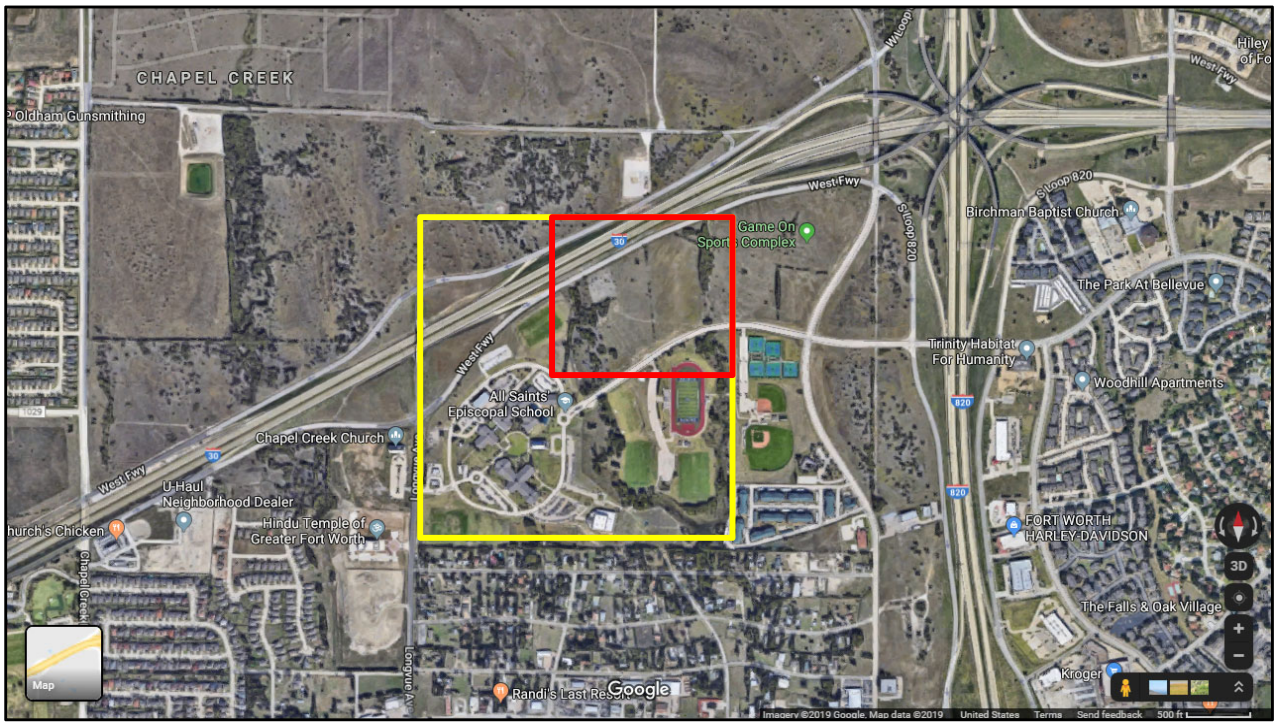
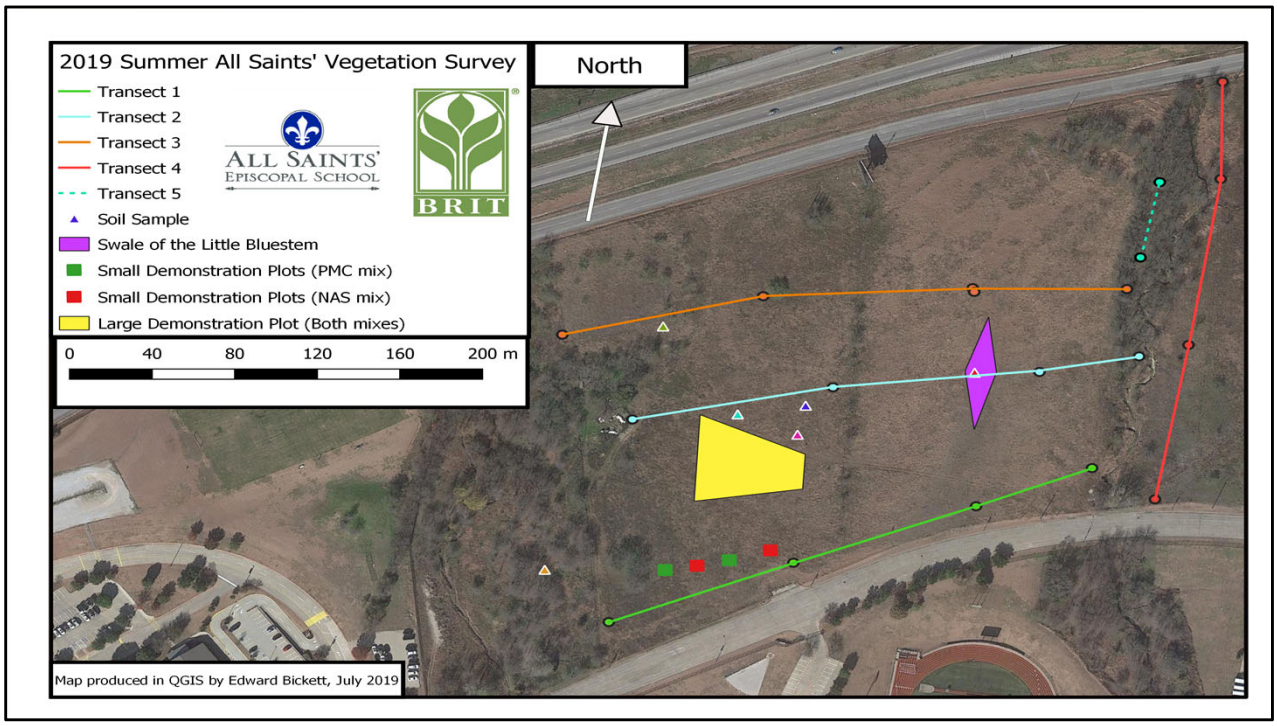
2019 Summer All Saints' Vegetation Survey

