

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

## Treadlight Farm Report



Farmer-Ecologist Research Circle  
Feb. 2026

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## Farm Description

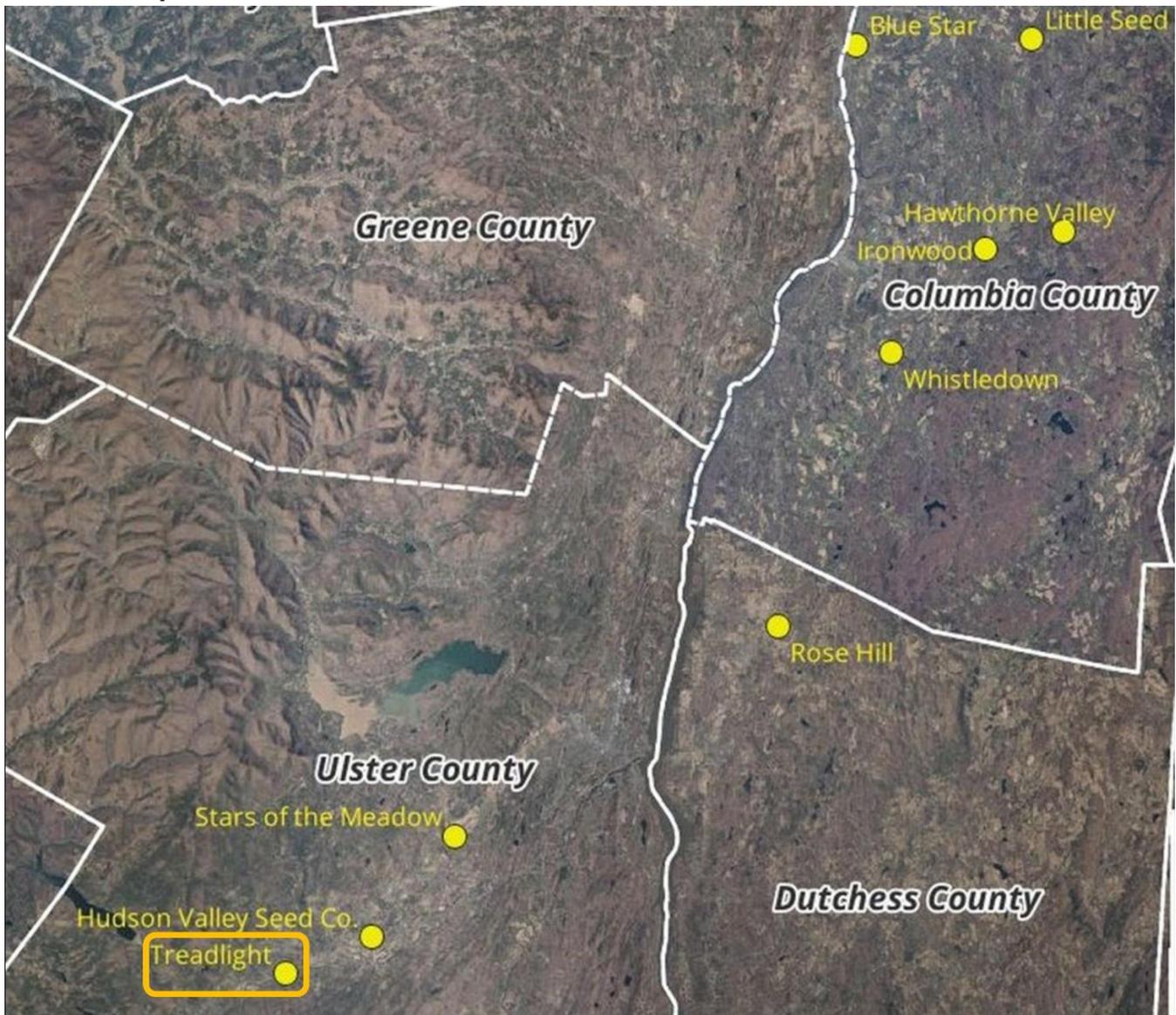


Figure 1. Treadlight is located in central Ulster County.

Treadlight is a roughly 20 acre organic cut-flower farm in Kerhonkson NY. We studied approximately 7.4 acres of this farm. Our study area was the western portion of the land farmed by Treadlight. Treadlight is located on the Arrowhead Farm Agricultural Center, and it shares a fenced-in set of fields with Long Season Farm. The survey units were made up primarily of cultivated flower beds (both annual and perennial, sometimes including woody plants) and a large wild/fallow area in the western part of the land (Fig. 2). There were also some relatively extensive fencelines.

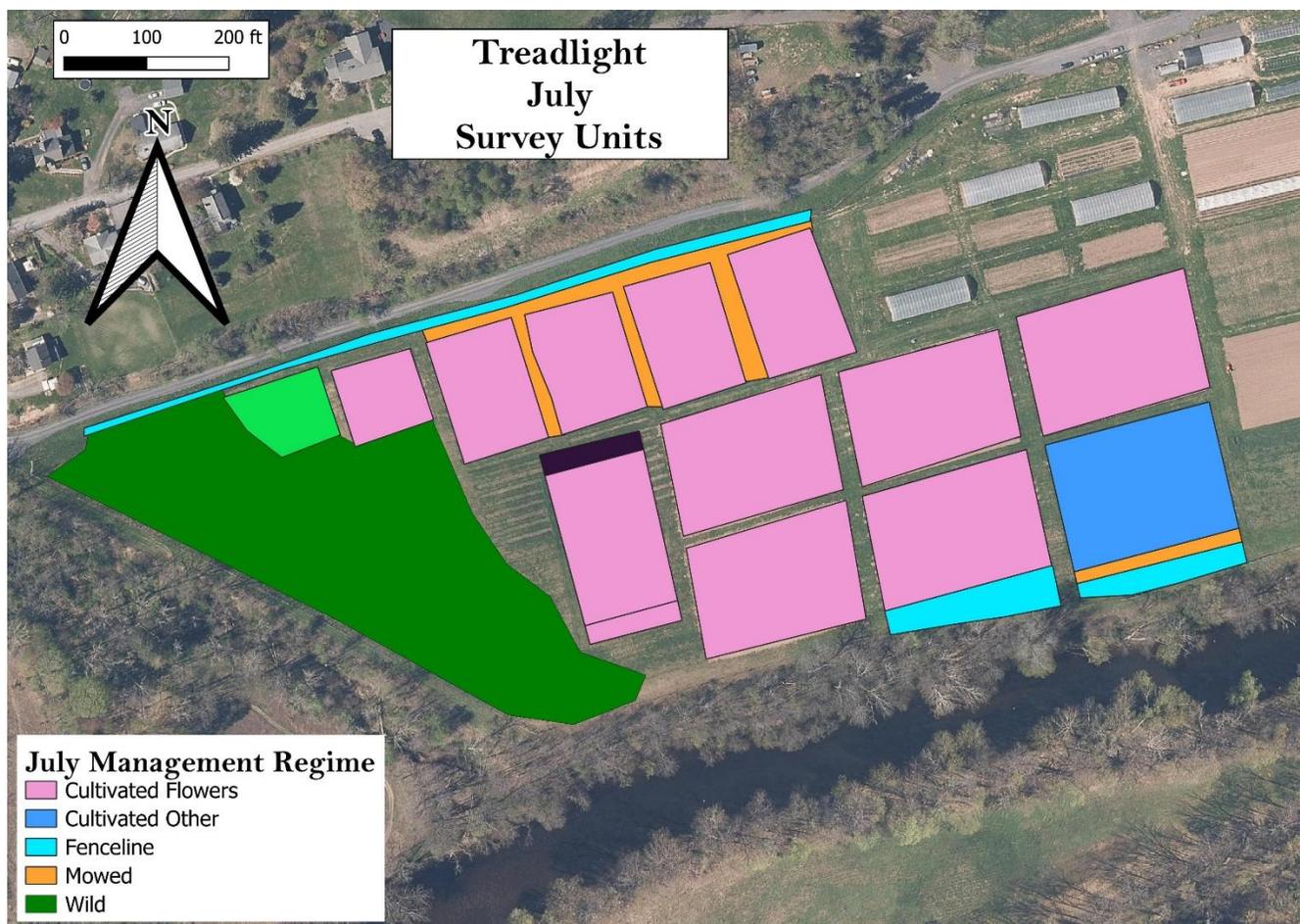


Figure 2. Generalized management regimes in the Treadlight survey units during July.

## Botany

At Treadlight, we observed several wild-growing native flowers, which we consider otherwise uncommon in our region. Thin-leaved Sunflower occurred along the riparian corridor and was seen in bloom in the large wild meadow at the west end of the farm in mid to late summer. A single, but large plant of Hollow Joe-Pye-weed was in bloom in the same meadow in late July. Venus' Looking-glass flowered along the southern fenceline and in the neighboring mowed path in June. Marsh Yellowcress and Clammy Ground-cherry bloomed in late July as weeds in beds of annual and perennial cut flowers, respectively. Showy Tick-trefoil flowered as a weed in a bed of late Dahlias in September. Treadlight also cultivated 13 native flower species we consider regionally rare/uncommon (see Appendix).

