The Intentional & the Accidental:
The Role of Cultivated and Uncultivated Flowers in Supporting Plant Diversity and Insect Abundance on Farms.

Stars of the Meadow Report

Farmer-Ecologist Research Circle
Feb. 2026

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& Conrad Vispo (insects, conrad@hawthornevalleyfarm.org)

Farm Description

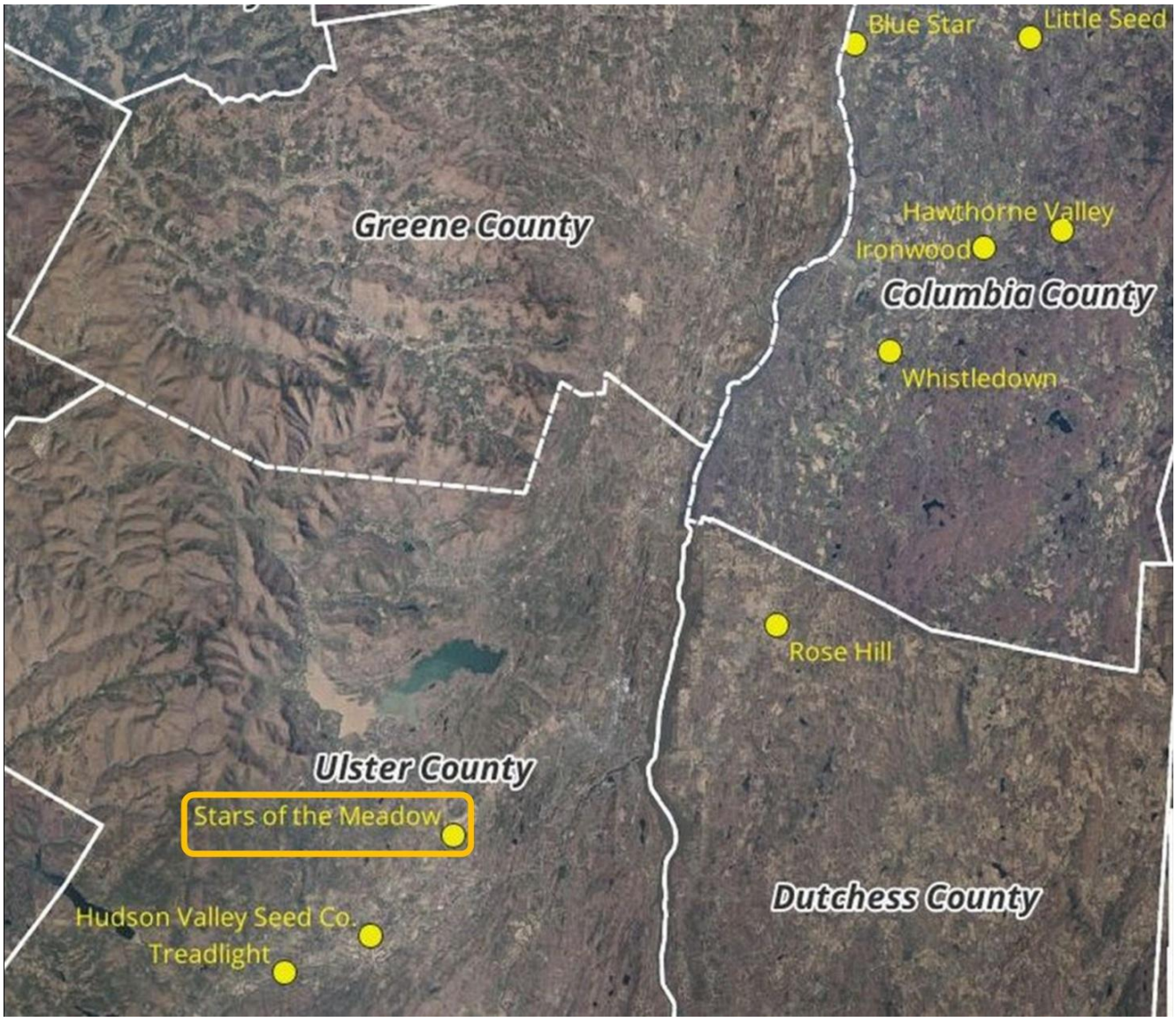


Figure 1. Stars of the Meadow is located in Ulster County.

Stars of the Meadow is a roughly 2 acre organic cut flower farm in Marbletown NY. Our study area was 1.5 acres (Fig. 2). The management regimes in our study area at Stars of the Meadow were more or less evenly distributed across cultivated flower, mature field edge, and wilds, with lesser amounts of bare ground/plastic, mature fallow and fenceline. The 'wild' area was infrequently mowed(?) but uncultivated ground adjacent to a small creek.

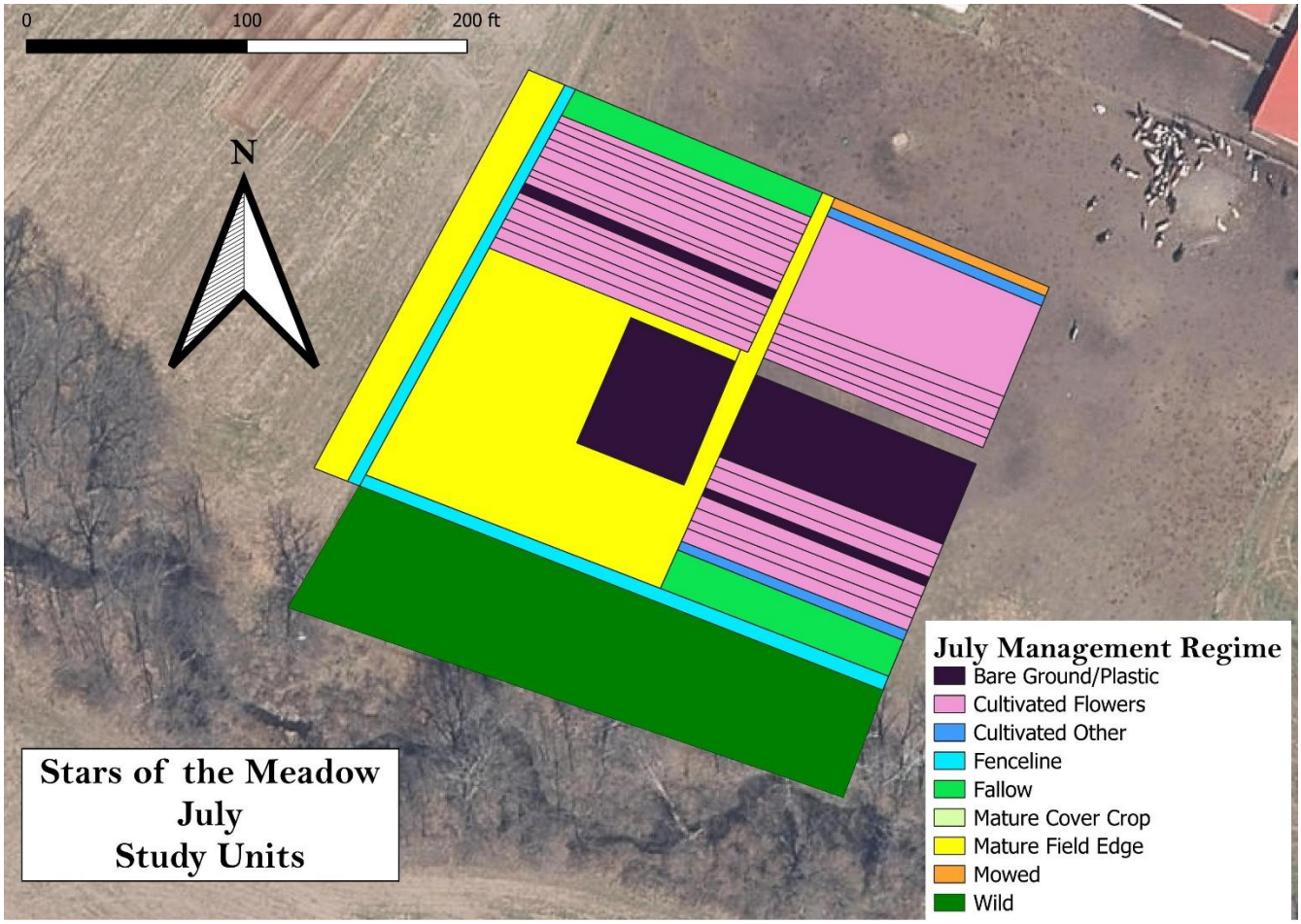


Figure 2. Generalized management regimes in the Stars of the Meadow survey units during July.