Edward Bickett

Purpose of Project

- The overarching purpose of this project is long term restoration of natural Texas prairie from a grazing pasture.
- It monitors restoration success through looking at species richness and cover, while taking into account previous land usage.


CHAPEL CREEK
Oldham Gunsmithing
West Fwy
S Loop 820
Birchman Baptist Church
Game On Sports Complex
The Park At Bellevue
Trinity Habitat For Humanity
Woodhill Apartments
All Saints' Episcopal School
Chapel Creek Church
U-Haul Neighborhood Dealer
Hindu Temple of Greater Fort Worth
FORT WORTH HARLEY-DAVIDSON
The Falls & Oak Village
Kroger
Randi's Last Resort
Longvue Ave
Chapel Creek
Map
3D
Google
Imagery ©2019 Google, Map data ©2019 United States Terms Send feedback 500 ft



PMC = Plant Material Center
NAS = Native American Seed

These were seed mixtures provided by USDA and the Native American Seed company. They were chosen to be established for a long term experimental data collection in a previous growth cycle.

Transects 1, 2, 3 were established last year
Transects 4, 5 were established this summer

Methods

- The methods used to gather data was following established and new transects across the field.
- Three transects (Transect 1,2,3) were plotted last year and two (transect 4,5) were completed this year.
- On these transects every ten meters a 1m by 1m square was laid down and the percentage of total herbaceous cover was determined (total and by species), along with litter, bare ground and shrub cover. Plant species were also identified at this time.
- To find the percentage of Woody cover, a larger 10m by 10m square was measured, and then the same procedure was followed.