Overall, we found 37 flower species (26% of the total of 142 species) that were unique to Treadlight and not found at any of the other farms. Most of them (22) were cultivated, non-native species, but they also included nine cultivated native species, and a handful of native and non-native, wild-growing ones.

Figure 3 shows the number of flowering species at Treadlight 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.

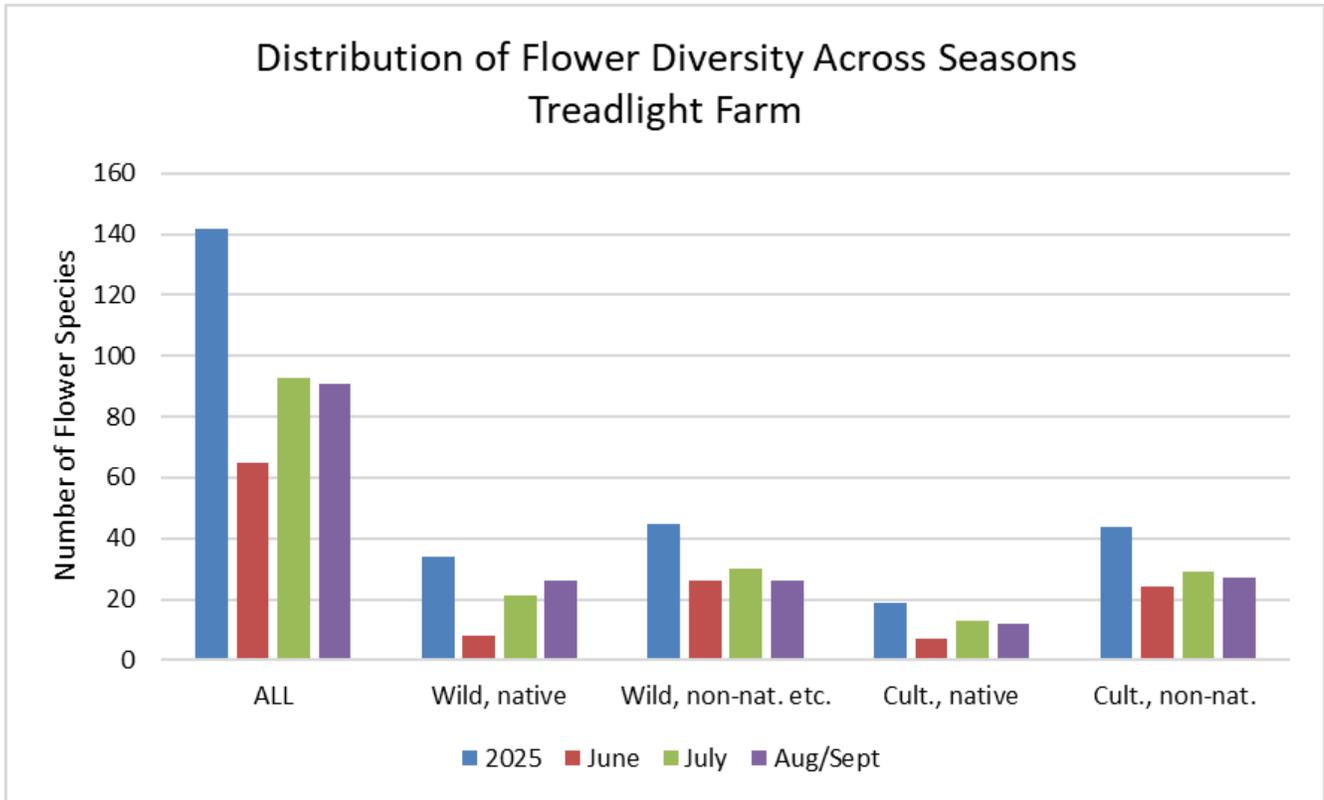


Figure 3. Distribution of flower diversity across the season at Treadlight

In contrast to most other farms we studied in 2025, where wild-growing flowers were much more diverse than cultivated flowers, the plants that bloomed from June to Aug/Sept at Treadlight were relatively evenly divided between wild-growing (79 species) and cultivated (62 species) plants. The seasonal diversity of flowers at Treadlight also did not follow the pattern found at most other farms, where diversity of all plants in bloom increased steadily from June to Aug/Sept. At Treadlight, the lowest diversity of flowers was also in June, but the highest diversity was in late July, although probably not significantly different from that in Aug/Sept. Similar to all other farms studied, the wild-growing, native plants increased in diversity across the season. However, the three other plant groups (wild-growing, non-native and cultivated flowers) all peaked in diversity in late July.

Figure 4 illustrates that—overall—wild-growing plants contributed more flower diversity than cultivated plants in most survey units at Treadlight across the season. This is not only true for the wilder habitats, but also for all perennial cultivated flower beds. Only in some of the annual

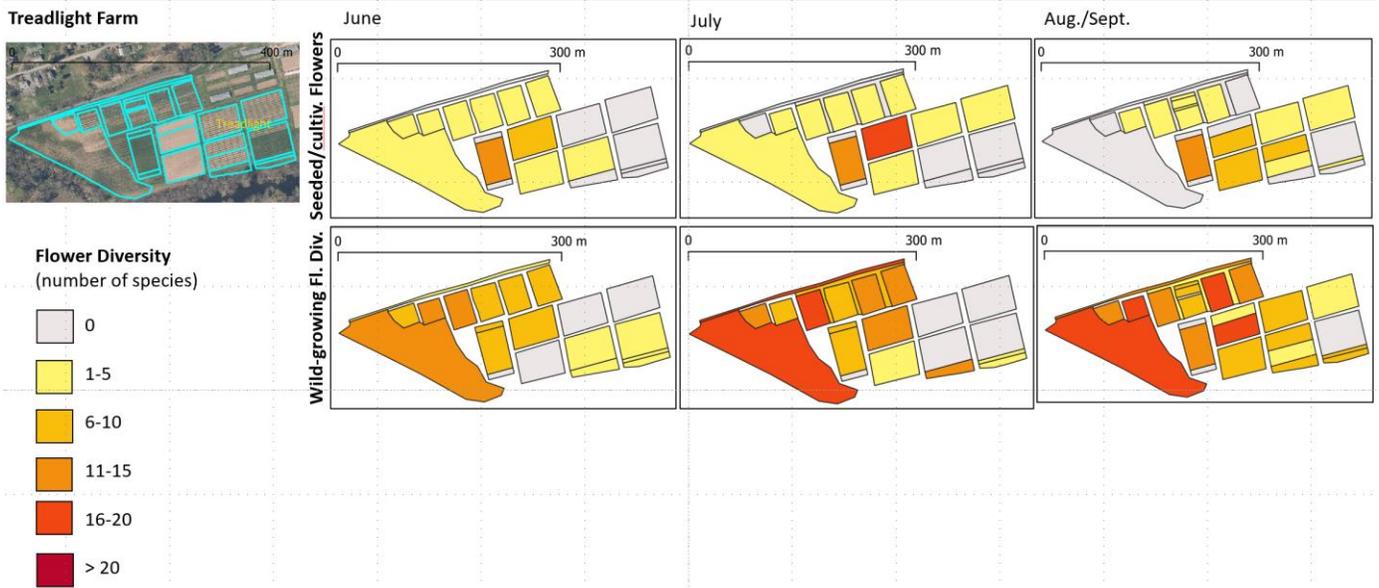


Figure 4. Comparative diversity of seeded/cultivated flowers (above) and wild-growing flowers (below) at Treadlight