Botany

A total of 94 different flowers were found within the area studied at Stars of the Meadow (see Appendix). This number is somewhat low compared to that of the other farms in the study, in part because we were unable to fit the botanical inventory in June into our schedule. Therefore, the flower info from this farm is based on only two visits (and not three, as on all other farms) in 2025. In addition, please remember that this does NOT represent a full botanical inventory of the studied portion of this farm – it only includes those plants actually seen in flower during our three survey outings. The plant list in the Appendix includes all species we have observed in bloom in the survey units on July 22 ("July"), and Sept. 3 ("Aug/Sept"), 2025.

The list is organized alphabetically by common name. It also includes rows with (1) the scientific name of each species, (2) its native status (when known), (3) its regional rarity, (4) its ubiquity across the survey units at Stars of the Meadow during its flowering season, (5) duration of its observed flowering season at this farm, and (6) the specific months when it was observed flowering. Please see the caption of the Appendix for more details.

Several regionally rare/uncommon native plants had been planted and were flowering in the lightly-managed, “wild” area south of the fence along the stream corridor. This included Cardinal Flower, Great Blue Lobelia, Wild Bergamot, and Virginia Mountain Mint. In their vicinity, we also observed Canada Onion, which might have been wild-growing or also planted. Wild-growing Giant Ragweed was flowering in the mowed area and Clammy Ground-cherry in one of the flower beds in early September.

We found only eight flower species (9% of the total of 94 species) that were unique to Stars-of-the-Meadow and not observed at any of the other farms. Seven of these were cultivated, non-native flower species and one a wild-growing native.

Figure 3 shows the number of flowering species at Stars of the Meadow during our three monthly visits in 2025. The species were grouped into four categories: wild-growing, native species; wild-growing, non-native species and wild-growing species we were unable to identify with certainty as native; cultivated native species; and cultivated non-native species.

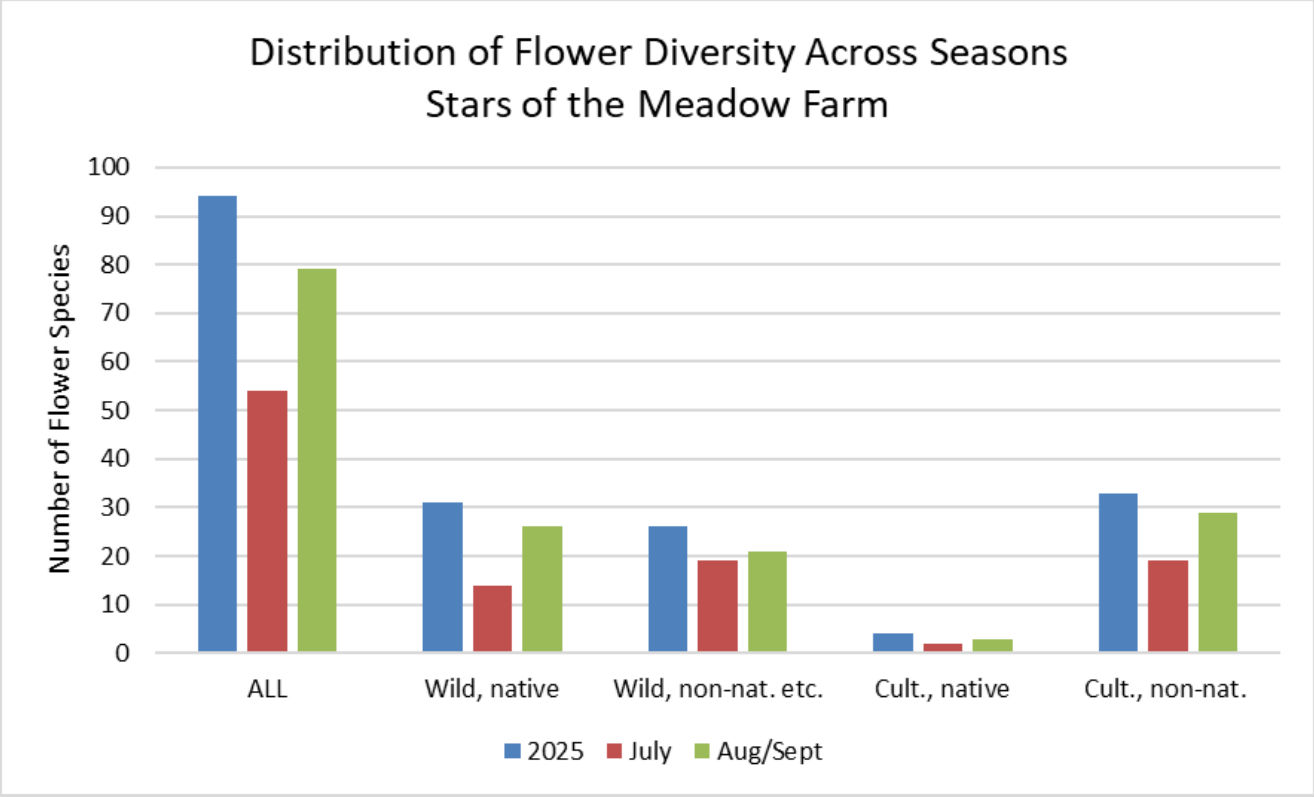


Figure 3. Distribution of flower diversity across the season at Stars of the Meadow

Most of the plants that bloomed in July and Aug/Sept at Stars of the Meadow were wild-growing plants (60%; 56 of 94 species). As in most farms we studied in 2025, the diversity of all plants in

bloom increased from July to Aug/Sept. However, in contrast to most other farms in the study, at Stars of the Meadow, this pattern was exhibited by each of the four groups of plants.

Figure 4 illustrates that even on a farm dedicated to the cultivation of cut flowers, much of the flower diversity is contributed by wild-growing plants across the season. Note that our decision to distinguish individual flower beds as survey units resulted in the fact that the survey units representing cultivated flowers were quite small compared to the survey units representing less intensively managed, wilder areas on the farm. This somewhat biases the visual impression of flower diversity on the maps towards a certain underrepresentation of cultivated flowers. However, we were surprised by the fact that—even on a flower farm—the number of cultivated plants in bloom (and therefore potentially providing floral resources to insects) was usually only between one and five per flower bed.

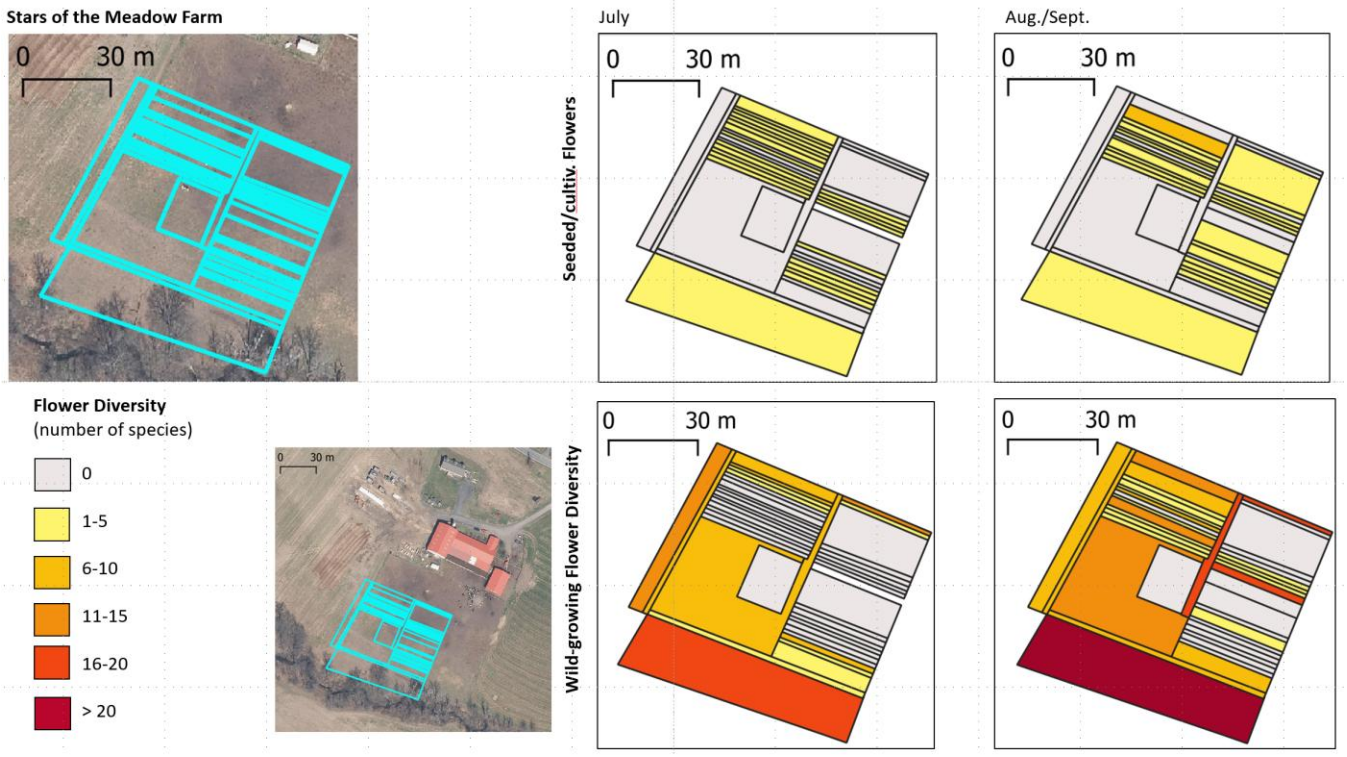


Figure 4. Comparative diversity of seeded/cultivated flowers (above) and wild-growing flowers (below) in the survey units at Stars of the Meadow.