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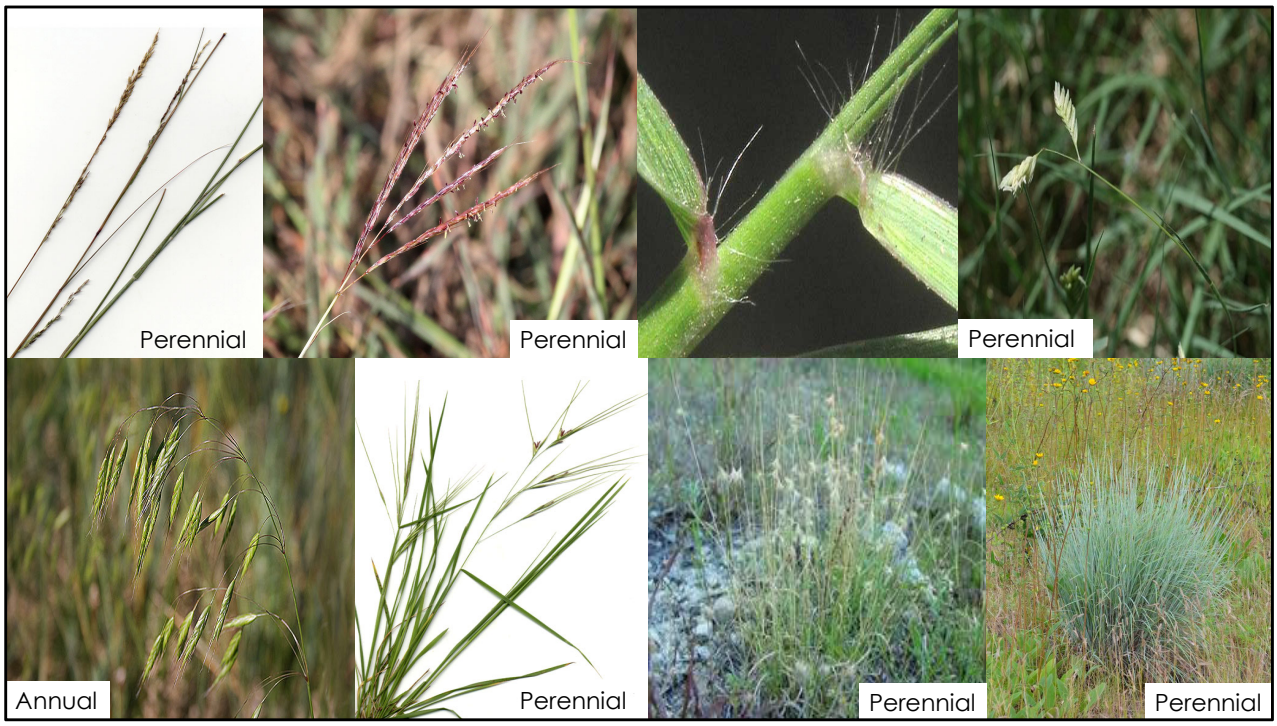
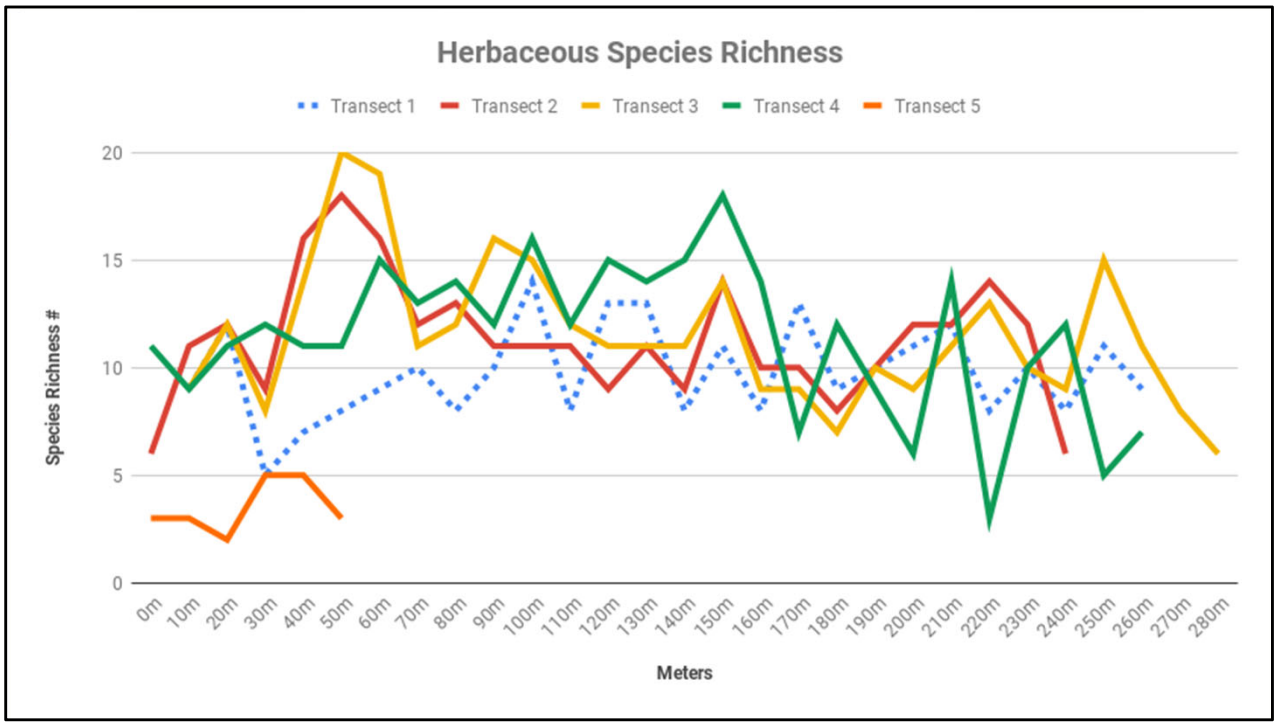


80 total grass and forb species of plant in total.

