Most important question:

**Is there a difference between a non-native cool season grassland (NNCSG) and a non native cool season grass transition to native pollinator habitat (NNCSG -> NPH)\* in terms of vegetative resources (habitat) for monarchs/pollinators two and three years after NPH establishment?**

**\*(NNCSG -> NPH): residue removed (mowing, baling, burning), 1-2 applications of glyphosate in late summer/fall, pollinator seed mix planted, mowed 3 times first growing season**

Sites to exclude from analysis:

* sie1, uth1, uth2: not planted
* fis1: not enough site prep count as planted

**Inflorescence – ANOVA with #1 density as response** (#2 common milkweed, swamp milkweed, butterfly milkweed density as response)

* 2016 vs 2018
* 2016 vs 2019

Possible Factors

* Round (possibly, look at nesting)
* Planted/non planted
* Year
* Grant
* ~future: a grouping by previous mowing history, native status, previous vegetation type?

**Inflorescence richness (#1 total number of species which bloomed in a year) – ANOVA with richness as response**

* 2016 vs 2018
* 2016 vs 2019

Possible Factors

* Round (possibly, look at nesting)
* Planted/non planted
* Year
* Grant
* ~future: a grouping by previous mowing history, native status, previous vegetation type?

**% cover change: CSG, forbs, milkweed (could include any of the cover classes but these are most important) – ANOVA with cover class as response**

* 2016 vs 2018
* 2016 vs 2019

Possible Factors

* Class
* Year
* Grant
* ~future: a grouping by previous mowing history, native status, previous vegetation type?

**Milkweed ramet density for each of three species from nectar?**

* Only have data for 2017 and on for milkweed ramets so can’t make before/after points but could show changes over time. Not necessary to include round as factor.
  + Ramets were counted by species ‘common milkweed ramet’ ‘swamp milkweed ramet’ ‘butterfly milkweed ramet’

Jarad’s notes from 17 July 2019 meeting with Seth and Steve

Final report for each of 4 grants:

* Pork
* Soy
* Cig (IACIG)
* National Cig (NCIG)

2016 is baseline: Milkweed, (blooming) forbs

Response variables

* Flowering vegetation (nectar):
  + sum counts,
  + richness,
  + diversity?
* Milkweed ramets:
  + use ramet (not blooming) to look at milkweed (no 2016)
  + use cover (small area) classes
  + use nectar to look at all milkweed
* Daubenmire
  + Cover data set by class
  + Litter data set
  + Robel: average across direction and then average the site/round
* Monarch (2016 is different)
  + Use monarch data set and any instar (larvae)
  + Use monarch data set with eggs
  + Possibly different instar types
  + Monarch adult analysis
* Bee by type (species in bee data)
  + Analyze count

Questions:

1. How have these responses changed across the years?
2. How do these response compare across the different kinds of sites?
3. How does the nectar/flowering species change within a year?
4. Exploratory PCA on correlation including all responses summarized by year-site
5. How do the site groupings (funding) compare across these different analyses?