Figure 5 illustrates that flower diversity and abundance change quite independently of each other between survey units and across time. At Stars of the Meadow, we observed quite a few survey units having a high abundance of flowers but only a few flower species (as in most beds of cultivated flowers).

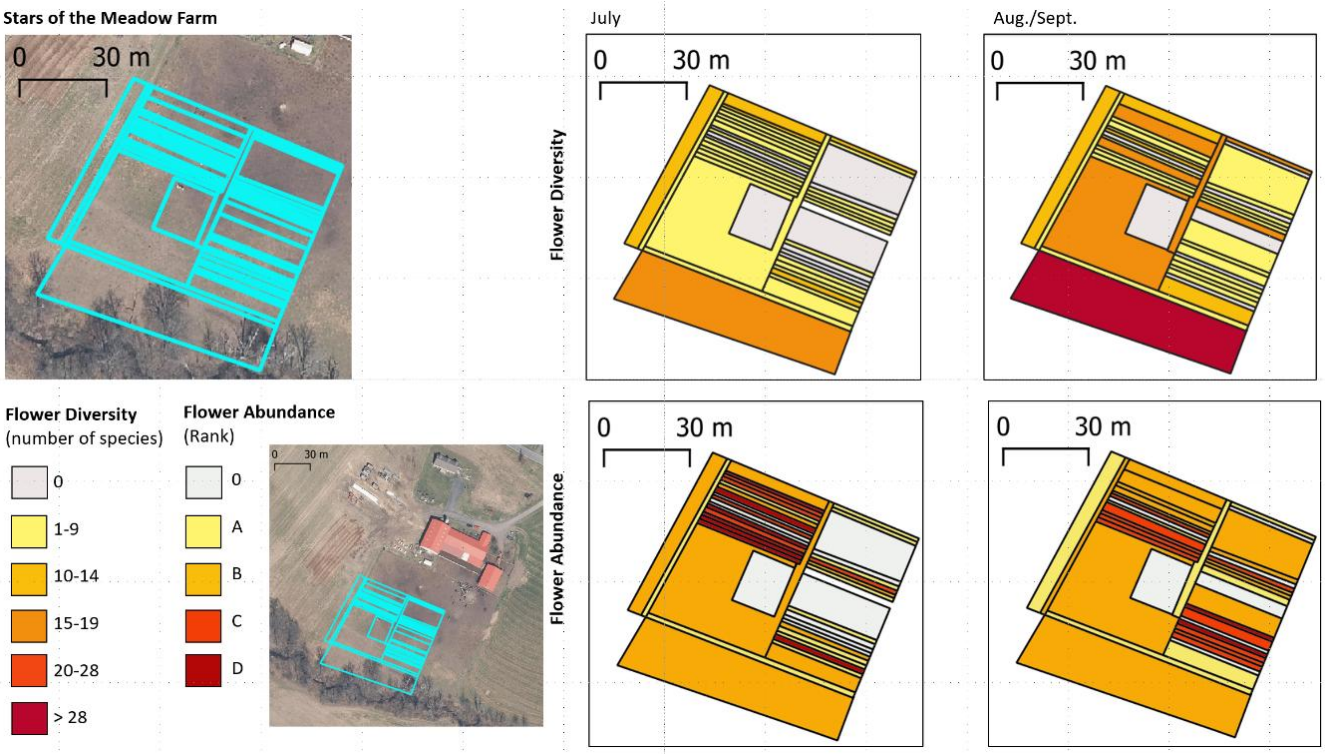


Figure 5. Flower diversity (row of maps above) and abundance (row of maps below) in the northern survey units at Stars of the Meadow. Claudia ranked flower abundances from A (least) to D (most) and also had a zero category.

Flower Visitor Community.

Although Claudia was not able to come to the June visit to Stars of the Meadow and so detailed June flower data were not available, insect surveys were done in June, and those observations were incorporated into our overall flower favorability scores (Table 1) and the insect observation rates as illustrated in Figure 6.

Stars of the Meadow had notably high rates of bumble bee and Honey Bee observation, close to average rates for "other" bees, hover flies and wasps, and notably low rates of butterfly sightings (Figure 6).

In our somewhat anecdotal but more detailed data on who the 'other' bees were, Stars of the Meadow seemed to have relatively high numbers of the small *Lasioglossum* sweat bees and of *Triepeolus*, a cuckoo bee said to parasitize long horn bees. Surprisingly, however, long horn bees were not commonly seen at Stars of the Meadow.