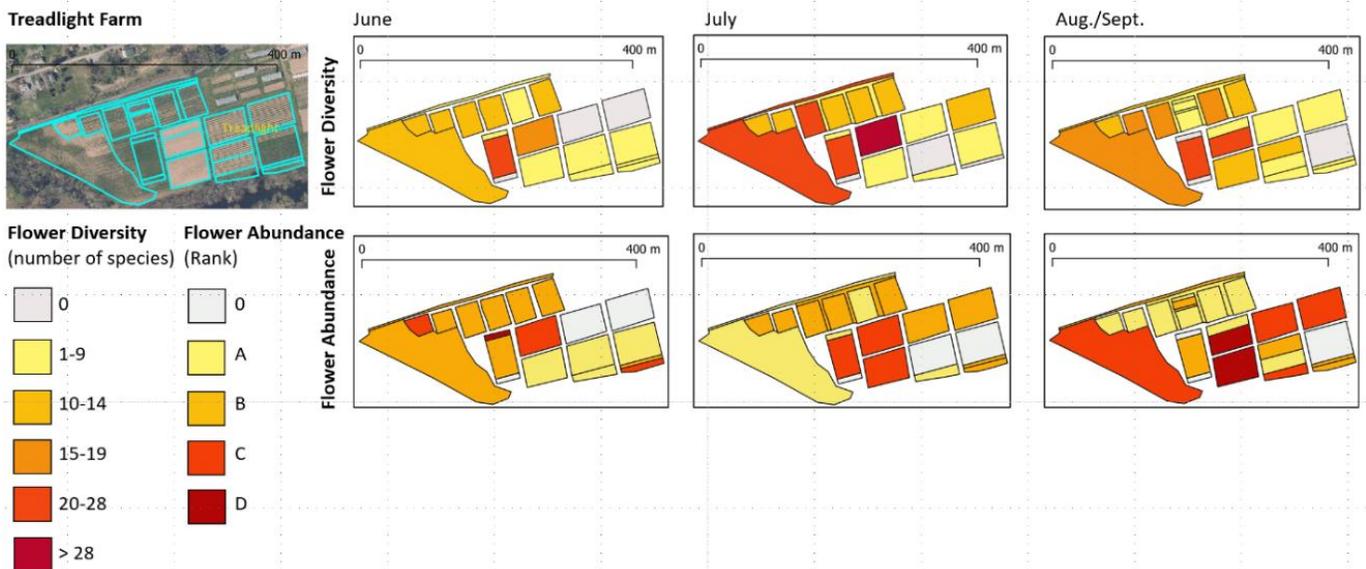


Figure 5. Flower diversity (row of maps above) and abundance (row of maps below) at Treadlight. Claudia ranked flower abundances from A (least) to D (most) and also had a zero category.

cultivated flower beds was the diversity of cultivated flowers higher during certain sampling times than that of wild-growing flowers.

Figure 5 illustrates that flower diversity and abundance change quite independently of each other between survey units and across time. Survey units can have a high abundance of the flowers of a few species, for example the Dahlia beds in late summer. They can also have a lot of species with few flowers each, for example the large, wild meadow at the west end of the farm in late July.

## Flower Visitor Community.

Treadlight generally showed high activity levels of our insect groups, except for butterflies (perhaps because Bt was used on the adjacent veggie farm) (Figure 6). There are nearby Honey Bee hives which may help explain their relatively high abundance, although most farms had hives.

In our somewhat anecdotal but more detailed data on who the ‘other’ bees were, Treadlight seemed to have notable diversity and activity levels. Aside from having a relatively high number of sightings for *Ceratina*, green sweat bees, *Halictus*, and *Megachile*, a relatively high number of the parasitic bee genus *Tripeolus* were also observed. Most of these were *T. lunatus*, but at least a couple were the less common *T. remigatus*. Interestingly, these bees are reported to parasitize *Melissodes* bees, which were relatively uncommon at Treadlight, perhaps because of the relative dearth of sun flowers. Treadlight was also the site of a few of our rarer sightings, including *Sphecodes*, *Protandrena andreoides*, *Megachile sculpturalis* (a non-native), and *Heriades*. We also photographed *Macropis* on Fringed Loosestrife (*Lysimachia*) flowers. Treadlight also had a high rate of sighting for Eastern Carpenter Bees. Amongst the bumble bees, in addition to the ubiquitous *B. impatiens*, we saw *B. griseocolis*, *B. bimaculatus* and *B. fervidus*. In sum, Treadlight had what felt like a relatively vibrant bee community.

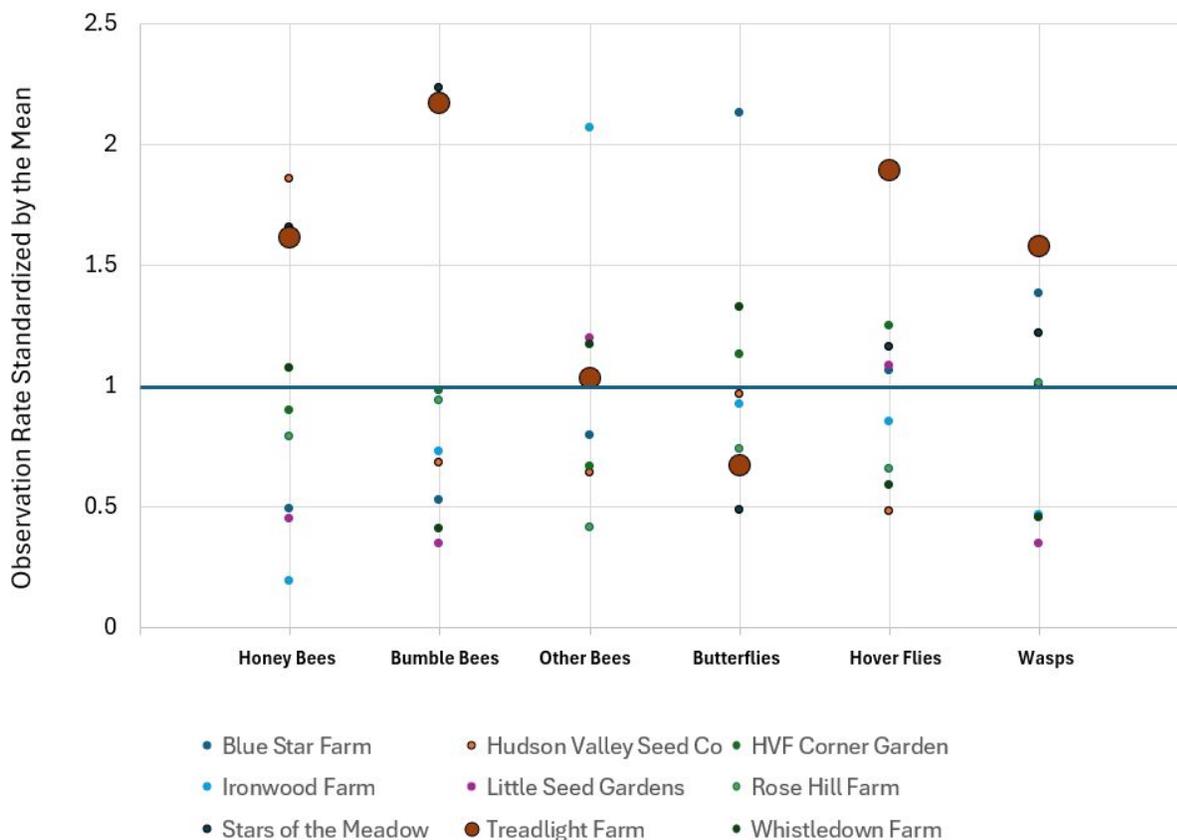


Figure 6. The standardized Treadlight observation rates for the various insect groups relative to the mean for all farms (the solid line at 1).

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.

Bumble Bee	Jun	Jul	Aug-Sep
Anise Hyssop			
Appalachian Mountain-mint			
Basil			
Beach Rose			
Blackberry*			
Common Milkweed*			
Hairy/Foxglove Beard Tongue*			
Hedge Bindweed			
Long-leaved Speedwell			
Pincushion			
Purpletop Vervain			
Red Clover			
Rocket Larkspur			
Spotted Bee Balm*			
Stachys			
Tomatillo			
Tufted or Hairy Vetch			
Viper's Bugloss			
Virginia Mountain-mint*			
Wild Bergamot*			

Honey Bee	Jun	Jul	Aug-Sep
Arugala			
Basil			
Broccoli			
Canada Thistle			
Cilantro			
Clustered Mountain-mint*			
Common Milkweed*			
Garden Asparagus			
Goldenrod*			
Knapweed			
Lambsquarters			
Narrow-leaved Mountain Mint*			
Purple Loosestrife			
Sedum, Orpine			
Smooth Blue Aster*			
Spotted Bee Balm*			
Thistle/Tall Hedge Mustard			
Viper's Bugloss			
Virginia mountain-mint*			
Watermelon			
White Foxglove			
White Japanese Burnet			

Other Bees	Jun	Jul	Aug-Sep
Anise Hyssop			
Asian Greens			
Bachelor Buttons			
Common Sunflower			
Coreopsis			
Corn Chamomile			
Field Bindweed			
Goldenrod*			
Large Hop Clover			
Long-leaved Speedwell			
Oxeye Daisy			
Quickweed			
Sedum, Orpine			
Smooth Blue Aster*			
Sulphur Cinquefoil			
Summer Squash			
Viper's Bugloss			
White Lace Flower			

Wasps	Jun	Jul	Aug-Sep
Bachelor Buttons			
Broad-leaved Mountain Mint*			
Calico Aster*			
Cilantro			
Common Boneset*			
Common Elder*			
Garden Strawflower			
Goldenrod*			
Grass-leaved Goldenrod*			
Narrow-leaved Mountain Mint*			
Oxeye Daisy			
Partridge Pea*			
Rose			
Smooth Blue Aster*			
Spotted Bee Balm*			
Tall Buttercup			
Watermelon			
Wild Carrot			

