, including sailors, find a ringed bird, they should record details (including photographs) and report the findings to the relevant bodies, such as environmental agencies and public health authorities.”

Lines 167 – 169: Why this statement are relevant? Please, consider in using up to date references.

Causton, C.E., Ja, H., Izurieta, J.C., Araujo, E., Cruz, M., Zander, K.K., Izurieta, A., Garnett, S.T., 2020. Alien species pathways to the Galapagos 1–21.

To clarity, the sentence as well the paragraph was rewritten: The newlines 209-210 are attached below. See anterior suggestion to check the new paragraph.

Newlines: 209-210: “Being cautious about potential invasions or disease transmission from vagrant Domestic Pigeons is prudent.”

Lines 176 – 179: The data provided in the study do not support the statement. The data available in the study only support the notion that ships could be used to move species over larger distances. Please rephrase the sentence.

Hulme, P.E., 2009. Trade, transport and trouble: Managing invasive species pathways in an era of globalization. J. Appl. Ecol. 46, 10–18. <https://doi.org/10.1111/j.1365-2664.2008.01600.x>

Please, see the comments on the next suggestion.

Lines 176 – 178: I would like to suggest that the authors be careful with extrapolations. The data used do not support the sentence “*which suggests that these records might be becoming more frequent*”. Further, I would like to suggest for the authors to rewrite the paragraph in order to provide more evidence-based connections between the movement of species assisted by international ship movement. Note that for birds this could include illegal wildlife traffic and human society cultures.

Reino, L., Figueira, R., Beja, P., Araújo, M.B., Capinha, C., Strubbe, D., 2017. Networks of global bird invasion altered by regional trade ban. Sci. Adv. 3, 1–9. <https://doi.org/10.1126/sciadv.1700783>

The authors: We moved this sentence to next to the paragraph where we discuss the possible causes of theses arrivals. We also rewrote the paragraph to be more convincing. Please check the new lines: 167-182.

“The transportation of species far from their origins is increasing with globalization (Levine & D’Antonio 2003, Hulme et al. 2009). Indeed, three of the six transatlantic movements of Domestic Pigeons reported here occurred within the past eight years, suggesting that these transatlantic vagrants are becoming more frequent as the ship traffic and the international maritime commerce increase. This hypothesis is well-supported for many alien plants, insects, and mollusks (Levine & D’Antonio 2003), and should hold for these transatlantic vagrant pigeons which were likely ship-assisted to arrive in Brazilian coast. Global and Brazilian shipping statistics also seem to support this hypothesis. According to Brazilian syndicate of shipping companies (Sindicato Nacional das Empresas de Navegação Marítima – Syndarma – [www.syndarma.org.br]), the number of seagoing vessels increased almost threefold in the last four decades, and the volume of cargo circulating in Brazil has increased approximately fourfold in the last eight years. Nevertheless, tracking a temporal trend between alien species records and international trade is challenging (Levine & D’Antonio 2003), because national commerce policies vary from country to country (Sánchez & Pinto 2016, Laxe et al. 2016). Moreover, birds using ships as stopovers may only do so briefly, taking more advantage of a number of potential stepstones.”

Lines 191: would like to suggest that the authors be more careful with the sentences. The authors report a reduced number of information about non-native species, and this not means absence. I suggest rewriting the sentence in order to maintain the coherence with the data reported by the study.

See below.

Lines 192: What means *largely overlooked by both breeders and researchers*? Please, be more specific and provide the respective references.

The authors: We rewrote the whole paragraph in order to make it clearer and more convincing. New lines: 183-184. Please see the whole new paragraph newlines 183-197.

New lines: “The profile in where these transatlantic movements have been reported reveals that they have been largely overlooked by both breeders and researchers.”

Lines 196 – 198: Why the authors underestimate the quality of the observed results? Real-time observations are rare events in invasion ecology. Further, when observed it’s difficult to track the source of the propagule. The author's observation match with both conditions. In this sense, I would like to suggest that the author highlight the importance and validity of the data to support future decisions and surveillance.

The authors: We rearranged this sentence as well as the whole paragraph. We expect that these changes have be enough to fit this comment. New lines:207-223.