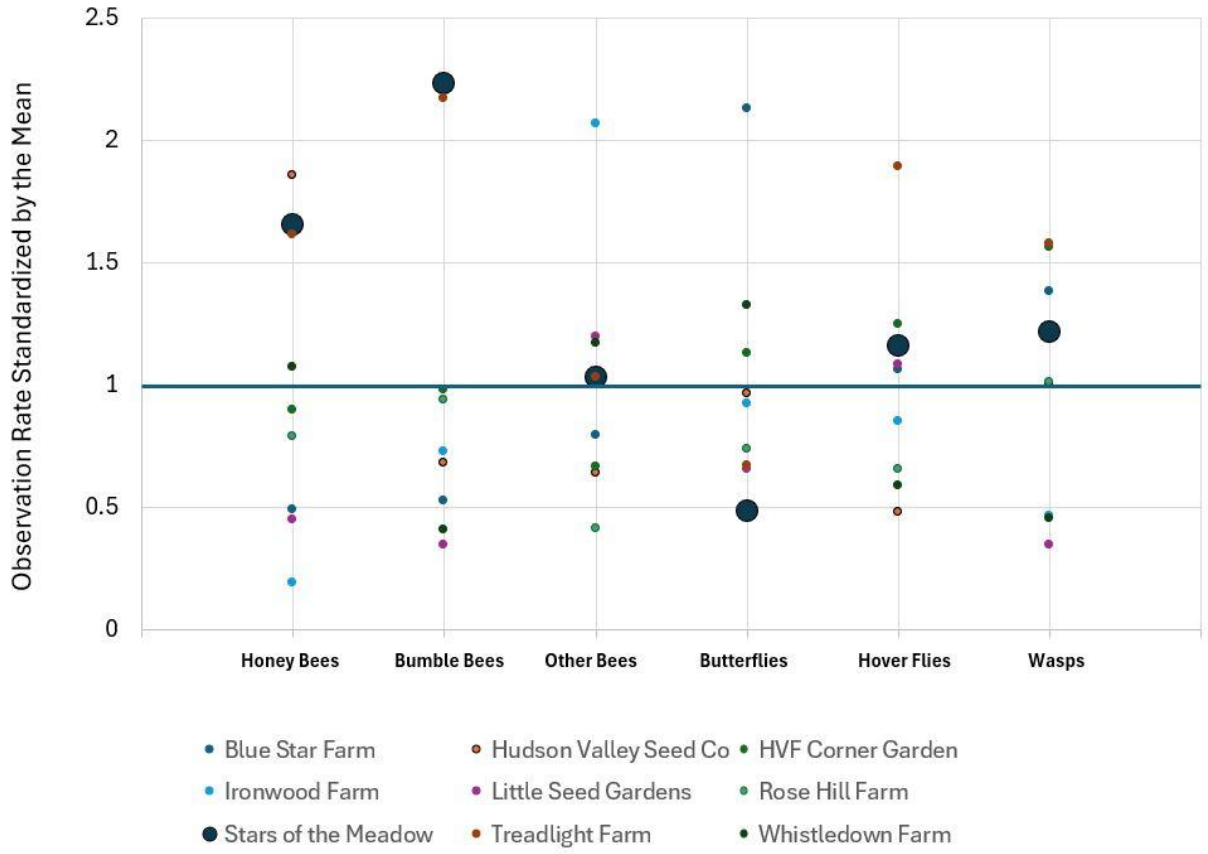


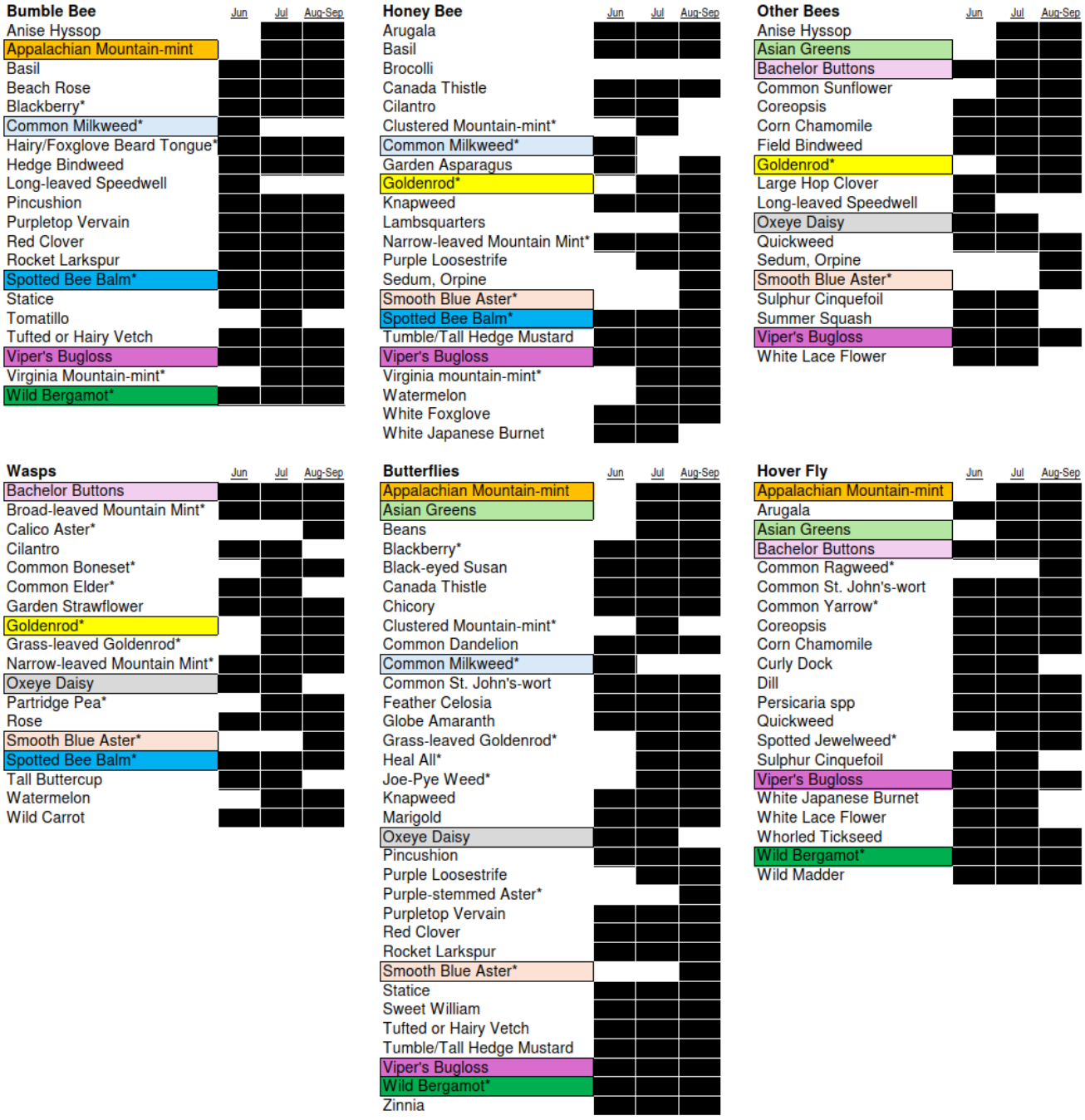
Figure 6. The standardized Stars of the Meadow observation rates for the various insect groups relative to the mean for all farms (the solid line at 1).

Flower-favorability Data & Maps

For convenience, the flower favorability table from the main blog is repeated here (Table 1), even though those data are a summary of observations across all farms and outings.

Figures 7A-F show the flower favorability maps for Stars of the Meadow. As noted earlier, we did not have the detailed flower abundance data necessary to compile flower favorability maps for June. Both the maps and Figure 8 suggest that average flower favorability was relatively low for Stars of the Meadow except in the case of butterflies (although, as noted earlier, butterflies were actually notably uncommon at this farm). Stars of the Meadows relatively high rate of bumble bee observations contrasts with the relative low apparent favorability rating. However it's important to again note that the insect group observation rate included June data while the flower favorability data do not. Hence, expecting direct concordance might be unrealistic. Furthermore, as mentioned, multiple factors aside from flower availability can influence insect abundance,

Table 1. Most favored plants by our six insect groups, based on data from all farms and all outings. Lists are alphabetical and only include those flowers with notably higher than average visitation rates by the given groups. Plant species native to the Hudson Valley are marked with an asterisk. Colored boxes highlight those species found on three or more lists. Black blocking indicates flowering times observed during the season.



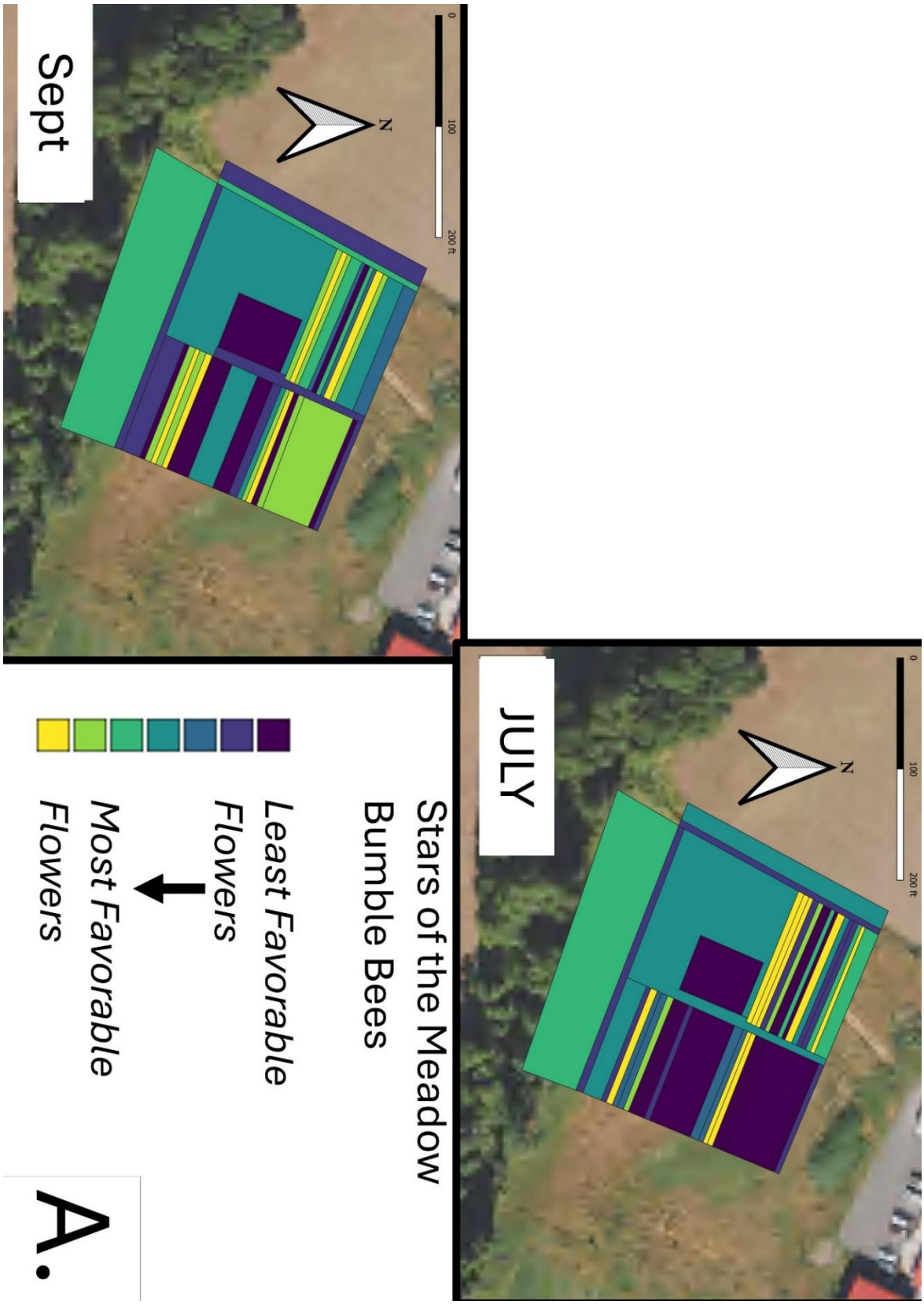


Figure 7A. Flower favorability for bumble bees in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