Butterflies	Jun	Jul	Aug-Sep
Appalachian Mountain-mint			
Asian Greens			
Beans			
Blackberry*			
Black-eyed Susan			
Canada Thistle			
Chicory			
Clustered Mountain-mint*			
Common Dandelion			
Common Milkweed*			
Common St. John's-wort			
Feather Celosia			
Globe Amaranth			
Grass-leaved Goldenrod*			
Heal All*			
Joe-Pye Weed*			
Knapweed			
Marigold			
Oxeye Daisy			
Pincushion			
Purple Loosestrife			
Purple-stemmed Aster*			
Purpletop Vervain			
Red Clover			
Rocket Larkspur			
Smooth Blue Aster*			
Stachys			
Sweet William			
Tufted or Hairy Vetch			
Thistle/Tall Hedge Mustard			
Viper's Bugloss			
Wild Bergamot*			
Zinnia			

Hover Fly	Jun	Jul	Aug-Sep
Appalachian Mountain-mint			
Arugala			
Asian Greens			
Bachelor Buttons			
Common Ragweed*			
Common St. John's-wort			
Common Yarrow*			
Coreopsis			
Corn Chamomile			
Curly Dock			
Dill			
Persicaria spp			
Quickweed			
Spotted Jewelweed*			
Sulphur Cinquefoil			
Viper's Bugloss			
White Japanese Burnet			
White Lace Flower			
Whorled Tickseed			
Wild Bergamot*			
Wild Madder			

## **Flower-favorability Data & Maps**

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

Figures 7A-F show the flower favorability maps for Treadlight, while Figure 8 compares the offering across farms. By glancing over the following maps, one gets the impression that bumble bees (Fig. 7A) should be relatively favored, and else favorability looks neither particularly high nor low.

In fact, Fig. 8 suggests more or less an average offering across the board. It is interesting that early-season conditions do look relatively favorable compared to the situation at some other farms. This fact might help explain the relatively vibrant bee community despite only average flower offerings across the season – having decent season-long resources may be more important than having excellent resources for only one part of the season. Furthermore, as mentioned in the blog, various factors in addition to nectar availability contribute to supporting any insect group. For example, accessibility of nesting sites, freedom from pesticide exposure, and across-the-years stability of available resources are probably all important.

## **Management Considerations**

The large wild/fallow area at the west end of the property seems to play an important role in providing abundant flower resources early and late in the season, but not so much in mid-summer, although the diversity of flowers at that time was high. If it were a goal to try to boost the insect abundance at the farm, it might be worth considering the establishment of patches of additional, mid-summer flowers in this area.

## **Potential Next Steps**

Flower visitors can be important to Treadlight flower production for at least two reasons: seed production and biocontrol. Many of the flowers that Treadlight produces are for cutting but, for some, seed production is important. These include the amaranths, mountain-mints, and Partridge Pea, and several flowers we did not watch. One useful next step might be to focus more of our observations on those insect-pollinated flowers that Treadlight is trying to grow for seed so as to understand which flower visitors might be most important for their success. Our initial results suggest that butterflies and hover flies seemed to frequent amaranths while Honey Bees and bumble bees favored Narrow-leafed Mountain-mint and Partridge Pea. (Wasps were also common visitors to some of these, but they are not thought to be major pollinators.) Based on this cursory description, plantings and actions that might enhance butterfly and/or bumble bee abundance could also enhance Treadlight seed production.

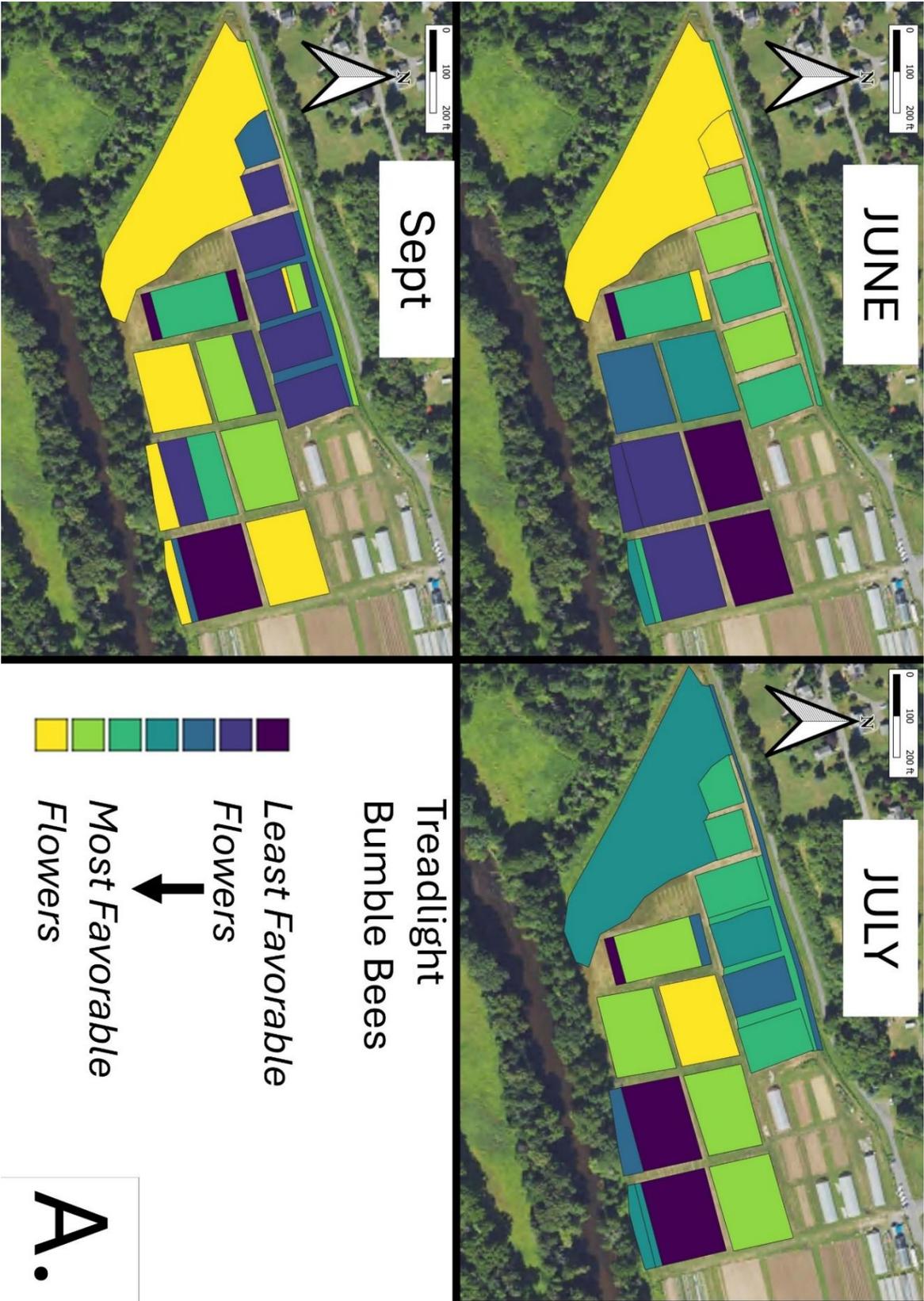


Figure 7A. Flower favorability for bumble bees in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

