

Authors' response to the Editor's report, 18th September 2014:

Editor Initial Decision: Publish subject to minor revisions (Editor review) (09 Sep 2014) by

Prof. Bjarni D. Sigurdsson

Comments to the Author:

This is a very nice and elegant study and the geographical link makes the manuscript suitable for publication in BG in the editor's opinion, even if the journal does rarely publish genetic studies.

Thank you very much indeed.

Here are some minor technical revisions that the editor asks the authors to correct before final submission to BG

Page 2 – line 10: followings: => following: **Corrected.**

Page 2 – line 11: Surtsey has => Surtsey had [It is customary to quote own results in past tense] **Corrected. Also elsewhere throughout the manuscript.**

Page 2 – line 19: and this appears => and this appeared **Corrected.**

Page 3 – line 3: of the frigid North Atlantic Ocean => of the North Atlantic Ocean [this was an unnecessary word] **The word „frigid“ has been deleted.**

Page 3 – line 5: just 3 nautical miles => [Give this distance in km, please. Nautical miles is not a SI unit and most people are not familiar with them] **Changed, from „3 nautical miles“ to „5 km“.**

Page 3 – line 17: The study species, *Honckenya peploides*, was first recorded on the island in 1967, 26 individuals (Fridriksson and Johnsen, 1968). The plants survived the first winter and the species has since grown on and dominated the vegetation of sandy habitats on the island to this day (Fridriksson, 1970; Magnússon et al., 2009 and 2014). => The study species, *Honckenya peploides*, was first recorded on the island in 1967, 26 individuals (Fridriksson and Johnsen, 1968) and the plants survived the first winter (Fridriksson, 1970). [The flow of the story was interrupted by jumping back and forth in time – better to tell the colonization story first and then state what is the status of the species today...] **The text has been rearranged as suggested. The sentence indicating present day situation has been moved to the end of the paragraph. *The species has since grown on and dominated the vegetation of most sandy habitats on the island to this day (Magnússon et al., 2009 and 2014).***

Page 3 – line 23: total of 548 H. peploides individuals were recorded indicating an increase in seed producing plants on the island. => total of 548 H. peploides individuals were recorded indicating the first episode of seeding of the first colonizers on the island [is this what you were trying to say?] **Changed as suggested: ..indicating the first episode of seedlings produced on the island.**

Page 3 – line 24: ... on the island. => H. peploides has since become a key species in plant communities of most sandy habitats on the island (Magnússon et al., 2009 and 2014). [it has actually lost to other species in sandy habitats where N availability has been increased by seagull activity – so I suggest that you say „most sandy habitats“] **Changed as suggested: ..most sandy habitats on the island..**

Page 4 – line 8: with ecosystems in higher succession stages => with ecosystems of higher successional stages [or: higher successional seres] **Corrected, from „succession“ to „successional“.**

Page 4 – line 9: these islands provide, => such areas provide, [you were not only talking about islands earlier!] **Corrected, from „these islands“ to „such areas“.**

Page 5 – line 5: with decrease in island size => with decreasing island size [??] **The suggested change reads much better, and so it has been amended.**

Page 5 – line 8: topographic capacity => topographic heterogeneity [?? – I don't remember Whittaker using the term „topographic capacity“??] **Thank you. Changed to „topographical complexity“ as used in Whittaker et al. 2008.**

Page 6 – line 7: In the following study => In the present study **Changed as suggested.**

Page 7 – line 5: under study Honckenya => under study, Honckenya **Add comma as suggested.**

Page 7 – line 11 m above sea level (masl) => [you don't need to define m a.s.l. specifically. But to avoid using the a.s.l. I suggest that you just write it out as you do the first time, and after that you just say „m“ => please remove „masl“ elsewhere.] **Amended throughout as suggested: first m a.s.l., after that just „m“ at 11 places. One location (SF) did not have the elevation, but it has now been updated.**

Page 7 – line 15: volcanic tuft => volcanic tuff [I believe that the more correct term is „tuff“, even if „tuft“ occurs infrequently in written English...] **It is indeed „tuff“, thank you.**

Page 8 – line 10: Five locations are on Surtsey: => Five locations were on Surtsey: [please use past tense when you discuss your own study and findings – correct this also elsewhere in the text in this sub-chapter!] **Corrected throughout.**

Page 16 – line 16: can be seen => could be seen [please use past tense when you present and discuss your own results] **Amended throughout the Results and Discussion sections.**

Page 17 – line 4: A similar pattern... => [It is not considered a good style to start a paragraph with such a link to what was said earlier... If it is a direct continuum of what was said above this should not be a new paragraph... Rephrase or state „similar to what“...] **The section 3.4 now starts with this sentence: „*The east-west pattern revealed by the Bayesian analysis (Fig. 1) was also apparent in the neighbour joining (NJ) trees (Fig. 2) and this was supported by the multidimensional scaling (MDS) analysis (results not shown).*”**

Page 17 – line 6: (results available on request) => [The authors should consider to submit this data as „supporting material“ when submitting the final version of the manuscript – and then you can refer to that here] **See above: changed from „(results available on request)“ to „(results not shown)“. We had this MDS plot in the earlier version of our manuscript, but one of the reviewers found it to be redundant as both the STRUCTURE and NJ analyses already showed the same clustering/division clearly. It is therefore not necessary to put the MDS back on as „supporting material“. In line with this change, we have shortened the title 3.4, from „Neighbour joining (NJ) trees and multidimensional scaling (MDS) analysis“ to „Neighbour joining (NJ) trees“.**

Page 17 – line 7: shows => showed [please go through your WHOLE Results chapter and correct to past tense where needed]. The editor gives up correcting this everywhere from now – but check also earlier sections. **Many apologies. This has been amended throughout the Results and Discussion sections.**

Page 18 – line 5: present study is from Surtsey. => present study was from Surtsey. [please go through your WHOLE Discussion chapter and correct to past tense where needed]. When you quote the results of the present study you should keep using past tense – only when you quote published results you can use present tense... **Again, this has been corrected throughout.**

Page 19 – line 9: to dispersal in this plant => to dispersal for this plant **Corrected.**

Page 20 – line 9: may have also been => may also have been **This paragraph is now gone, see below.**

Page 20 – line 18: that facilitates gene flow between populations. => [??? I don't understand this last statement – skip? – how does introgressive hybridization lead to more gene flow between local populations (of the same species at a place like Surtsey)? I understand this as you are referring to some process leading to gene flow – but not just that introgressive hybridization would likely increase the total genetic variability within a species as a whole ???]

The editor found the aspect of polyploidy-introgressive hybridization not directly relevant to Surtsey, which is true, and so we have deleted most of this paragraph together with three references. We knew it all along but got carried away by one of the referees' requests to expand on it. The whole chromosome story has a much wider (global) significance and our plan is to expand the chromosome project to cover the whole circumpolar range of the species and the results will be published elsewhere.

Page 21 – line 18: (*Branta bernicla hrota*) => (*Branta bernicla* ssp. *hrota*) **Amended.**

Finally, the editor asks the authors to make one last check that all quoted references are found in the reference list and vice versa... **Yes we have cross-checked the references throughout. One reference was not cited in the text. There were two mistakes in the manuscript text with the year published. Everything should be in a perfect shape now.**