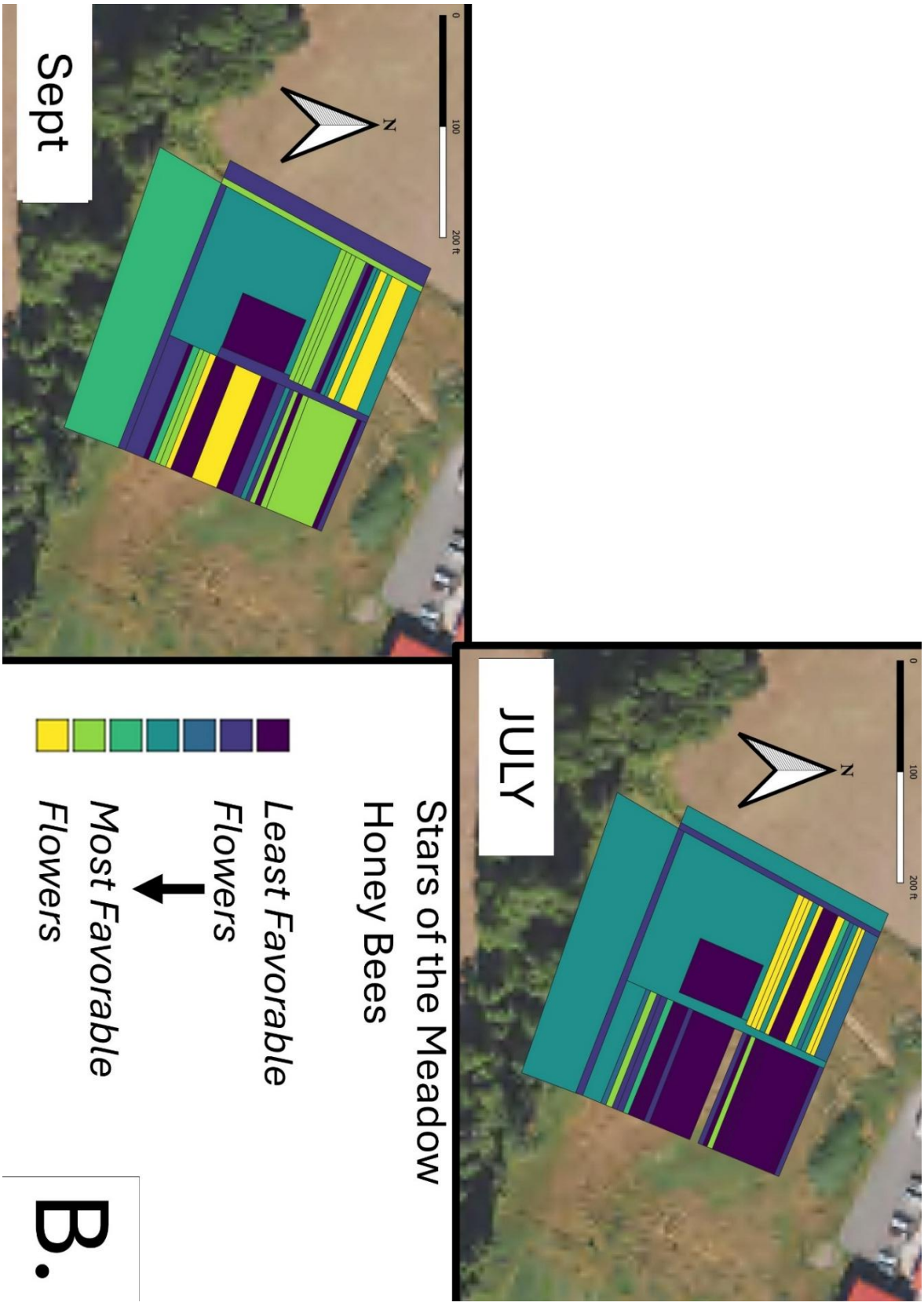


Figure 7B. Flower favorability for Honey Bees in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

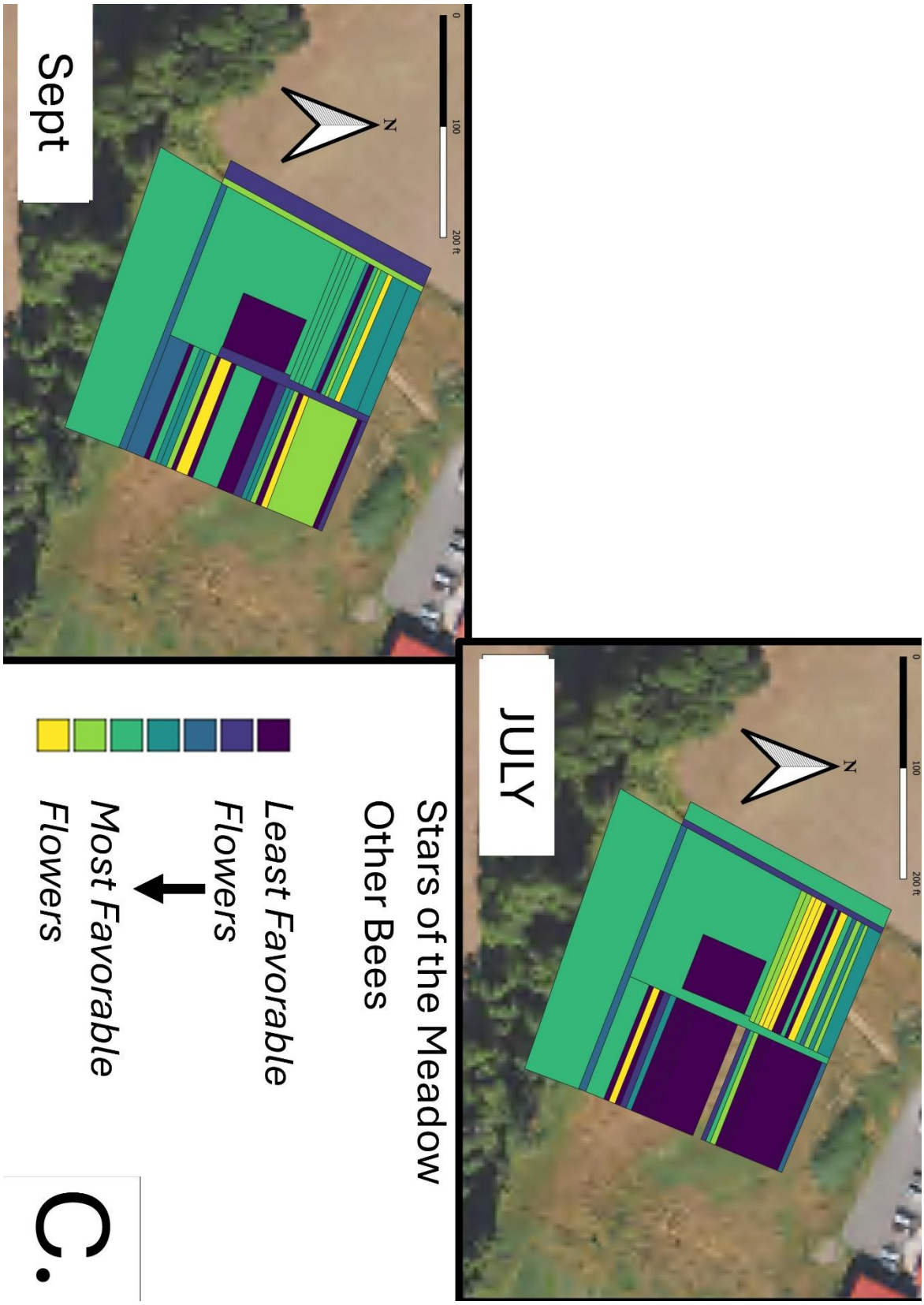


Figure 7C. Flower favorability for other bees in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