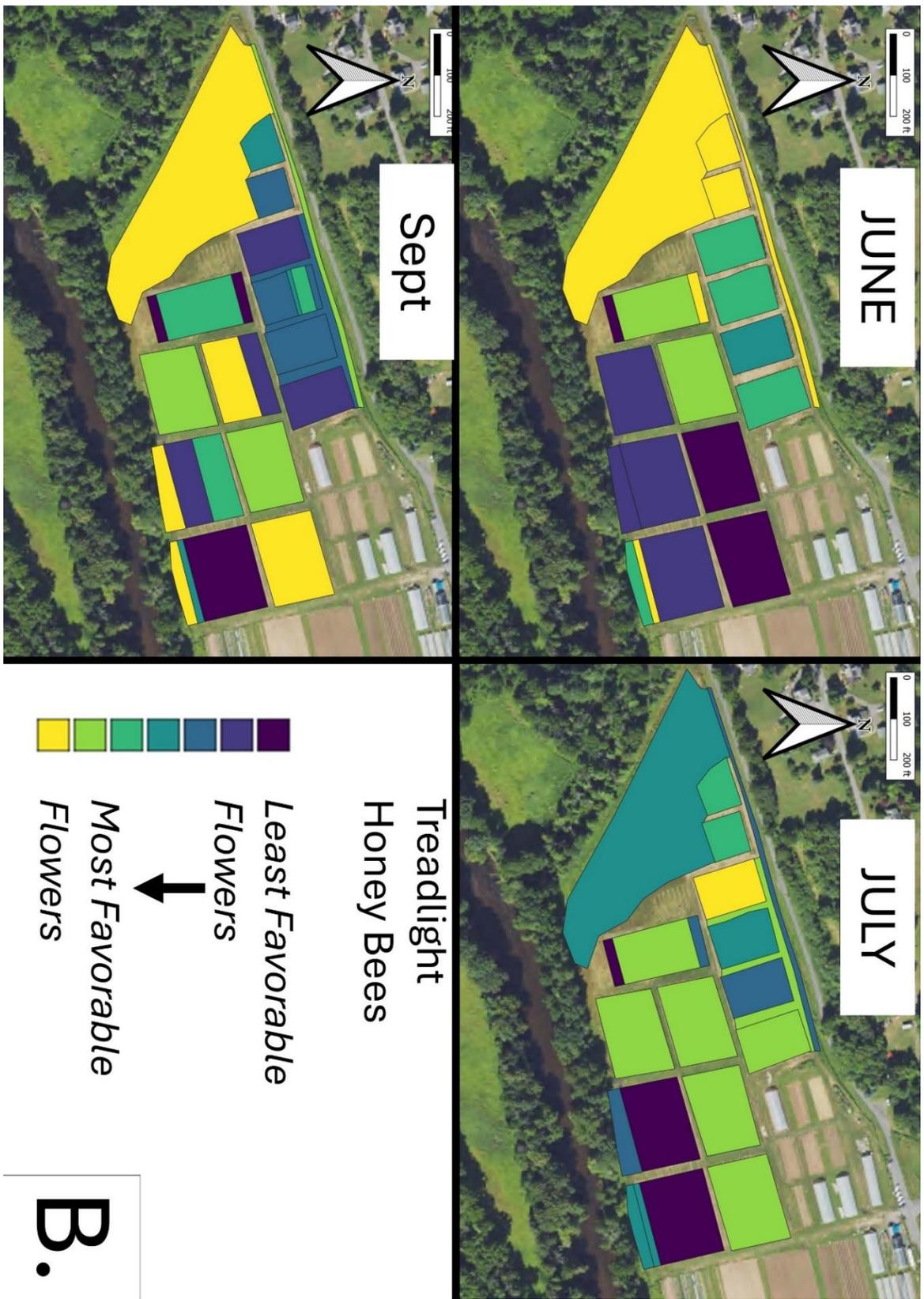


Figure 7B. Flower favorability for honey bees in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

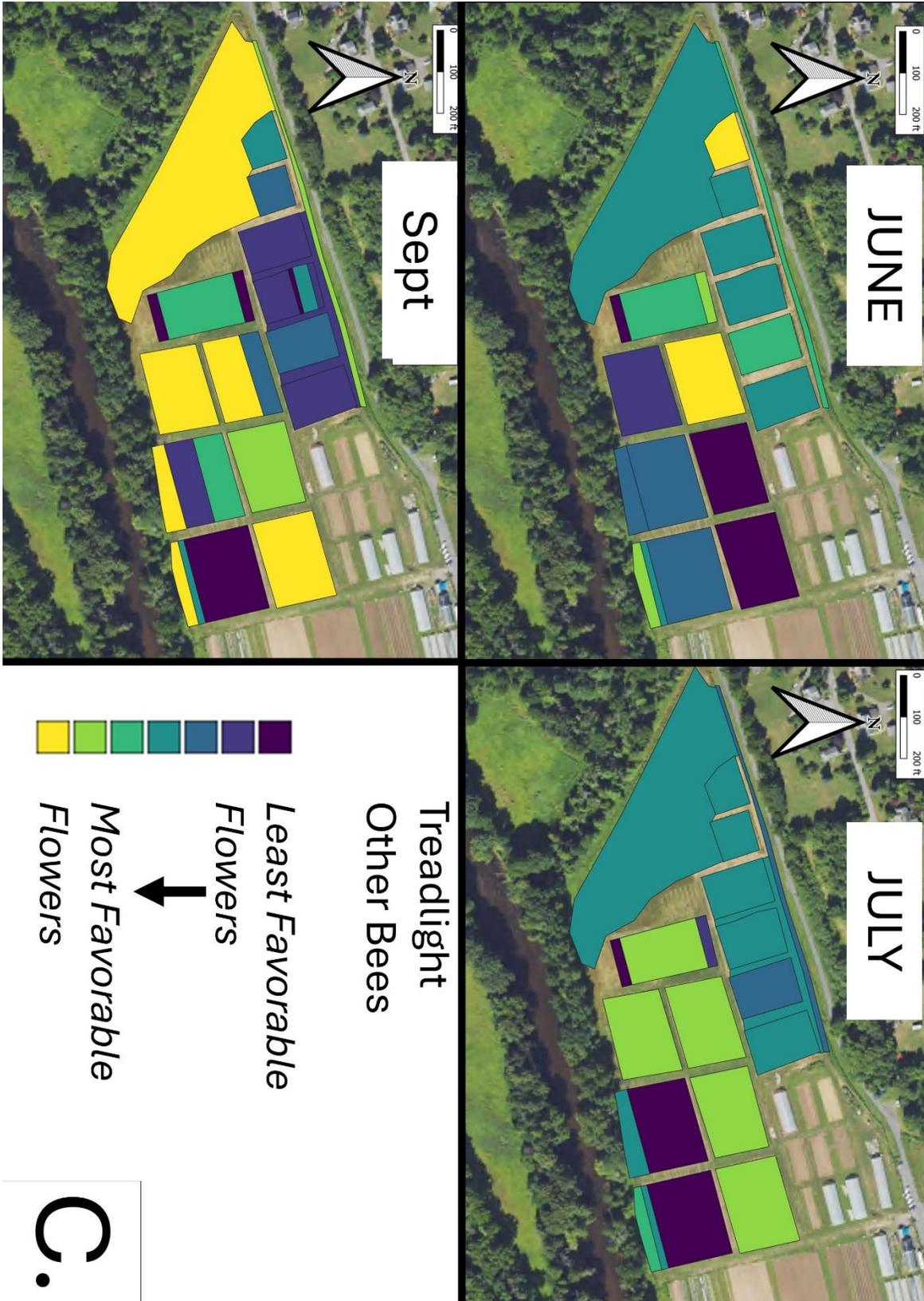


Figure 7C. Flower favorability for other bees in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

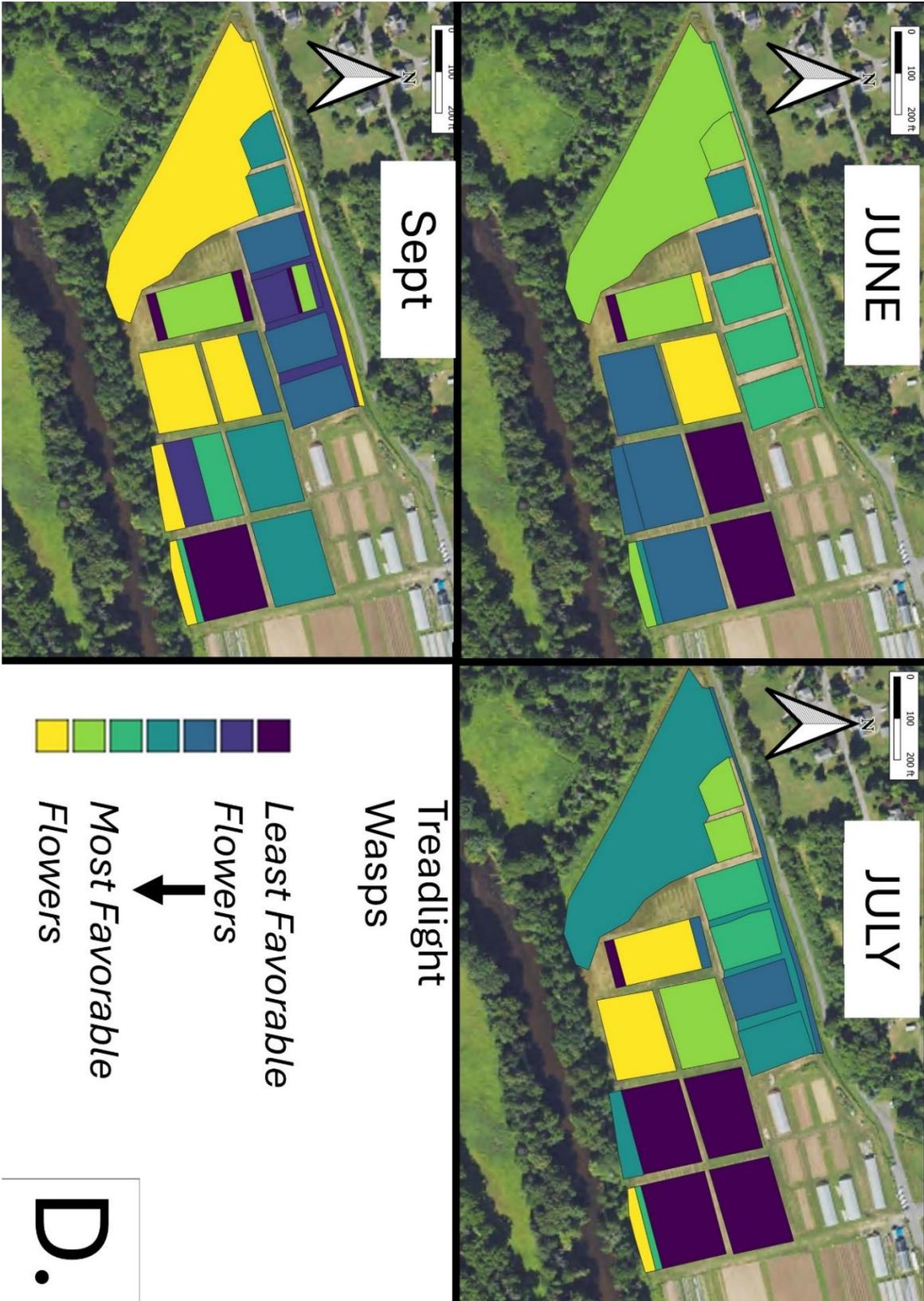


Figure 7D. Flower favorability for wasps in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

