

Tallgrass Prairie Restoration Legacies, Summary

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Packages and Libraries

```
packages_needed = c("tidyverse",  
                    "png",  
                    "knitr",  
                    "conflicted")  
packages_installed = packages_needed %in% rownames(installed.packages())
```

```
if (any(!packages_installed)) {  
  install.packages(packages_needed[!packages_installed])  
}
```

```
for (i in 1:length(packages_needed)) {  
  library(packages_needed[i], character.only = T)  
}
```

```
conflict_prefer("filter", "dplyr")  
conflict_prefer("select", "dplyr")
```

Data

For this summary, I'll pull as many objects as possible from existing files to reduce the number of interspersed code chunks. A few quick new analyses will be necessary, though. Data are loaded here.

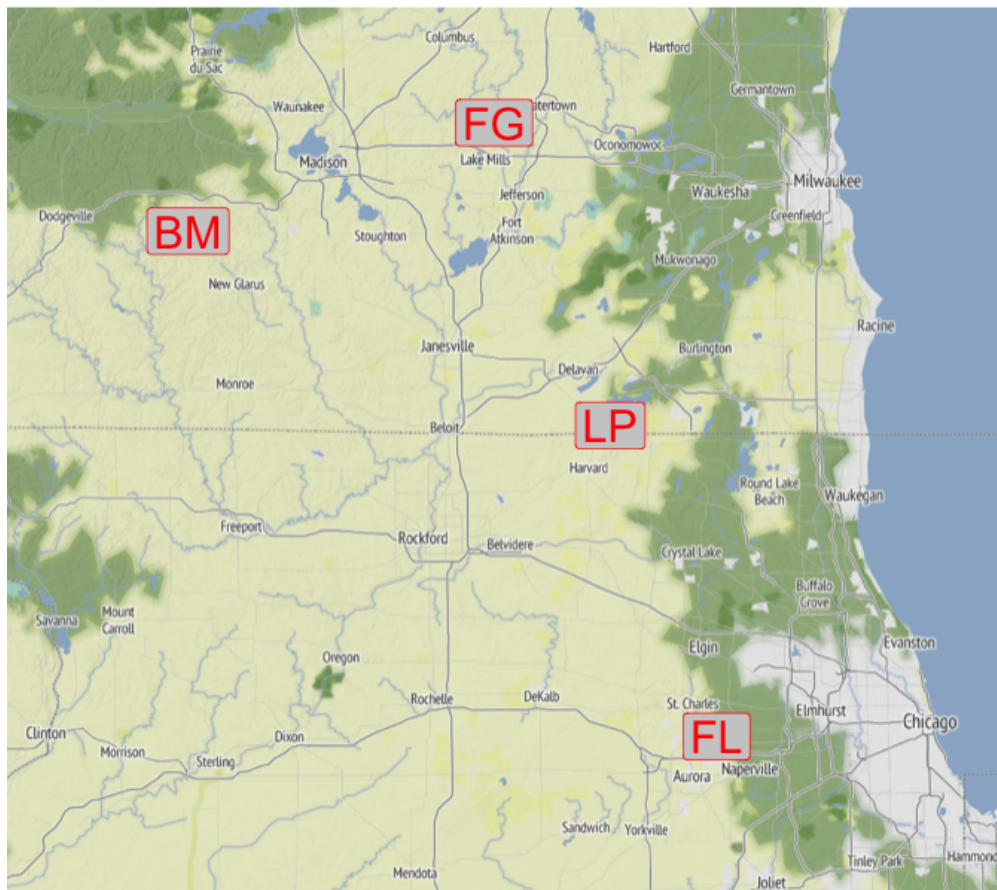
```

sites <-
  read_csv(paste0(getwd(), "/clean_data/sites.csv"), show_col_types = FALSE) %>%
  mutate(
    field_type = factor(
      field_type,
      ordered = TRUE,
      levels = c("corn", "restored", "remnant")),
    yr_since = replace(yr_since, which(field_type == "remnant"), NA),
    yr_since = replace(yr_since, which(field_type == "corn"), NA)) %>%
  select(-lat, -long, -yr_restore, -yr_rank) %>%
  arrange(field_key)

```

Methods

The survey followed an unbalanced complete block design. I have called blocks “regions” so far. We collected samples and data from four regions, shown on the map below.



The data are unbalanced because there are more restored fields than corn or remnant. In all but one case, only single corn and remnant fields were available in each region. This means that we only have replication to separate field types when using the entire block design.

```
kable(table(sites$region, sites$field_type),
  format = "pandoc",
  caption = "Count of fields by type and region:\nBM = Blue Mounds, FG = Faville Grove,\nFL = Fermi.
```

Table 1: Count of fields by type and region: BM = Blue Mounds,
FG = Faville Grove, FL = Fermilab, LP = Lake Petite

	corn	restored	remnant
BM	1	7	1
FG	1	1	1
FL	2	6	1
LP	1	2	1