Zoogeography Assignment 8 Reading Due Friday, April 3rd

Helmus, M. R., Mahler, D. L. and J. B. Losos. 2014. Island biogeography of the Anthropocene. *Nature* 513: 543-547.

**Instructions:**

* Use your **own words** and provide complete but **concise** answers to the following questions.
* Cite literature appropriately if referenced.
* Typed answers should not exceed 2 pages.
* E-copy to be handed in by 12:00pm, Friday, April 3rd, via email: mannfred.boehm@ubc.ca

1) Based on the biogeographic and phylogenetic distribution of Caribbean anole lizards (Figure 1), what can you infer about **dispersal** and **speciation** on the island of Cuba, in comparison to St. Lucia? Explain your reasoning with consideration of the SAR and SIR concepts discussed in the paper. [4pts]

2) Helmus and colleagues argued that increased anole colonization mediated by humans has obscured the past influence of speciation on Caribbean islands. The authors described two basic biogeographic patterns (see Question 1) expected in the past and observed in the present.

a) How do the authors predict the species isolation relationship (SIR) to change with increased colonization by exotic anole lizards? [2 pts]

b) How do the authors predict the species area relationship (SAR) to change with increased colonization (see: Figure 2a, Figure 2b)? [2 pts]

3) The US embargo against Cuba started in 1960 and is the most enduring trade embargo in modern history. Based on the results of this paper, what would be the biogeographic and ecological consequences for anoles in Cuba if the US-Cuba embargo ceased? [2 pts]

4) The authors state, “In the modern world, anoles colonize as commensals of humans arriving at new destinations primarily as stowaways in cargo shipments. In this context, island isolation should be redefined to be relevant to this new way in which islands gain species.” How would you revise the way island isolation is measured to incorporate economic isolation? [3 pts]