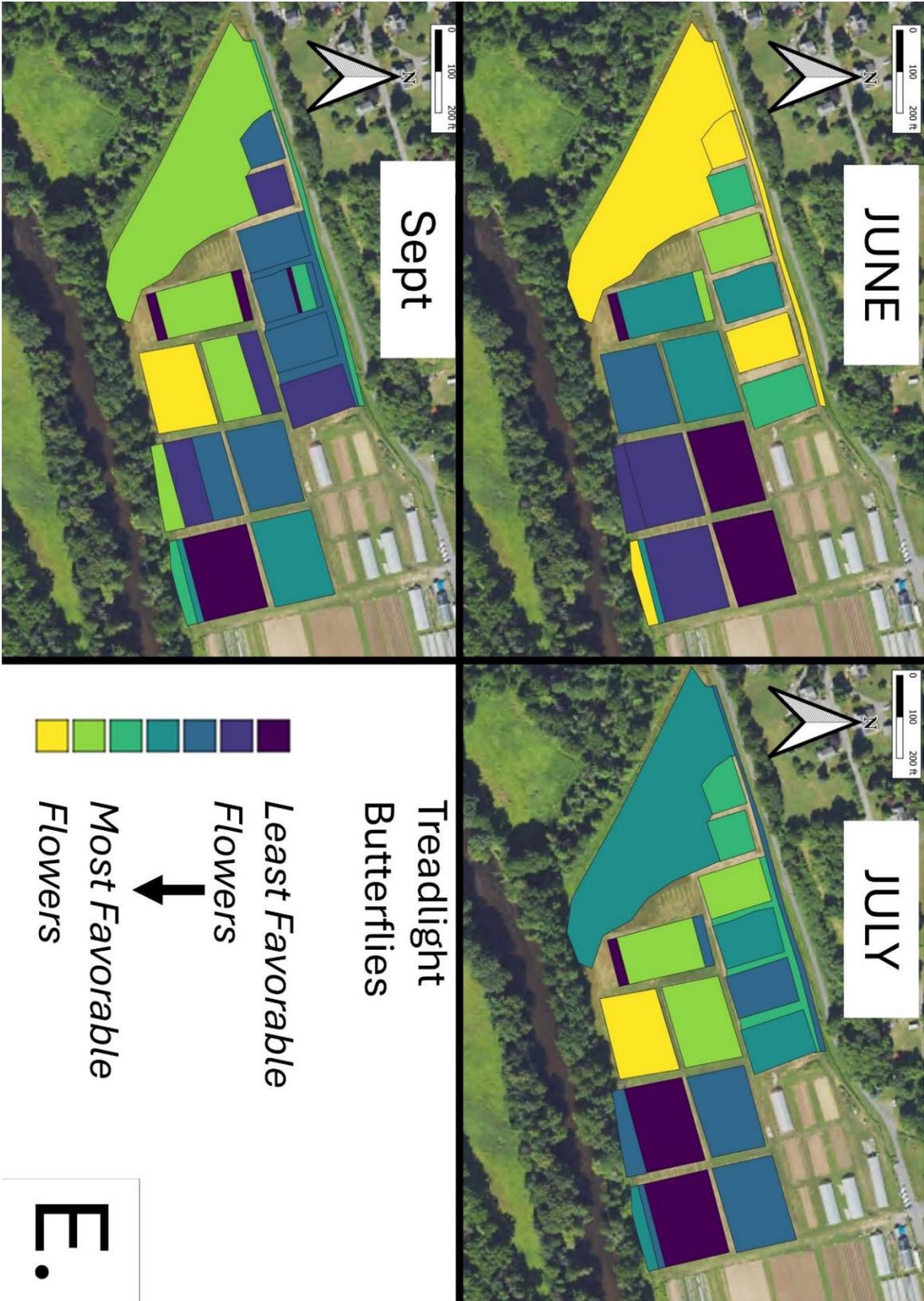


Figure 7E. Flower favorability for butterflies in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

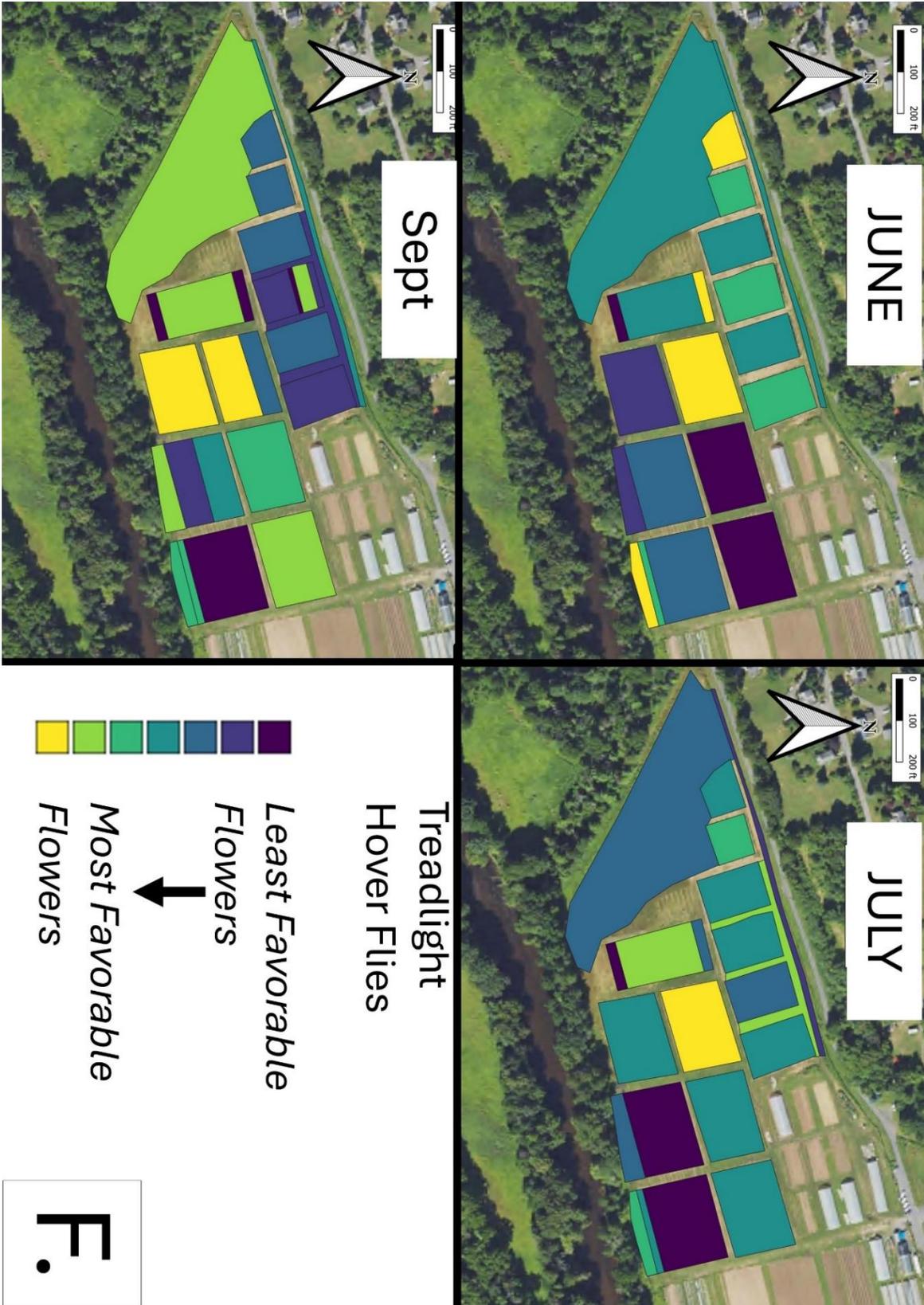


Figure 7F. Flower favorability for hover flies in the different survey units and different months at Treadlight. Generally, darker signifies less favored flowers, and lighter colors mean more favored.