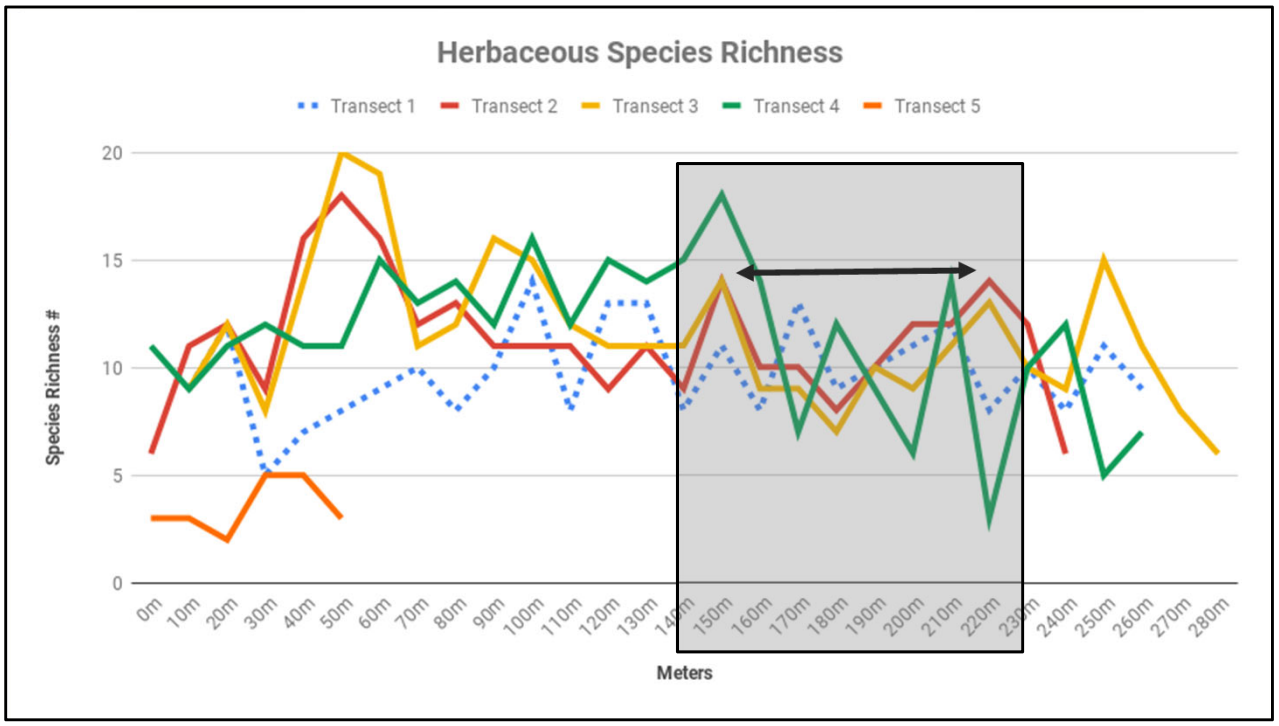
Meadow Dropseed – *Sporobolus compositus*
King Ranch Bluestem- *Bothriochloa ischaemum*
Buffalo Grass- *Bouteloua dactyloides*
Japanese Brome- *Bromus japonicas*
Texas Wintergrass- *Nassella leucotricha*
Texas Grama- *Bouteloua rigidiseta*
Little Bluestem-*Schizachyrium scoparium*

Curly-cup gumweed- *Grindelia lanceolata*
Western Ragweed- *Ambrosia psilostachya*
Lemon Bee Balm- *Monarda citriodora*
Prairie Bishop- *Bifora americana*
Beggar's Lice- *Torilis arvensis*
Heath aster- *Symphyotrichum ericoides*

