

Supporting material shared with
Joan Giménez, PhD
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By Jonathan Handley: jonathan.m.handley@gmail.com, 21 Dec 2021

Material relates to manuscript in FIMS (2021): <https://www.frontiersin.org/articles/10.3389/fmars.2020.602972/full>

Please acknowledge or cite as appropriate.

Thank you.

Buffer question

Inbox x



Joan Giménez Verdugo joan.gimenez@csic.es [via](#) gmail.com
to jonathan.m.handley ▾

Mon, Dec 20, 4:02 PM (1 day ago)



Dear Jonathan,

We have used a similar approach to the one you use in "Handley et al. (2021). *Frontiers in Marine Science*" for Patagonian seabirds and I am wondering how you specify in your script to restrict the distribution at sea to a 60 degree buffer.

I am following the code of Critchley et al. but I see that she did not specify any buffer. Can you give some insights in how to do this in R modifying the code of Critchley et al. (I think it is also the one you are using)?

Thank you in advance.

Sincerely,

Joan

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Joan Giménez, PhD

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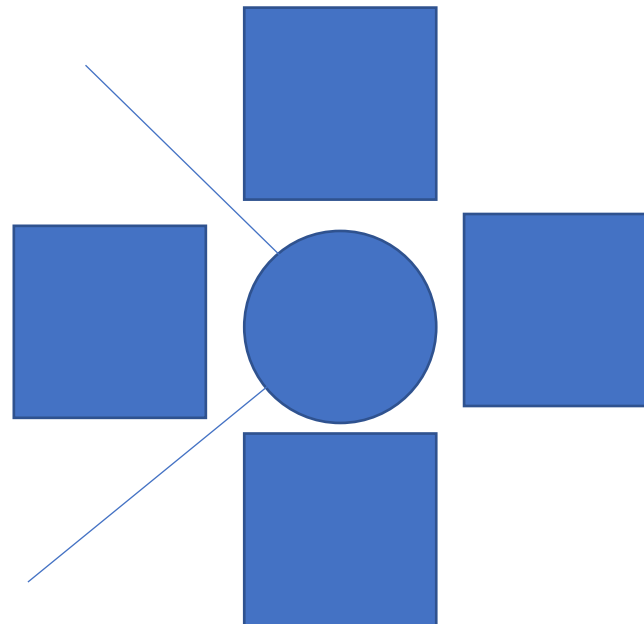
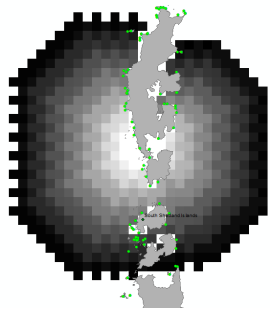
Pew Antarctica analysis and output update – June 2020:

- Delineating mIBAs
 - Originally, used method where we first identified colonies that were mIBAs, then created buffers around these colonies based on foraging radius approach.
- NOW, will use min, max, median, recent count estimates to derive density distribution around colonies (following similar approach in Critchley et al. 2018)
 - Code: [IBA_ColonyClusters_JH25](#)
 - Mean max distance file to use around colonies: **MaxDist_FR_summary_forR.csv** (also see code: [ForagingRadius_MaxEstimates](#))

Pew Antarctica analysis and output update – June 2020:

- Original code: [IBA_ColonyClusters_JH25](#)
 - Following comment from Jefferson Hinke about double counting
 - And Collin Southwell about why don't we put a 60 deg buffer on,
 - I need to revise code especially for sites on small islands!
 - See next slide

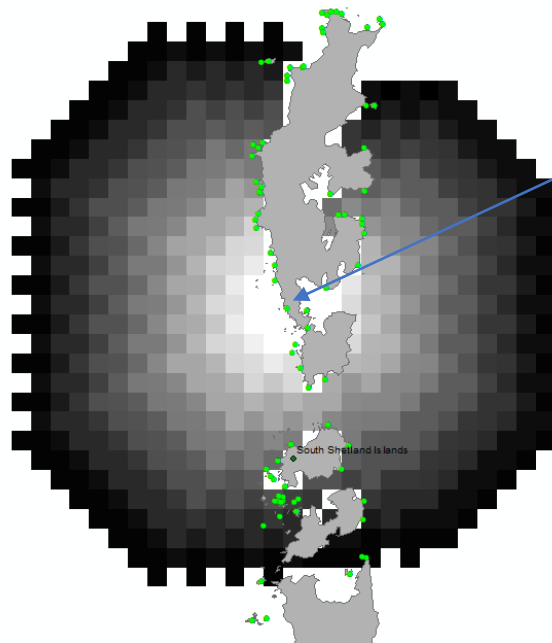
Without a directional buffer



Pew Antarctica analysis and output update – June 2020:

- Original code: [IBA_ColonyClusters_JH25](#)

Without a directional buffer



Colony from which
foraging radius was
applied

In reality, it's very
unlikely that birds
would swim
around the island!

Therefore, need
some sort of
directional
component!!

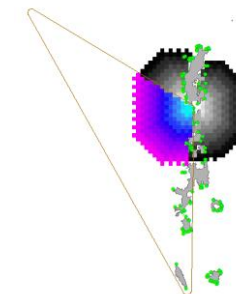
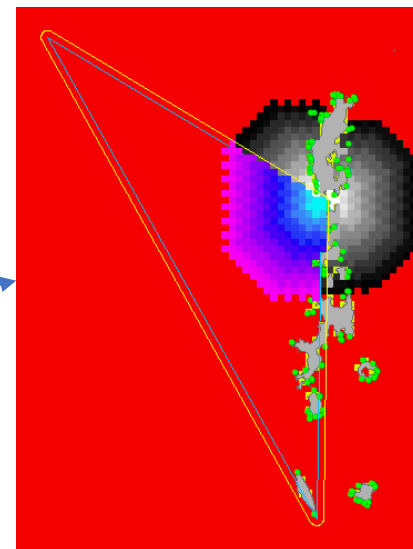
See script: [IBA2_ColonyClusters_JH5](#)

And ArcMap File: [Col_Locs_Revise_AndBearing_Test](#)

In ArcMap file I am revising colony locations so that they overlap land where they do not. Did not do this because arcmap kept crashing!

Back in the R script I might try to figure bearing to closest land boundary. Did not do this because too many colony locations just seemed a little off the land of the shapefile I had. And arcmap was too slow and kept crashing!

Instead, manually estimated bearing for colonies



See key updated required
owing to Heather Lynch email
on 15 June 2020