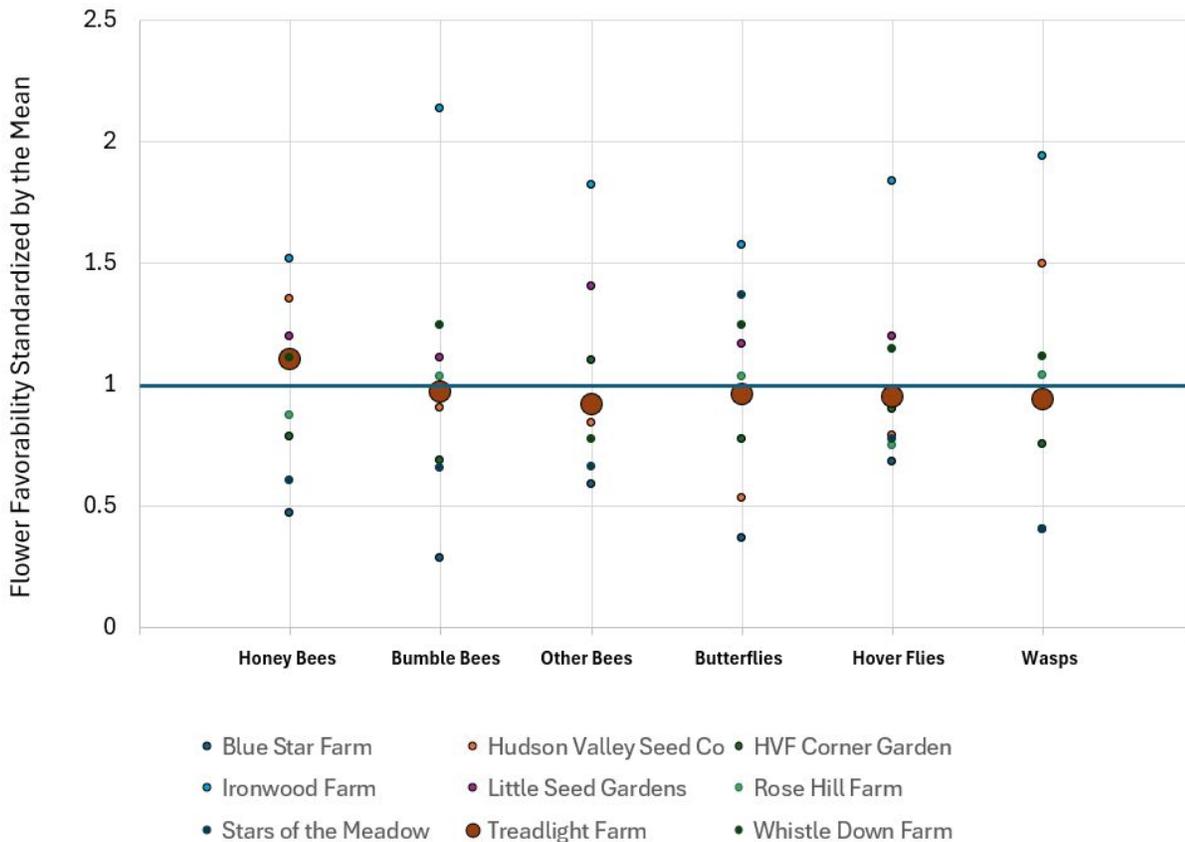


Figure 8. Standardized flower favorability scores by insect group. The solid line at one indicates the mean value across all farms.

The second way that flower visitors may interact with Treadlight production is through biocontrol. For example, while those wasps may not be doing much pollination, parasitoid wasps may infect aphids and so help control their numbers. Likewise, hover fly maggots may eat aphids. In both cases, the adults of the biocontrol insect rely on flower nectar; using Table 1 to select and augment flowers favored by wasps and hover flies could assist in biocontrol. However, again, direct observation could improve our understanding of which creatures are important. For example, which wasps are actually parasitizing aphids and how common is it in the field? Do we observe any evidence of aphid predation by hover fly maggots?

Finally, to explore landscape-scale synergies, it might be interesting to observe the insect fauna of adjacent Long Season Farm, were they willing. Specifically, relative to farms without adjacent flower operations, do we see relatively high numbers of any flower visitors at Long Season and how might those visitors be influencing Long Season’s production?

### Acknowledgment

Our thanks to Matt Dell for encouraging our work.

## **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 Treadlight 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 Treadlight Farm During Three Surveys in 2025**

Common Name by Groups	Scientific Name	Native	Rarity	Ubiquity	Duration	Fl. Season		
			regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	June	July	Aug/Sep
Alexanders, common golden	<i>Zizia aurea</i>	Y cult		4.4	2		x	x
alfalfa	<i>Medicago sativa</i>	N cult		4.0	1	x		
amaranth, red-rooted	<i>Amaranthus retroflexus</i>	Y		24.8	2		x	x
anemone, Japanese	<i>Eriocapitella hupehensis</i>	N cult		6.4	2		x	x
aster, awl	<i>Symphyotrichum pilosum</i>	Y		12.0	1			x
aster, calico	<i>Symphyotrichum lateriflorum</i>	Y		4.0	1			x
aster, New England	<i>Symphyotrichum novae-angliae</i>	Y		4.0	1			x
aster, smooth blue	<i>Symphyotrichum laeve</i> var. <i>laeve</i>	Y cult	*	4.0	1			x
bachelor's button	<i>Centaurea cyanus</i>	N cult		4.4	2	x	x	
bedstraw, hedge (wild madder)	<i>Galium mollugo</i>	N		10.1	3	x	x	x
beebalm, spotted	<i>Monarda punctata</i>	Y cult		4.0	1			x
bergamot, (common) wild	<i>Monarda fistulosa</i>	Y cult (wild)	*	4.8	1		x	
bindweed, black	<i>Fallopia convolvulus</i>	N		6.4	2		x	x
bindweed, hedge	<i>Calystegia sepium</i>	N		6.8	2	x	x	
blackberry	<i>Rubus</i> sp.	N cult		9.8	3	x	x	x
buckwheat	<i>Fagopyrum esculentum</i>	N cult (wild)		4.0	1			x
bupleurum	<i>Bupleurum</i> sp.	N cult		4.0	1			x
burnet 'Pink Brushes'?	<i>Sanguisorba</i> cf. 'Pink Brushes'	N cult		4.3	3	x	x	x
burnet, Japanese (white)?	<i>Sanguisorba</i> cf. <i>tenuifolia</i> var. <i>alba</i>	N cult		4.4	2	x	x	
buttercup, tall	<i>Ranunculus acris</i>	N		4.0	1	x		
campion, bladder	<i>Silene vulgaris</i>	N (cult)		4.0	1	x		
campion, white	<i>Silene latifolia</i>	N		19.9	3	x	x	x
carpetweed	<i>Mollugo verticillata</i>	N		13.1	2		x	x
carrot, wild	<i>Daucus carota</i>	N		35.4	2		x	x
celosia, feather	<i>Celosia argentea</i> ( <i>Plumosa</i> group)	N cult		4.0	1			x
centaurea cultivar	<i>Centaurea</i> sp.	N cult		4.8	1		x	
chickweed, common	<i>Stellaria media</i>	N		4.0	2	x		x
chickweed, mouse-eared	<i>Cerastium fontanum</i> ssp. <i>vulgare</i>	N		4.4	2	x	x	
chicory	<i>Cichorium intybus</i>	N		15.9	2		x	x
cinquefoil, rough-leaved	<i>Potentilla norvegica</i>	N		4.8	1		x	
clover, alsike	<i>Trifolium hybridum</i>	N		9.5	1		x	
clover, red	<i>Trifolium pratense</i>	N (cult)		34.5	3	x	x	x
clover, white	<i>Trifolium repens</i>	N		39.9	3	x	x	x
cock's-comb	<i>Celosia argentea</i> ( <i>Cristata</i> group)	N cult		4.0	1			x

