

Interactive comment on “Plant colonization, succession and ecosystem development on Surtsey with reference to neighbouring islands” by B. Magnússon et al.

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General comments

This is a most welcome publication that summarises plant colonisation, succession, and soil development on Surtsey, a volcanic island that was formed in 1963. Much of what has been published about ecological dynamics and succession on Surtsey has been in Icelandic journals (e.g. Surtsey Research) that are not readily available. This paper is an important contribution to the literature on plant colonisation and succession on volcanic islands such as the Krakatau islands and Motmot on Long Island, Papua New Guinea. It presents an excellent and thoughtful analysis with an elegant presen-

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tation of the role of sea-birds and their nutrient-rich droppings in driving the ecosystem development. The paper is a pleasure to read – concise, well written, and logical.

Specific comments (line and page numbers refer to the Discussion Paper)

p.9384 line 7: It would be useful to say which flora is being used and what plant nomenclature is being followed.

p.9384 line 25: Can details about the selection of the location of the permanent plots be given? For example, what is the variation in substrate type? Is all the variation given in Table 1?

p.9385 line 34: I do not understand what “the lowest intercept value of 1 cm” means.

p.9389 line 4: Is *Salix lanata* correct or is it *S. lanata*?

p.9392 line 27: It would be useful to know how long are the DCA axes in terms of compositional turnover (the axes in Figure 8 have, I presume, been multiplied by 100). It would also be useful to know how much of total inertia is captured by DCA axes 1 and 2. On a more general point, given the ‘external’ variables you have, I would have considered also using canonical correspondence analysis (CCA) and tried to partition the total species inertia into fractions explained by substrate type, island, N-input, etc.

p.9394 line 22: Should the bird species have their Latin names?

p.9395 line 3: *Botrychium* is strictly a ‘fern ally’.

p.9398 line 6: It would be useful to expand on why you think these sites “provide a meaningful comparison”.

Technical corrections

Attention is needed prior to final publication in the use of commas in relation to words such as however and respectively and the use of hyphens such as for species-rich and nutrient-poor. Also, the use of past tense rather than present tense to describe the

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results seems odd. There is a mix of American and British spelling.

p.9384 line 2: all but a few, rather than “all but few”

p.9385 lines 8–9: south-facing, rather than “south facing”; slope, rather than “slobe”; north- or south-facing lava-cinder, rather than “north or south facing lava cinder”; dating from, rather than “dated from”

p.9385 line 11: west- (two) and north-facing (two), rather than “west (two) and north (two) facing”

p.9385 line 21: metre, not “meter” (if using British spelling)

p.9386 line 4: ? N analyser, rather than “N analyzer”

p.9386 line 8: harvested from, rather than “harvested on”

p.9388 line 2: most recent colonizer is, rather than “was”

p.9388 line 7: appear to have, rather than “appeared to have”

p.9390 line 2: most common species are (or were if everything is to be written in the past tense), rather than “most common species of were”

p.9391 lines 8–9: the area of the gull colony was only 0.03 ha, rather than “the area was only 0.03 ha in area”

p.9393 line 9: procumbens, not “procubens”

Interactive comment on Biogeosciences Discuss., 11, 9379, 2014.