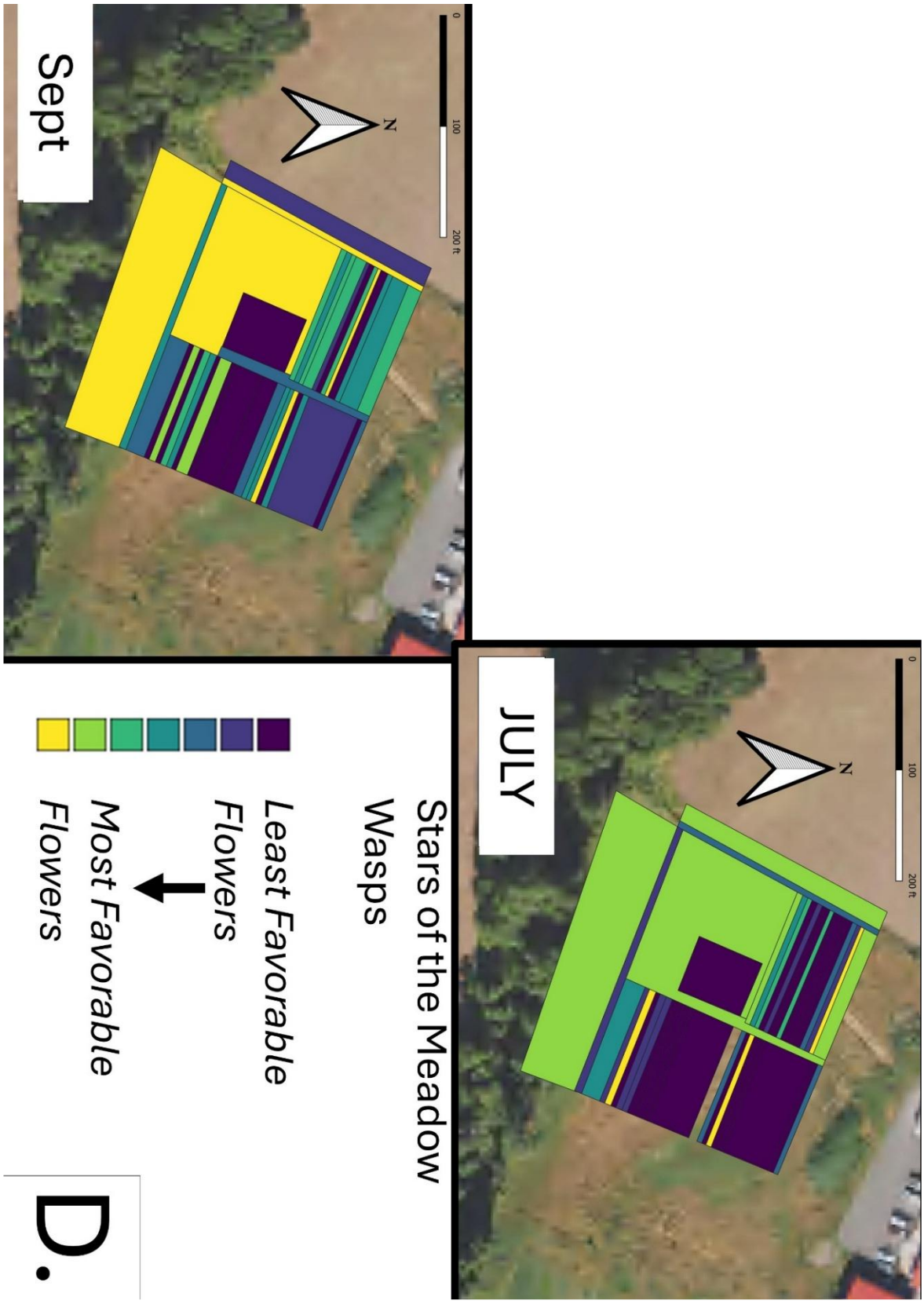


Figure 7D. Flower favorability for wasps in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

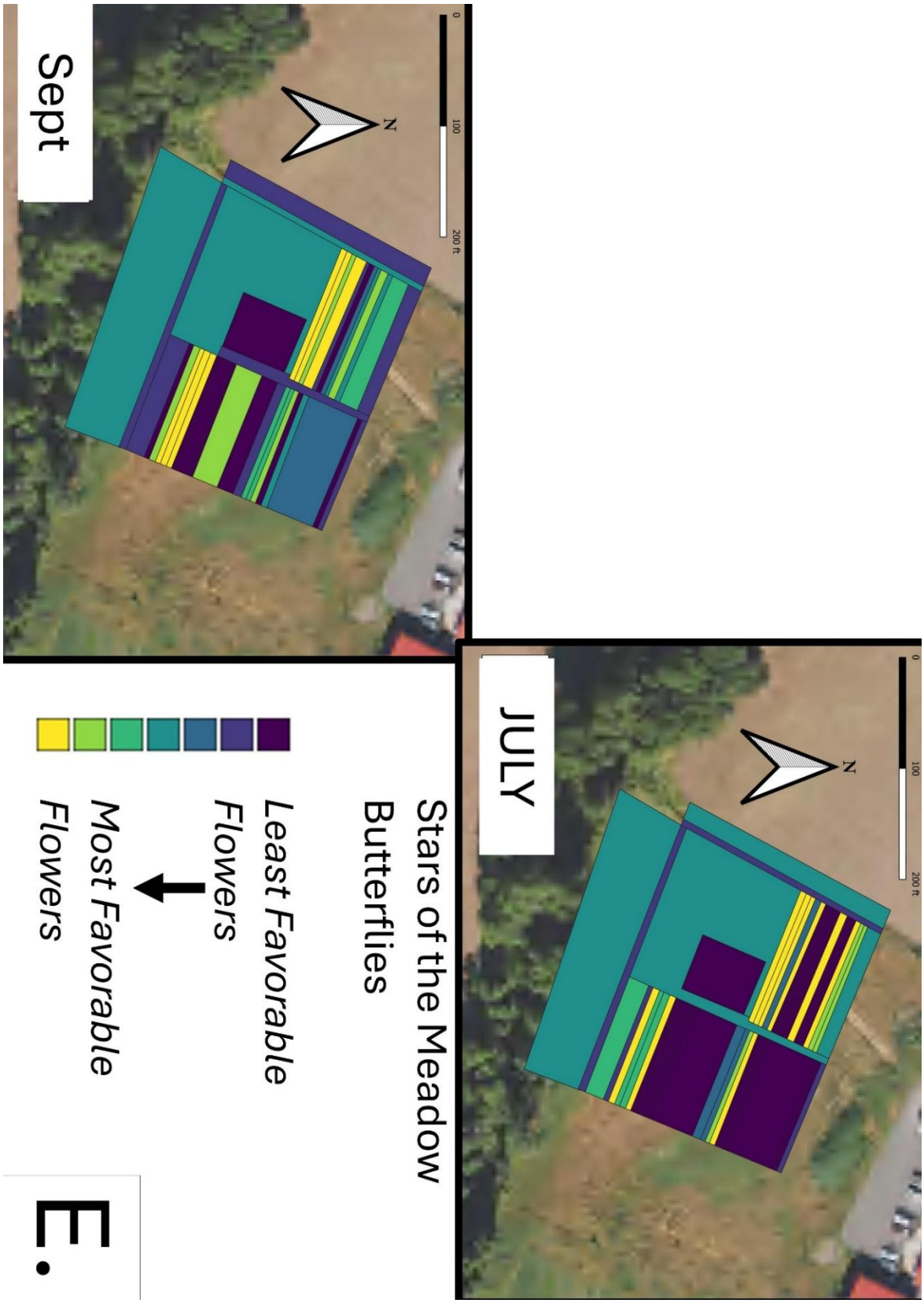


Figure 7E. Flower favorability for butterflies in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

