

# 2017 Pollinator Plantings

By Karli Becher and Ben Montgomery, Ronan NRCS Field Office

February 2018

**Objective:** Establish Pollinator Habitat and Improve Species Selection

**County:** Lake

**Average annual Lake Co. precipitation:** 13-14"

**Dominant Soil Type:** Mixed, but generally SiCL soils

**Elevation:** 3000 ft

**Site Preparation:** Varied, poor to average; very few well-prepared sites

**Planting Date:** March - May, 2017

**Seeding Method:** Broadcast

**Acres Seeded:** 5 acres, ~100 ≤ 2,500 sq. ft plots

**Previous Site History:** Varied, generally pastureland

**Herbicide:** Varied, some sites used herbicide, others did not

**Irrigation:** Most dryland, some received supplemental irrigation

**Grazing:** Wildlife only

**Monitoring Dates:** July - August 2017



Fig 1. Petal detectors.

## Introduction:

The Lake County Pollinator Initiative began in the Spring of 2017. With a cooperative effort between the Lake County Conservation District (LCCD) and the NRCS Ronan Field office pollinator seed was provided to county residents and schools in the county for plots of up to 2,500 ft<sup>2</sup>. The goals are to 1.) Increase pollinator habitat in Lake County 2.) Test species for establishment success in order to refine future recommendations. The 2017 mix contained 18 flowering forbs and 7 flowering legumes. The mix also included several annual pollinator-friendly forbs. Following monitoring in late summer 2017 the mix was then revised to remove species that did not establish and substitute new species to test.

## Results:

Over 100 plots, summing to a total of 5 acres were established. In total 15 of the 23 species were present during monitoring. While monitoring species establishment was rated as "none, poor, good or excellent." Sites receiving supplemental irrigation were monitored separately from dryland sites.



Fig 2. Pollinator plants in a garden.



Fig 3. Rocky mountain beeplant.

Table 1. Mix used in Spring 2017.

| Common Name               | Scientific Name                     | Seeding Rate in Mix |
|---------------------------|-------------------------------------|---------------------|
| Purple prairie clover     | <i>Dalea purpurea</i>               | 0.78                |
| White prairie clover      | <i>Dalea candida</i>                | 1.32                |
| Sanfoin                   | <i>Onobrychis</i>                   | 0.61                |
| Birdsfoot trefoil         | <i>Lotus corniculatus</i>           | 2.77                |
| Cicer milkvetch           | <i>Astragalus cicer</i>             | 0.96                |
| Yellow prairie coneflower | <i>Ratibida columnifera</i>         | 5.60                |
| Rocky mtn beeplant        | <i>Cleome serrulata</i>             | 0.48                |
| Western yarrow            | <i>Achillea millefolium</i>         | 7.14                |
| Lewis flax                | <i>Linum lewisii</i>                | 1.91                |
| Indian blanket flower     | <i>Gaillardia pulchella</i>         | 2.24                |
| Arrowleaf balsamroot      | <i>Balsamorhiza sagittata</i>       | 0.21                |
| Mexican hat               | <i>Ratibida columnifera</i>         | 5.60                |
| Scarlet globemallow       | <i>Sphaeralcea coccinea</i>         | 0.84                |
| Small burnet              | <i>Sanguisorba minor</i>            | 1.46                |
| Black samspon             | <i>Echinacea angustifolia</i>       | 0.12                |
| Beebalm                   | <i>Monarda</i>                      | 2.38                |
| Prairie aster             | <i>Machaeranthera tanacetifolia</i> | 0.76                |
| Firecracker penstemon     | <i>Penstemon eatonii</i>            | 0.59                |
| Maximilian sunflower      | <i>Helianthus maximiliani</i>       | 0.93                |
| Native annual sunflower   | <i>Helianthus annuus</i>            | 0.59                |
| Phacelia                  | <i>Phacelia tanacetifolia</i>       | 4.35                |
| Oil seed sunflower        | <i>Helianthus annuus</i>            | 0.83                |
| Black-eyed susan          | <i>Rudbeckia hirta</i>              | 12.78               |