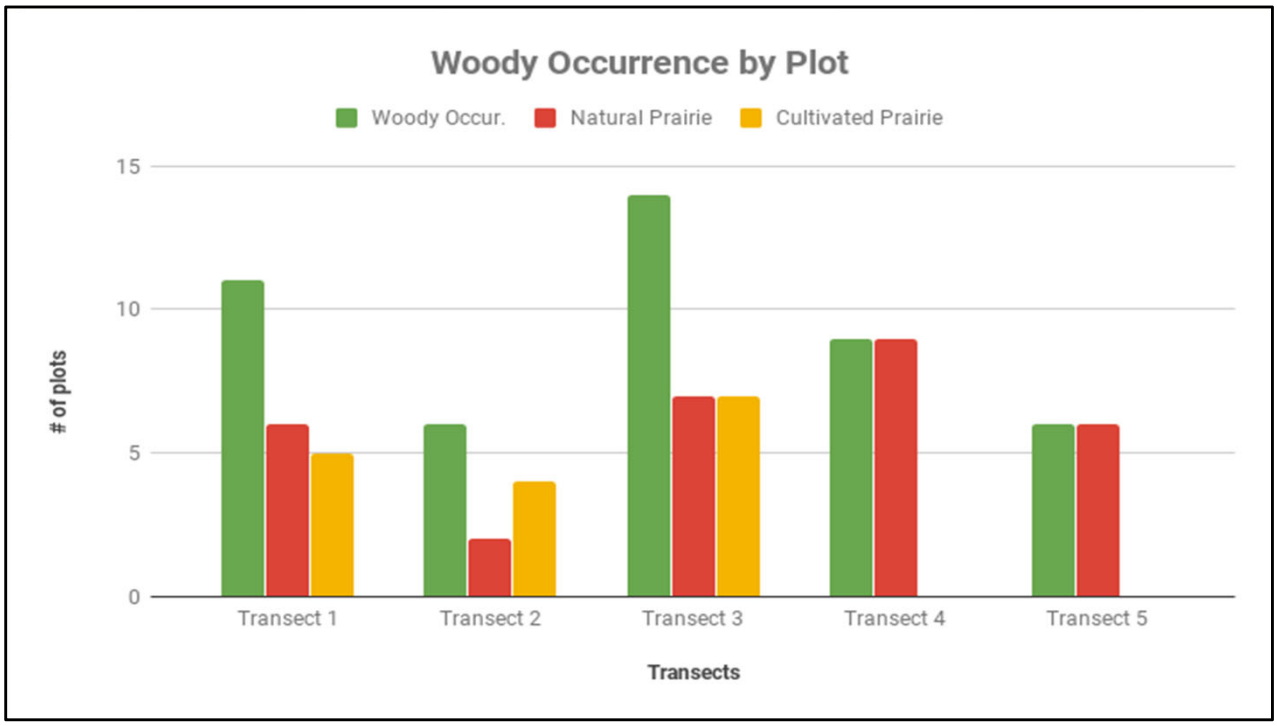


Species Richness is diversity of species. This graph shows the number of species by plot within each transect. Transect 3 and 4 had the most consistently high level of diversity, I hypothesize that this is so because of their location. Transect 4 was located beyond a creek bed, and was undisturbed. Transect 3 was located in the northernmost portion of the field and thus had a lot of blow in from the highway and the construction that occurred by the highway.

