This study uses species distribution modeling to identify the environmental variables that determine the geographic distribution of *Philornis torquans,* a diptern ectoparasite of neotropical birds. The results indicate that temperature and moisture both contribute to limiting the geographic range of *P. torquans*. The study clearly and accurately communicates the results of the analysis. I am not familiar with MaxEnt and the analytical approach used, though my brief review of recent MaxEnt best practices suggests that the authors have conducted this analysis appropriately. I found the result that *P. torquans* may be limited by winter temperature, at both extremes, to be an interesting finding worthy of further study.

Regarding the broader contribution of the study: the manuscript lacks a strong motivation at the beginning and a strong take-home message. As a result, it's not clear what broader, exciting contribution this study makes to the existing literature. The abstract contributes to this problem – it's hard to read and the key problem and contribution of the study are not clear. It would be better structured as a single paragraph (no bullets) or with structured bullets (problem, approach, results, take-home). The opening paragraph of the Discussion highlights the methodological care with which the study was conducted. It would be more valuable to start off this section with a brief summary of the major problem and the take-home message, unless the methodology is the key contribution of the study (I don't believe that's the intent, but I am not qualified to evaluate any methodological contributions). If the key goal is to contribution is the creation of a reference for conservation efforts, the Discussion should link the findings to considerations relevant to conservation. Further comments follow:

Major comments

Philornis flies are obligate parasites as larvae right? Then it would be helpful to have more information about the host range of *P. torquans*. I gather it's a generalist, but it seems to be strongly associated with certain host species. To what extent does the distribution of host species explain the geographic distribution of *P. torquans*? Are environmental factors acting directly on *P. torquans* distribution or indirectly, via bird hosts? It's necessary to present (even if to ultimately dismiss) the possibility that host availability contributes to the geographic range when studying an obligate parasite.

Sampling and sample size: line 117 mentions field surveys that were conducted – how were locations for these chosen? Likewise for the data from existing literature – a summary of how sites were selected across studies would give some impression of the potential for biased sampling to impact the results of the analysis. The sample size is also fairly low – I see that this sample size is within the recommended range for minimum sample sizes from van Proosdij et al. (2016), but they also indicate that this range is highly sensitive to species and study area. Did the authors investigate the sensitivity of model accuracy to sample size?

The Discussion is long. Areas that feel particularly long: the first paragraph on methodological sophistication; references to modeling immature parasitic stages as a limitation of the study (given that the immature stages are obligate parasites, and conservation of bird hosts is cited as a primary use of the study results, I think modeling the ecological niche from the parasitic stage is legitimate, or at least not a sufficient problem to merit this much discussion); paragraphs from 366-389 could be collapsed and shortened to make the point here more clearly; lines 431-444.

Figures: I found Figure S1 (even S2) far more helpful in making sense of the results than Figure 2. Figure 3c is difficult to interpret from the legend.

Minor comments

Indent paragraphs.

There are several spots, particularly the Abstract and Introduction, where word choice or sentence structure need revision. I've highlighted a few examples below:

Line 57 – check sentence structure – a misplaced *and*?

Line 69 – *an* to *and*

Line 79 – *75% mortality of nestlings*

Line 96 – *constrain* in place of *restrain*

Line 104 – *indistinguishable* in place of *undistinguishable*

Line 275: *had* a bell shape

Line 280: *had* a sigmoidal shape

367 – *native* to southern south America

382 – remove "on the other hand"

403-404: clause structure "which lately" doesn't make sense

407 – *was* the most influential factor

425 – *though the humidity and moisture are clearly relevant factors determining*…

436 – the *latter* makes sense

442 – *relatively* in place of *relative*