## 2017 Pollinator Plantings

**Table 2.** Evaluation summary of species.

| Species                      | Stand establishment |                 |
|------------------------------|---------------------|-----------------|
|                              | Non-Irrigated Sites | Irrigated Sites |
| Small burnet                 | Excellent           | Excellent       |
| Phacelia (annual)            | Excellent           | Excellent       |
| Cicer milkvetch              | Good                | Good            |
| Yellow prairie coneflower    | Good                | Poor            |
| Western yarrow               | Good                | Poor            |
| Lewis flax                   | Good                | Good            |
| Maximillian sunflower        | Good                | Good            |
| Oil seed sunflowers (annual) | Good                | Good            |
| White prairie clover         | Poor                | None            |
| Sanfoin                      | Poor                | Good            |
| Birdsfoot trefoil            | Poor                | Good            |
| Rocky mtn beeplant           | Poor                | Poor            |
| Indian Blanket Flower        | Poor                | Poor            |
| Mexican hat                  | Poor                | Poor            |
| Native annual sunflower      | Poor                | Good            |
| Purple prairie clover        | None                | None            |
| Arrowleaf balsamroot         | None                | None            |
| Scarlet globemallow          | None                | None            |
| Black sampson                | None                | None            |
| Beebalm                      | None                | None            |
| Prairie aster                | None                | None            |
| Firecracker penstemon        | None                | None            |
| Black-eyed susan             | None                | Poor            |



**Fig 3.** Lewis flax, western yarrow, and prairie coneflower.

### Summary & Discussion:

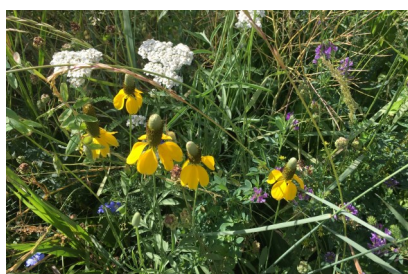
As can be expected with an initiative such as this, site conditions and site preparation varied greatly between plots. Sites with less vegetative competition had better establishment than those without quality site preparation. A primary goal of this project is to find forbs that establish and compete in difficult environments under 'real-life' scenarios. It is unrealistic to expect most landowner to have extremely well-prepared site and we must find species that can thrive under difficult conditions.

### Future:

This initiative will continue in 2018 with a 'new and improved seed mix'. Species that fail to establish will be removed and replaced with new test species.

### New Mix, 2018:

Six species that did not establish in 2017 were removed: arrowleaf balsamroot, scarlet globemallow, black sampson, beebalm, and firecracker penstemon. These six species were replaced with those in Table 3.



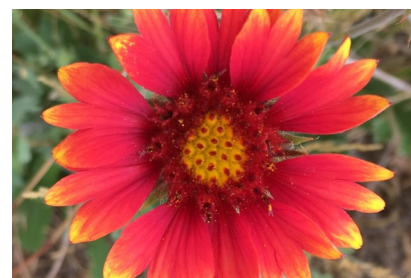
**Fig 4.** Coneflower, Yarrow and Blue Flax.



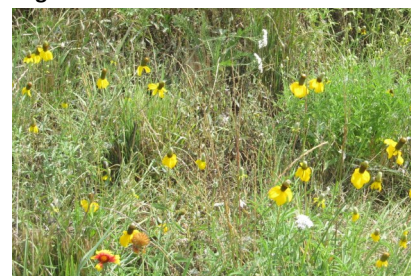
**Fig 5.** Annual Phacelia

**Table 3.** New species in mix.

| Common Name          | Scientific Name             |
|----------------------|-----------------------------|
| Northern sweetvetch  | <i>Hedysarum boreale</i>    |
| Palmer penstemon     | <i>Penstemon pameri</i>     |
| Rocky mnt penstemon  | <i>Penstemon strictus</i>   |
| Plains coreopsis     | <i>Coreopsis tinctoria</i>  |
| Lance-leaf coreopsis | <i>Coreopsis lanceolata</i> |
| Showy milkweed       | <i>Asclepias speciosa</i>   |
| Clarkia              | <i>Clarkia unguiculata</i>  |
| Deerhorn clarkia     | <i>Clarkia pulchella</i>    |
| Globe gilia          | <i>Gilia capitata</i>       |



**Fig 6.** Indian blanket flower.



**Fig 7.** Coneflower & Indian blanket flower.