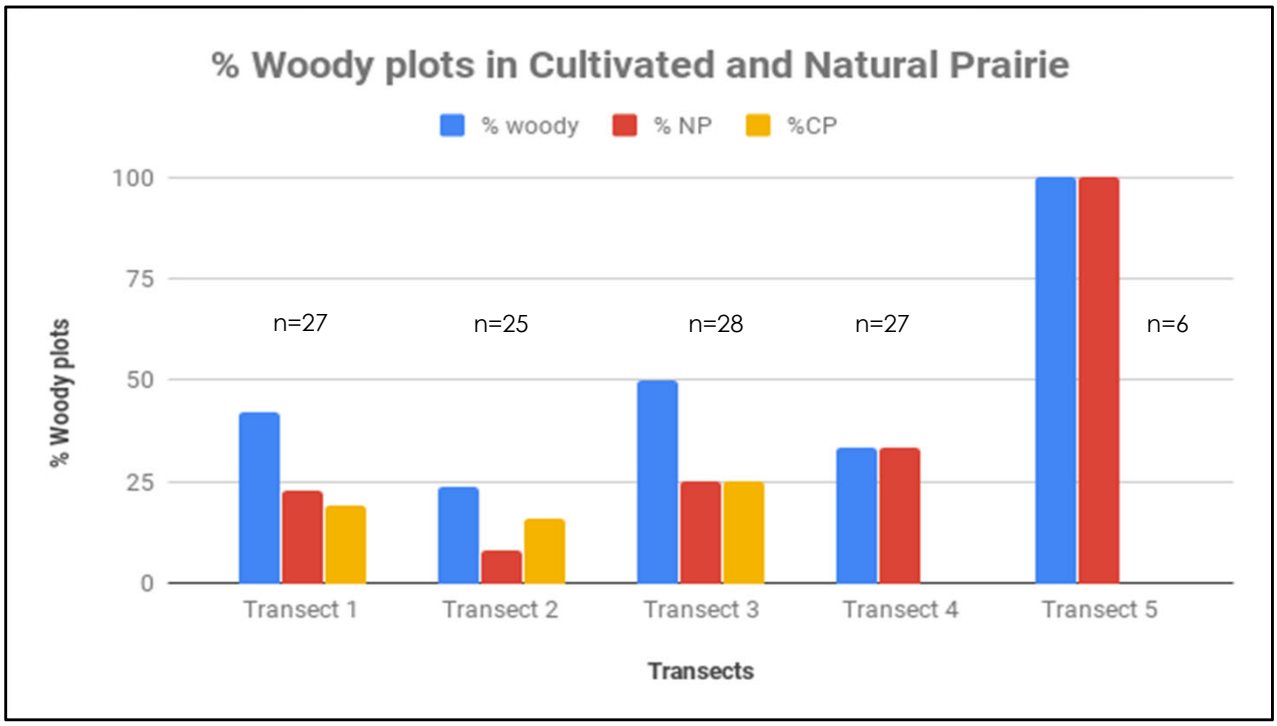
Transect 5 on the other hand had the smallest number of species richness because it was located under heavy shade (Under treeline) thus limiting light and the overall amount of species.



On this slide is the same graph with the exception that points 140 - 230 have been highlighted. This area is pertinent because of Transect 2 and 3 having almost the exact same levels of richness. This area was located in the cultivated field which had differing levels of diversity because of the overwhelming level of King Ranch Bluestem that had invaded the area. The close tracking of the data could also be attributed to the fact the two transects are located next to each other.



This graph shows the absolute number of plots which had woody occurrence. While this is useful it does not give an accurate representation of the data comparison like the next one…



This updated woody plot graph shows the woody plots as a percentage relative to each other. The difference is apparent as transect 5 has skyrocketed whereas the others have been diminished. This gives a more accurate representation of the data for comparison because of the different lengths of the transects.

For reference, the total number of plots is 123, and it took 3-4 weeks to complete during the month of June.

Conclusion

- Many of the vegetation at the site is seasonal, thus the vegetation survey will differ. This has an effect of the growth patterns and overall species richness.
- Going forward into the future with this project I would put a more heavy emphasis on the differing soil strata within this field, and how that effects what species grows on top of it.
- A full report on the soil which lies beneath will complete the picture that the survey paints and will help predict what plants will grow there.
- Finally I would like to thank all the people who helped me complete this project, especially **Chuck King**, **Erin Flinchbaugh**, and special thanks to **Becky Grimmer** with All Saints' who allowed the project to happen. Also thanks to **Tiana and Co**. that came out and helped collect specimens for the Herbarium.

Favorite part of the project for me would be the being out in the heat doing fieldwork and identifying plants.

Herbaceous picture sources

Red for grasses, Blue for forbs

- https://www.wildflower.org/gallery/result.php?id_image=28153
- https://www.flickr.com/photos/71649753@N07/22044773525/
- https://www.backyardnature.net/n/h/kingblue.htm
- https://www.illinoiswildflowers.info/grasses/plants/buffalo_grass.htm
- http://www.easterncoloradowildflowers.com/Bromus_japonicus.htm
- https://www.wildflower.org/gallery/result.php?id_image=28164 wintergrass
- https://www.wildflower.org/plants/result.php?id_plant=BORI
- https://www.prairiemoon.com/schizachyrium-scoparium-little-bluestem-prairie-moon-nursery.html

- http://swbiodiversity.org/seinet/taxa/index.php?taxon=9385
- https://www.minnesotawildflowers.info/flower/gumweed
- https://www.brc.ac.uk/plantatlas/plant/torilis-arvensis
- https://davesgarden.com/guides/pf/go/133846/#b
- https://www.everwilde.com/store/Monarda-citriodora-WildFlower-Seed.html
- https://wnmu.edu/academic/nspages/gilaflora/symphyotrichum_ericoides.html