TO DO:

* For a subset of common park-species, provide graphs that show abundance & CI estimates per year using:
  + glmmTMB (relative abundance)— single vs repeat visits [using ALL data; allows RE of site for calc of trend]
  + stan\_pcount (superpopulation) [using ALL data—requires repeat visits; allows RE of site for calc of trend]
  + gdistsamp w/in 100m [requires repeat visits--use the repeat visits to estimate phi, the probability of being available for detection] single vs repeat visits
* For JELA & PAAL, plots-by-loc showing % of detections in last distance bin (and show for all parks actually)
* Summary table of other IMD bird trend analyses
* Table of which park-species we can do distance sampling estimates on
* Plots showing distance functions for common species, to see if VICK has consistent difference

QUESTIONS:

* gDistsamp gives options to calculate density, but how can it do that when it’s calculating the superpopulation so we don’t actually know the area covered? I THINK THE ANSWER IS HERE: “If availability is a function of both temporary emigration and other processess such as song rate, then density cannot be directly estimated, but inference about the super-population size, M(i), is possible.”[ASK JOSH B/C NMIXTURE EXAMPLES PRESENT DENSITY ESTIMATES FOR BIRDS…]

POINTS TO MAKE:

* -Distance bins are too few and coarse, too many are in the last bin, some have problems with nearest bin, not recording visual/sound detection (these can be cleaned up and may give estimates for a few species). Even fixing these things does not guarantee good estimates b/c mixture of habitat types within points (Chris Ray’s forests are much more homogeneous)
* -Bigger issue is broader problem w/ detection from point count protocols for removal and distance—for most species not going to have enough species. Trying to correct for detection is so noisy is that it actually increases noise in the estimate. What CAN be done w/this protocol is glmm, which will give a trend and the issue with the park is they don’t know if the trend is in # of birds or in detection probability
* - I’ve now run it by experts and they agree that it rarely works (distance sampling) and also that for this type of protocol for most species you can only get relative abundance. Name the people who attended. They all agreed on these problems and also agreed that based on what they are doing in other places, even fixing that you are only going to get decent trends for a few species. Josh says for N-mixture, with 2 surveys it’s really unstable and in AK they are doing 4-6 surveys.