Madison Bee Communities

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January 9, 2019

Bee Community Data

This report includes the statistical analyses used to understand the influence of landscape composition and land use history on bee community diversity across a rapidly-growing midwestern american city. Bees sampled in passive traps known as bee bowls six times across the City of Madison in 2013.

```
setwd("~/Desktop/MadBees")
MadBees<-read.csv("MadBeesBeeBowlsFinal.csv")
xy<-read.csv("xy.csv")
names(MadBees)
```

```
##  [1] "X.1"           "Site"          "SampleID"      "Sex"
##  [5] "Family"        "Morphospecies" "X"             "Size"
##  [9] "Habitat"       "Period"        "SiteID"
```

Data summary

The unique bee species identified in the samples include:

```
##  [1] Agapostemon sericeus            Agapostemon virescens
##  [3] Andrena bisalicis               Andrena crataegi
##  [5] Andrena erythronii              Andrena medium/sm unk sp
##  [7] Andrena milwaukensis            Andrena nasonii
##  [9] Andrena nigrae                  Andrena nuda
## [11] Andrena phaceliae               Andrena wellesleyana
## [13] Anthidium maculifrons           Anthidium manicatum
## [15] Anthidium oblongatum            Apis mellifera
## [17] Augochlorella aurata            Augochlorella persimilis
## [19] Augochlorella sp.               Augochloropsis fulgada/metallica
## [21] Bombus affinis                  Bombus bimaculatus
## [23] Bombus fervidus                 Bombus griseocollis
## [25] Bombus impatience               Bombus rufosphinctus
## [27] Bombus sandersoni               Ceratina calcarata
## [29] Ceratina dupla                  Ceratina mikmaqi
## [31] Ceratina strenua                Coelioxys spp
## [33] Colletes spp.                   Eucera atriventris
## [35] Florilegus condiginus           Halictus confusus
## [37] Halictus ligatus                Halictus parallelus
## [39] Halictus rubicundus             Hylaeus affinus
## [41] Hylaeus annulatus               Hylaeus floridanus
## [43] Hylaeus mesillae                Hylaeus rudbeckiae
## [45] Hylaeus unk sp.                 Lasioglossum albepenne
## [47] Lasioglossum anomalum           Lasioglossum atwoodi
## [49] Lasioglossum bruneri            Lasioglossum cattelae
## [51] Lasioglossum coeruleum          Lasioglossum coreopsis
## [53] Lasioglossum coriaceum          Lasioglossum cressonii
## [55] Lasioglossum curculum           Lasioglossum divergens
```

```
## [57] Lasioglossum egregium           Lasioglossum ellisiae
## [59] Lasioglossum hartii             Lasioglossum illinoense
## [61] Lasioglossum imatatum           Lasioglossum leucozonium
## [63] Lasioglossum lineatulum         Lasioglossum macoupinense
## [65] Lasioglossum michiganense       Lasioglossum nigroviride
## [67] Lasioglossum nymphaearum        Lasioglossum obscurum
## [69] Lasioglossum paraforbesii       Lasioglossum pilosum
## [71] Lasioglossum platatum           Lasioglossum pruinosum
## [73] Lasioglossum smilacinae         Lasioglossum spp.
## [75] Lasioglossum taylorae           Lasioglossum tegulare
## [77] Lasioglossum timothyi           Lasioglossum versans
## [79] Lasioglossum weemsi             Lasioglossum zephyrum
## [81] Lasioglossum zonulum            Megachile latimanus
## [83] Megachile melanophoea           Megachile mendica
## [85] Megachile relativa              Melissodes agilis
## [87] Melissodes bimaculatus          Melissodes boltonae
## [89] Melissodes dentiventris         Melissodes druriellus
## [91] Melissodes rustica              Melissodes tinctus
## [93] Melissodes trinodis             Osmia sp
## [95] Sphecodes spp.                  Stelis louisae
## [97] Stelis nitida                   Unk. Bee - partial specimen
## 98 Levels: Agapostemon sericeus ... Unk. Bee - partial specimen
```

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.