CBC Manuscript

Provide a prototype for future papers for FFN that use citizen science data to address both local and regional population issues.

Example we use is the Gainesville CBC, which has been running for a very long time in roughly the same way in an area in which wetland habitats have changed greatly but terrestrial habitats have changed much less other than a steady loss of habitat (especially agricultural and longleaf pine) and a huge increase in birdfeeding.

But still faced with the challenges of having vast increases in both party hours and the skills of the birdwatchers and the methods used to detect birds such as owl tapes.

Also evaluate the possibility that increasing populations are difficult to interpret but any decreases are likely to be even more extreme than indicated EXCEPT for many waterbirds and obvious species such as raptors where there is a finite number in the CBC area, that are easy to detect, are highly localized, and that may seem to be declining when calculated as birds per party hour but are actually not declining

We address several questions specifically using Gainesville CBC data:

1. Have populations and diversity of species that primarily winter in the Neotropics increased with global and local warming? (SUTA, YBCH, BTBW, BGNW, NAWA, LEFL, ATFL, AMRE, WIWA, RTHU, RUHU, BCHU, EWPW, VASW, VEFL. GCFL, YTVI, TRSW?, WOTH, CMWA, OVEN, WEWA, LOWA, NOWA, BWWA, KEWA, HOWA, NOPA, CSWA, MAWA, PRAW, WETA, DICK, RBGR, BHGR, INBU, PABU, BAOR)
   1. **Please clarify:**
      1. **BGNW (did you mean black-throated green warbler?)**
      2. **TRSW (tree swallow?)**
   2. **Do you want to add any of the following (based on a previous list we had)**
      1. **# "Blackburnian Warbler",**
      2. **# "Blue Winged Warbler",**
      3. **# "Brown Crested Flycatcher",**
      4. **# "Bullock'S Oriole",**
      5. **Eastern kingbird**
      6. **Least flycatcher**
      7. **Orchard oriole**
      8. **Tennessee warbker**
      9. **Yellow warbler**
      10. **Western kingbird**
2. Have short-distance migrants that primarily winter in the southern temperate zone decreased with global warming? (WTSP, HETH, WIWR, SACR, AMWO, NOHA, BRCR, GCKI, PUFI, DEJU, PISI, EATO, VESP, SOSP, FOSP, WCSP, RUBL, RWBL?, COGR?, RBNU)
   1. **Please clarify**
      1. **DEJU – Dark-eyed junco?**
3. How have regional endemic residents fared? (BHNU, BASP, RCWO)?
   1. **Please clarify**
      1. **BASP – Bachman’s Sparrow?**
4. How have species experiencing widespread declines fared? (NOBO, FISP, NOFL, COGD, LOSH, RHWO, BRTH, GRSP, HESP, EAME)
   1. **Please clarify**
      1. **NOFL - ???**
5. How have invasives/introduced species fared (RODO, EUST, ECDO, HOFI,HOSP, BBWD?, MUDU, EGGO, MALL)
   1. **Please clarify**
      1. **EGGO – ???**
      2. **MUDU – ???**
6. How have species fared for which north Florida is right in the center of their winter distributions? (MODO, BAWW?, BHVI, RCKI, BGGN, WISN, KILL, BEKI, RBWO, YBSA, DOWO, EAPH, WEVI, BLJA, AMCR, FICR, TUTI, CACH, HOWR, CAWR, SEWR, EABL, AMRO?, GRCA, BRTH, CEWX, AMGO, OCWA?, COYE, YRWA, PIWA, YTWA?, PAWA, NOMO, CHSP, SWSP, NOCA, BHCO)
7. How have species that have recovered from DDT fared? (DCCO, OSPR, BAEA, COHA, SSHA, RSHA, PEFA, MERL)
   1. **Please clarify**
      1. **CEWX – Cedar waxwing?**
      2. **WISN -- ???**
      3. **PAWA – palm warblers?**
8. How have species fared with respect to Sweetwater (LIMP, SNKI, SORA, KIRA, VIRA, AMBI, LEBI, BWTE, NOSH, COGA, PUGA, ANH, DCCO, TRSW, ALL HERONS IBISES, STORKS, MAWR)
9. How have urban adapters fared? (HOME, WITU, invasives[see above]), WODU, CAGO, MALL, RBGU, TUVU, BLVU, RSHA, BAOW, GHOW?, EASO?, PIWO, AMCR, FICR, BLJA, TUTI, CACH, CAWR, HOWR, BRTH, EUST, HOFI, EATO, COGD, NOMO, CHSP, NOCA, COGR?, BTGR, BHCO)
   1. **Please clarify:**
      1. **NOSH -- ???**
      2. **COGA – Common Gallinule? Or Com Grackle?**
      3. **CHSP—Chipping sparrow?**
10. How have species been affected by the loss of agricultural land? (RTHA, LOSH, KILL, MODO, BAOW, MAKE, BRTH, HOSP, AMPI, COGD, NOMO, FISP, VESP, GRSP, HESP, SEWR, SASP, EAME, COGR?, BTGR?)
    1. **Please clarify**
       1. **MAKE === American Kestrel**
       2. **SASP -- ???**
11. Birds that are attracted to LOCAL bird feeders (CACH, TUTI, CHSP, RBWO, DODO, NOCA, RBNU, INBU, PABU, RBGR, PISI, MODO, YTWA, CAWR, BAOR, AMGO, BHCO, BLJA, AMCR, HOFI, SSHA, COHA)
    1. **Please clarify**
       1. **DODO - ??**

I know the analysis gets complicated here because many species fit in several categories.