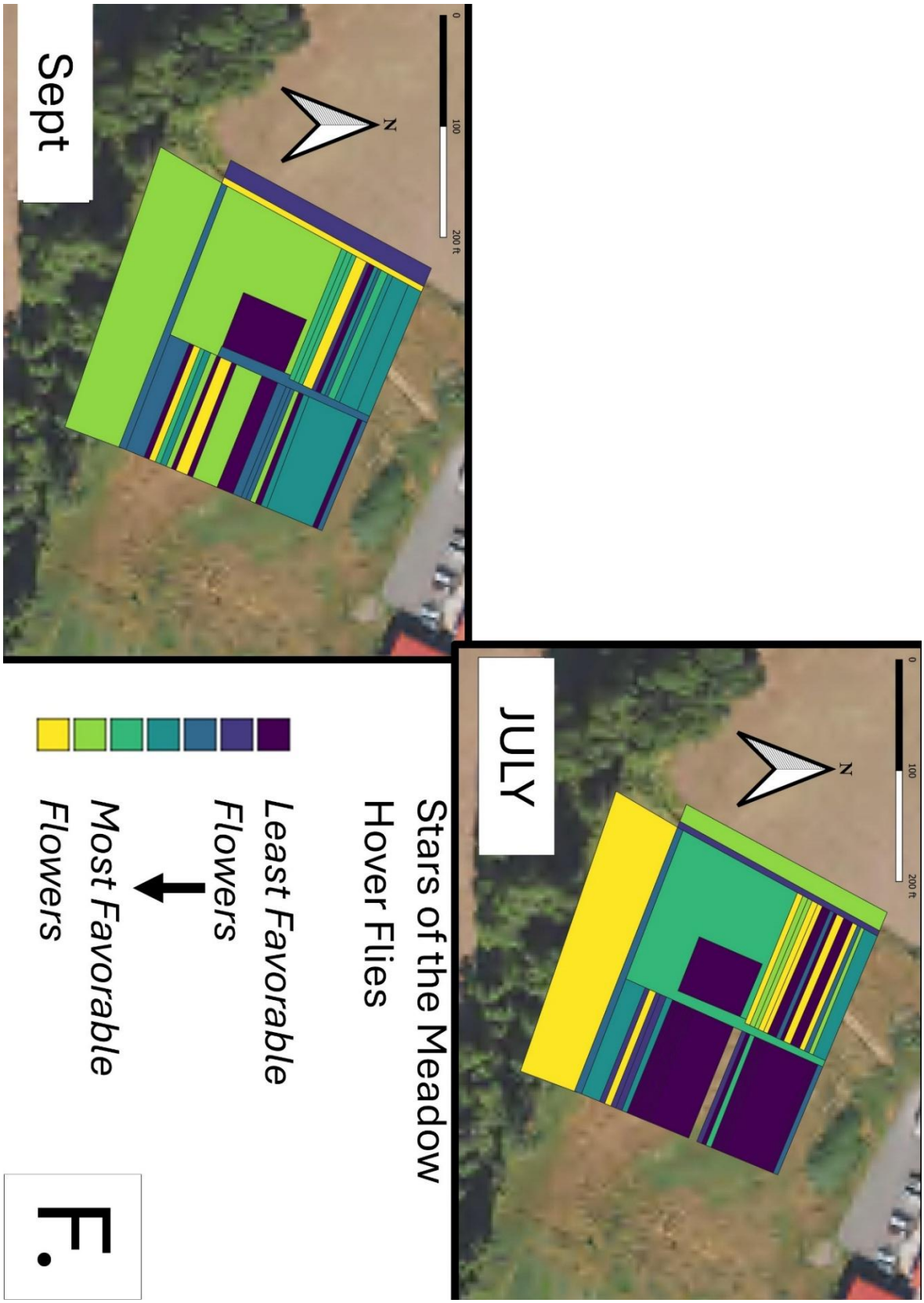


Figure 7F. Flower favorability for hover flies in the different survey units and different months at Stars of the Meadow. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

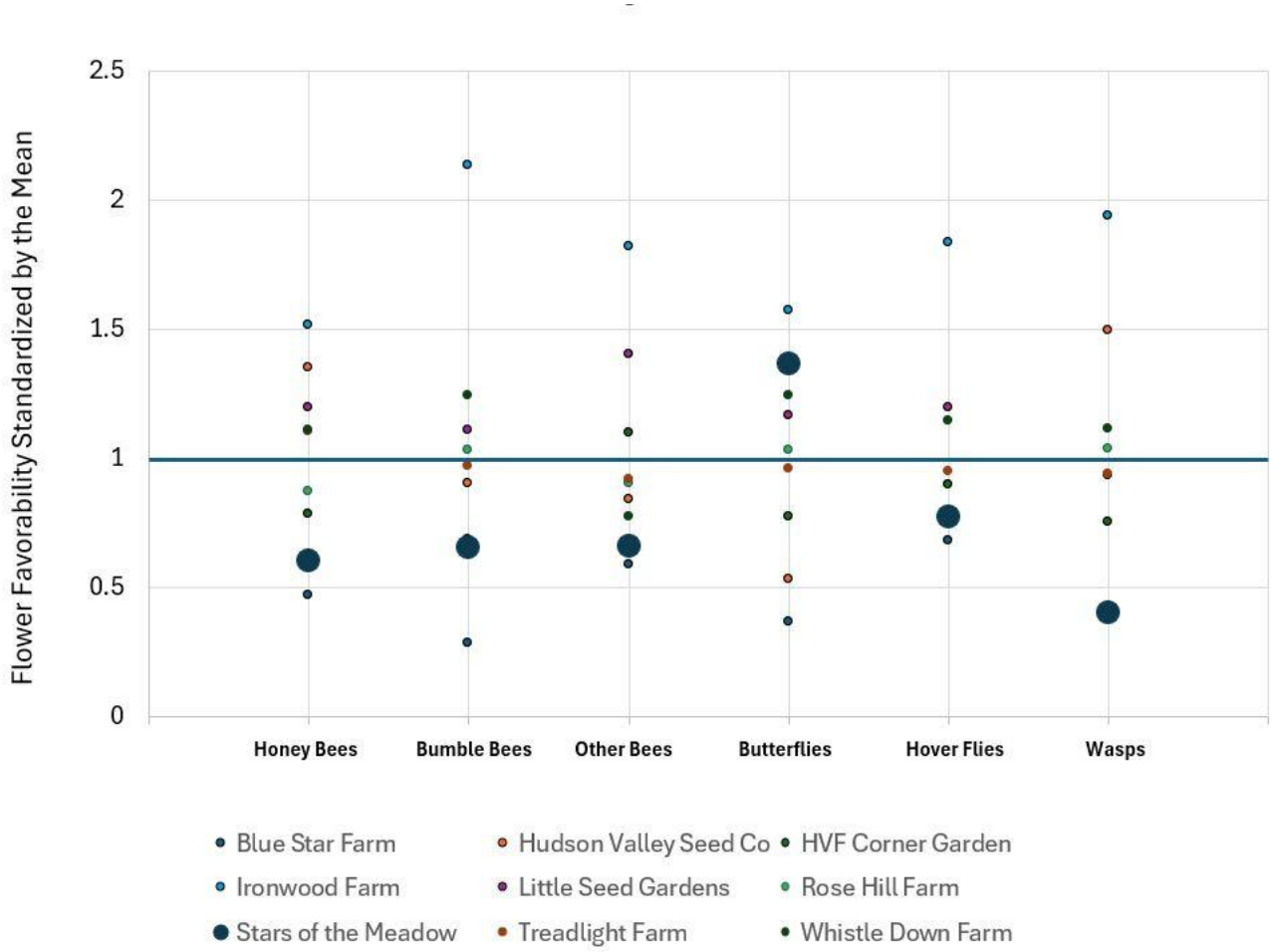


Figure 8. Standardized flower favorability scores by insect group. The solid line at one indicates the mean value across all farms.

including nest site availability, flower resources outside of the survey area (which might be particularly important on a small farm, such as Stars of the Meadow), consistency of the flower resources across months and years, and freedom from exposure to pesticides.

Management Considerations

It looks as if the wild and mature field edge areas were primarily providing resources to wasps and hover flies; seeding additional flowers favored by the other groups might expand this offering. The pollinator seeding planned by Stars of the Meadow might be a step in the right direction. Generally, the uncultivated area in the southwest corner of the fenced-in section as well as the wild area outside of the fence mostly provided resources favored by wasps and hoverflies. One could consider creating patches of flowers favored by the other insect groups in these areas. The western field edge, an area outside the fence that might or might not be within the area managed

by Stars of the Meadow, seemed to be especially low in flower offerings across the board, and any type of flower addition might enhance its offering.

Potential Next Steps

If Stars of the Meadow does not produce flower seeds (to be determined), then the success of the farm operation does not rely on pollinators. This suggests that the main reason to consider supporting them is for their conservation. If such is the case, then potentially seeding/planting some of the flowers favored by specialist bees might be appropriate (see for example Jarred Fowler's work on specialist bees of the Northeast). Wasps and hover flies may be providing useful accessory biocontrol of pests. If so, then not only for their conservation but also for their biocontrol benefits, it would be appropriate to maintain and possibly even expand their available habitat. For example, in addition or alternative to the establishment of flower patches for the other insect groups mentioned above, some patches of the favorite wasp and hover fly flowers could be established in the lightly managed "wild" area outside the fence. Maybe even some space inside the fence could be dedicated to them or seeds of some of their favorite flowers could be scattered along the western fenceline.

Because of the incomplete nature of our first year's data, gathering another year of data at Stars of the Meadow might be valuable. In addition to gathering the botanical information in June (which we missed in 2025), it might also be interesting to see which—if any—spring ephemerals might be present along the shores of the stream. Additionally, understanding which pests, if any, are relevant to farm production and whether wasps or hover flies are targeting them could help determine the applied importance of managing for these flower visitors.

Acknowledgment

Our thanks to Marybeth Wehrung for her interest and encouragement.

Appendix: List of Flowers Observed.

On the following three pages, you find the appendix with the list of plants seen in bloom in the survey units of Stars of the Meadow during three surveys in 2026. The column annotations are explained below.

Native: Indicates whether a species is considered native to the Hudson Valley, "Y" or not, "N." Non-native invasive species are denoted "N-I." Wild-growing species have only the entry "Y," "N," or "N-I." Cultivated species have an added "cult." Additional entries in parentheses indicate that a usually wild-growing plant is occasionally cultivated, "(cult)," or a usually cultivated plant is occasionally also found wild, "(wild)."

Rarity: A star * in this column flags species we consider rare or uncommon in the Hudson Valley.

Ubiquity: The values are calculated as the average % of survey units at the farm which contained the species in bloom during the months of its flowering season.

Duration: The number of months (1 to 3) in which the species was observed in bloom at the farm.

Fl. Season: Indicates with an "x" the months in which the species was observed in bloom at the farm.

Appendix: List of Plants Found in Bloom in the Study Units of Stars of the Meadow Farm During Three Surveys in 2025

			Rarity	Ubiquity	Duration	Fl. Season	
Common Name by Groups	***Scientific Name***	**Native**	**regionally rare/uncommon**	**avg. % of units during flowering season**	**# months in bloom (of 3)**	**July**	**Aug/Sep**
amaranth, globe	*Gomphrena globosa*	N cult		5.1	2	x	x
amaranth, red-rooted	*Amaranthus retroflexus*	Y		21.6	1		x
aster, awl	*Symphyotrichum pilosum*	Y		2.7	1		x
aster, Chinese	*Callistephus chinensis*	N cult		5.4	1		x
bachelor's button	*Centaurea cyanus*	N cult		2.4	1	x	
bedstraw, hedge (wild madder)	*Galium mollugo*	N		13.1	2	x	x
beebalm, lemon	*Monarda citriodora*	N cult		2.6	2	x	x
beggar-ticks, devil's	*Bidens frondosa*	Y		2.7	1		x
bergamot, (common) wild	*Monarda fistulosa*	Y cult (wild)	*	2.4	1	x	
bindweed, black	*Fallopia convolvulus*	N		2.7	1		x
bluebeard	*Caryopteris sp.*	N cult		2.7	1		x
calendula; marigold	*Calendula officinalis*	N cult		2.7	1		x
campion, white	*Silene latifolia*	N		6.4	2	x	x
cardinal flower	*Lobelia cardinalis*	Y cult	*	2.7	1		x
carpetweed	*Mollugo verticillata*	N		13.0	2	x	x
carrot, wild	*Daucus carota*	N		12.9	2	x	x
celosia, feather	*Celosia argentea (Plumosa group)*	N cult		2.6	2	x	x
chamomile, golden; dyer's chamomille	*Cota tinctoria*	N cult		2.7	1		x
chicory	*Cichorium intybus*	N		14.1	2	x	x
cinquefoil, rough-leaved	*Potentilla norvegica*	N		6.5	2	x	x
cinquefoil, silver	*Potentilla argentea*	N		4.9	1	x	
clover, alsike	*Trifolium hybridum*	N		2.4	1	x	
clover, red	*Trifolium pratense*	N (cult)		7.6	2	x	x
clover, white	*Trifolium repens*	N		7.6	2	x	x
cock's-comb	*Celosia argentea (Cristata group)*	N cult		2.6	2	x	x
coneflower varieties	*Echinacea purpurea varieties*	N cult		2.7	1		x
coneflower, eastern purple	*Echinacea purpurea*	N cult		4.9	1	x	
cosmos, garden (white, pink, red)	*Cosmos bipinnata*	N cult		5.1	2	x	x
dahlia (all varieties)	*Dahlia sp.*	N cult		5.4	1		x
feverfew	*Tanacetum parthenium*	N cult		6.5	2	x	x
feverfew, yellow	*Tanacetum parthenium variety*	N cult		2.4	1	x	
fleabane, daisy	*Erigeron annuus*	Y		19.2	2	x	x
foxglove, purple	*Digitalis purpurea f. albiflora*	N cult		8.8	2	x	x
goldenrod, early	*Solidago juncea*	Y		2.4	1	x	

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Common Name by Groups	***Scientific Name***	**Native**	regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	July	Aug/Sep
goldenrod, flat-topped	*Euthamia graminifolia*	Y		2.7	1		x
goldenrod, smooth	*Solidago gigantea*	Y		2.7	1		x
goldenrod, tall	*Solidago altissima ssp. altissima*	Y		10.8	1		x
goldenrod, wrinkle-leaved	*Solidago rugosa var. rugosa*	Y		2.7	1		x
ground-cherry, clammy	*Physalis heterophylla*	Y	*	2.7	1		x
honeywort	*Cerinthe major*	N cult		2.7	1		x
horse-nettle	*Solanum carolinense var. carolinense*	Y		16.8	2	x	x
horseweed	*Erigeron canadensis var. canadensis*	Y		18.5	2	x	x
Indian-hemp	*Apocynum cannabinum*	Y		2.4	1	x	
Indian-tobacco	*Lobelia inflata*	Y		5.1	2	x	x
Jerusalem-oak	*Dysphania botrys*	N		5.4	1		x
jewelweed, spotted	*Impatiens capensis*	Y		2.6	2	x	x
Jimsonweed	*Datura stramonium*	N		3.9	2	x	x
jumpseed	*Persicaria virginiana*	Y		2.7	1		x
knotweed, common	*Polygonum aviculare*	N		5.4	1		x
lady's-thumb	*Persicaria maculosa*	N		21.0	2	x	x
lamb's-quarters	*Chenopodium album*	N		13.5	1		x
larkspur, rocket	*Consolida (Delphinium) ajacis*	N cult		3.8	2	x	x
lisianthus, showy prairie gentian	*Eustoma grandiflorum*	N cult		2.4	1	x	
live-forever, Eurasian	*Hylotelephium telephium*	N cult		2.7	1		x
lobelia, great blue	*Lobelia siphilitica var. siphilitica*	Y cult	*	2.7	1		x
loosestrife, fringed	*Lysimachia ciliata*	Y (cult)		2.4	1	x	
loosestrife, purple	*Lythrum salicaria*	N-I		2.7	1		x
marigold (all varieties)	*Tagetes sp. (all varieties)*	N cult		9.1	2	x	x
medic, black	*Medicago lupulina*	N		2.4	1	x	
mountain-mint, Virginia	*Pycnanthemum virginianum*	Y (cult)	*	2.4	1	x	
nasturtium	*Tropaeolum majus*	N cult		3.8	2	x	x
nightshade, black	*Solanum nigrum/ptycanthum*	U		11.9	2	x	x
onion, Canada	*Allium canadense var. canadense*	Y	*	2.7	1		x
pepperweed, wild	*Lepidium virginicum var. virginicum*	Y	*	17.0	2	x	x
pilewort	*Erechtites hieraciifolius var. hieraciifolius*	Y		5.4	1		x
pincushion flower (all colors)	*Scabiosa atropurpurea*	N cult		5.3	2	x	x
plantain, narrow-leaved	*Plantago lanceolata*	N		16.8	2	x	x
pokeweed	*Phytolacca americana var. americana*	Y		3.9	2	x	x

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goldenrod, flat-topped	*Euthamia graminifolia*	Y		2.7	1		x
goldenrod, smooth	*Solidago gigantea*	Y		2.7	1		x
goldenrod, tall	*Solidago altissima ssp. altissima*	Y		10.8	1		x
goldenrod, wrinkle-leaved	*Solidago rugosa var. rugosa*	Y		2.7	1		x
ground-cherry, clammy	*Physalis heterophylla*	Y	*	2.7	1		x
honeywort	*Cerinthe major*	N cult		2.7	1		x
horse-nettle	*Solanum carolinense var. carolinense*	Y		16.8	2	x	x
horseweed	*Erigeron canadensis var. canadensis*	Y		18.5	2	x	x
Indian-hemp	*Apocynum cannabinum*	Y		2.4	1	x	
Indian-tobacco	*Lobelia inflata*	Y		5.1	2	x	x
Jerusalem-oak	*Dysphania botrys*	N		5.4	1		x
jewelweed, spotted	*Impatiens capensis*	Y		2.6	2	x	x
Jimsonweed	*Datura stramonium*	N		3.9	2	x	x
jumpseed	*Persicaria virginiana*	Y		2.7	1		x
knotweed, common	*Polygonum aviculare*	N		5.4	1		x
lady's-thumb	*Persicaria maculosa*	N		21.0	2	x	x
lamb's-quarters	*Chenopodium album*	N		13.5	1		x
larkspur, rocket	*Consolida (Delphinium) ajacis*	N cult		3.8	2	x	x
lisianthus, showy prairie gentian	*Eustoma grandiflorum*	N cult		2.4	1	x	
live-forever, Eurasian	*Hylotelephium telephium*	N cult		2.7	1		x
lobelia, great blue	*Lobelia siphilitica var. siphilitica*	Y cult	*	2.7	1		x
loosestrife, fringed	*Lysimachia ciliata*	Y (cult)		2.4	1	x	
loosestrife, purple	*Lythrum salicaria*	N-I		2.7	1		x
marigold (all varieties)	*Tagetes sp. (all varieties)*	N cult		9.1	2	x	x
medic, black	*Medicago lupulina*	N		2.4	1	x	
mountain-mint, Virginia	*Pycnanthemum virginianum*	Y (cult)	*	2.4	1	x	
nasturtium	*Tropaeolum majus*	N cult		3.8	2	x	x
nightshade, black	*Solanum nigrum/ptycanthum*	U		11.9	2	x	x
onion, Canada	*Allium canadense var. canadense*	Y	*	2.7	1		x
pepperweed, wild	*Lepidium virginicum var. virginicum*	Y	*	17.0	2	x	x
pilewort	*Erechtites hieraciifolius var. hieraciifolius*	Y		5.4	1		x
pincushion flower (all colors)	*Scabiosa atropurpurea*	N cult		5.3	2	x	x
plantain, narrow-leaved	*Plantago lanceolata*	N		16.8	2	x	x
pokeweed	*Phytolacca americana var. americana*	Y		3.9	2	x	x