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			regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	June	July	Aug/Sep
coneflower varieties	<i>Echinacea purpurea</i> varieties	N cult		4.0	1	x		
coneflower, eastern purple	<i>Echinacea purpurea</i>	N cult		4.0	2	x		x
coneflower, gray-head prairie	<i>Ratibida pinnata</i>	N cult		4.0	1			x
corydalis, pink	<i>Capnoides (Corydalis) sempervirens</i>	Y cult	*	4.4	2	x	x	
cosmos, garden (white, pink, red)	<i>Cosmos bipinnata</i>	N cult		7.2	3	x	x	x
cosmos, sulfur ('Buddha's Hand')	<i>Cosmos sulphureus</i>	N cult		4.0	1			x
cress	<i>Cardamine sp.</i>	U		4.0	1			x
cress, field penny	<i>Thlaspi arvense</i>	N		16.0	1	x		
dahlia (all varieties)	<i>Dahlia sp.</i>	N cult		10.8	2		x	x
dandelion, common	<i>Taraxacum officinale</i>	N		21.5	3	x	x	x
dock, curly	<i>Rumex crispus ssp. crispus</i>	N		4.0	1	x		
false indigo, blue	<i>Baptisia australis</i>	N cult		4.0	1	x		
fireweed	<i>Chamaenerion angustifolium</i>	Y cult	*	4.0	1			x
fleabane, daisy	<i>Erigeron annuus</i>	Y		40.7	3	x	x	x
fleabane, Philadelphia	<i>Erigeron philadelphicus var. philadelphicus</i>	Y		28.6	1		x	
forget-me-not, woodland	<i>Myosotis sylvatica</i>	N cult		4.8	1		x	
foxglove, Chinese	<i>Rehmannia elata</i>	N cult		4.4	2		x	x
foxglove, purple	<i>Digitalis purpurea f. albiflora</i>	N cult		4.0	1	x		
garlic, field	<i>Allium vineale</i>	N		4.0	1	x		
goldenrod, early	<i>Solidago juncea</i>	Y		8.4	2		x	x
goldenrod, flat-topped	<i>Euthamia graminifolia</i>	Y		17.1	2		x	x
goldenrod, gray	<i>Solidago nemoralis ssp. nemoralis</i>	Y cult		4.0	1			x
goldenrod, smooth	<i>Solidago gigantea</i>	Y		15.5	2		x	x
goldenrod, tall	<i>Solidago altissima ssp. altissima</i>	Y		20.4	2		x	x
goldenrod, wrinkle-leaved	<i>Solidago rugosa var. rugosa</i>	Y		16.0	1			x
gooseneck, white	<i>Lysimachia clethroides</i>	N cult		4.3	3	x	x	x
ground-cherry, clammy	<i>Physalis heterophylla</i>	Y	*	4.8	1		x	
horse-nettle	<i>Solanum carolinense var. carolinense</i>	Y		33.0	3	x	x	x
horseweed	<i>Erigeron canadensis var. canadensis</i>	Y		27.5	2		x	x
hydrangea	<i>Hydrangea sp.</i>	N cult		4.4	2		x	x
Indian-hemp	<i>Apocynum cannabinum</i>	Y		4.4	2	x	x	
Indian-tobacco	<i>Lobelia inflata</i>	Y		27.4	2		x	x
Jerusalem-oak	<i>Dysphania botrys</i>	N		4.4	2		x	x
Joe-Pye-weed, hollow	<i>Eutrochium fistulosum</i>	Y	*	4.8	1		x	

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			regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	June	July	Aug/Sep
Joe-Pye-weed, spotted	<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Y		4.4	2		x	x
knapweed, brown	<i>Centaurea jacea</i>	N-I		4.8	1		x	
laceflower, white	<i>Orlaya grandiflora</i>	N cult		4.3	3	x	x	x
lady's-thumb	<i>Persicaria maculosa</i>	N		12.8	3	x	x	x
lamb's-ear	<i>Stachys byzanthium</i>	Y cult		4.4	2	x	x	
lamb's-quarters	<i>Chenopodium album</i>	N		12.0	1			x
larkspur, rocket	<i>Consolida (Delphinium) ajacis</i>	N cult		4.8	1		x	
lettuce, prickly	<i>Lactuca serriola</i>	N		25.9	2		x	x
live-forever, Eurasian	<i>Hylotelephium telephium</i>	N cult		8.0	1			x
lobelia, great blue	<i>Lobelia siphilitica</i> var. <i>siphilitica</i>	Y cult	*	4.0	1			x
looking-glass, Venus'	<i>Triodanis perfoliata</i>	Y	*	8.0	1	x		
loosestrife, fringed	<i>Lysimachia ciliata</i>	Y (cult)		8.8	2	x	x	
loosestrife, purple	<i>Lythrum salicaria</i>	N-I		15.5	2		x	x
marigold (all varieties)	<i>Tagetes</i> sp. (all varieties)	N cult		4.4	2	x	x	
masterwort	<i>Astrantia major</i>	N cult		4.4	2	x	x	
meadow-rue	<i>Thalictrum</i> sp.	U cult		4.3	3	x	x	x
medic, black	<i>Medicago lupulina</i>	N		8.3	3	x	x	x
milkweed, common	<i>Asclepias syriaca</i>	Y		4.0	1	x		
mountain-mint, Appalachian	<i>Pycnanthemum flexuosum</i>	Y cult		6.4	2		x	x
mountain-mint, clustered	<i>Pycnanthemum muticum</i>	Y cult	*	4.3	3	x	x	x
mountain-mint, hoary	<i>Pycnanthemum</i> cf. <i>incanum</i>	Y cult	*	4.3	3	x	x	x
mountain-mint, narrow-leaved	<i>Pycnanthemum tenuifolium</i>	Y cult	*	4.3	3	x	x	x
mountain-mint, Virginia	<i>Pycnanthemum virginianum</i>	Y (cult)	*	4.0	1			x
mugwort	<i>Artemisia vulgaris</i> var. <i>vulgaris</i>	N-I		20.0	1			x
mullein, common	<i>Verbascum thapsus</i>	N		4.8	1		x	
mullein, moth	<i>Verbascum blattaria</i>	N		4.0	1	x		
nasturtium	<i>Tropaeolum majus</i>	N cult		4.4	2		x	x
ninebark	<i>Physocarpus opulifolius</i>	Y cult	*	4.8	1		x	
painted tongue	<i>Salpiglossis sinuata</i> 'Kew Blue'	N cult		4.4	2	x	x	
pea, Austrian winter (pink fl)	<i>Pisum sativum</i> ssp. <i>arvense</i>	N cult		4.0	1	x		
pea, partridge	<i>Chamaecrista fasciculata</i> var. <i>fasciculata</i>	Y cult	*	4.4	2		x	x
pilewort	<i>Erechtites hieraciifolius</i> var. <i>hieraciifolius</i>	Y		24.0	1			x
pincushion flower (all colors)	<i>Scabiosa atropurpurea</i>	N cult		4.4	2		x	x
plantain, common	<i>Plantago major</i>	N		4.8	1		x	

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

Common Name by Groups	Scientific Name	Native	Rarity	Ubiquity	Duration	Fl. Season		
			regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	June	July	Aug/Sep
plantain, narrow-leaved	<i>Plantago lanceolata</i>	N		8.8	2	x	x	
pokeweed	<i>Phytolacca americana var. americana</i>	Y		4.3	3	x	x	x
porteranthus	<i>Gillenia stipulata</i>	N cult		4.3	3	x	x	x
primrose, common evening	<i>Oenothera biennis</i>	Y		19.9	2		x	x
Queen-Ann's-lace, false	<i>Ammi majus</i>	N cult		4.4	2		x	x
quickweed	<i>Galinsoga sp.</i>	N		18.1	3	x	x	x
quince, flowering	<i>Chaenomeles speciosa</i>	N cult		4.3	3	x	x	x
ragweed, common	<i>Ambrosia artemisiifolia</i>	Y		28.0	1			x
rose, multiflora	<i>Rosa multiflora</i>	N-l		4.0	1	x		
shepherd's-purse	<i>Capsella bursa-pastoris</i>	N		4.0	1	x		
shiso	<i>Perilla frutescens var. crispa</i>	N cult		4.0	1			x
smartweed, dock-leaved	<i>Persicaria lapathifolia</i>	Y		13.5	2		x	x
smartweed, low	<i>Persicaria longiseta</i>	N		42.7	2		x	x
smartweed, Pennsylvania	<i>Persicaria pennsylvanica</i>	Y		4.0	1			x
snapdragon, common	<i>Antirrhinum majus</i>	N cult		4.4	2	x	x	
sneezeweed, common	<i>Helenium autumnale</i>	Y cult	*	4.0	1			x
sorrel, common yellow wood	<i>Oxalis stricta</i>	Y		58.0	3	x	x	x
sow-thistle	<i>Sonchus sp.</i>	N		7.2	3	x	x	x
speedwell, long-leaved	<i>Veronica longifolia</i>	N cult		4.0	1	x		
St. John's-wort, common	<i>Hypericum perforatum ssp. perforatum</i>	N		8.8	2	x	x	
strawflower, garden	<i>Xerochrysum bracteatum</i>	N cult		4.4	2	x	x	
sunflower, thin-leaved	<i>Helianthus decapetalus</i>	Y	*	6.4	2		x	x
thale-cress, mouse-eared	<i>Arabidopsis thaliana</i>	N		6.0	2	x		x
thimbleweed, tall	<i>Anemone cf. virginiana</i>	Y cult	*	6.4	2	x	x	
thistle, bull	<i>Cirsium vulgare</i>	N-l		4.8	1		x	
thistle, Canada	<i>Cirsium arvense</i>	N-l		14.1	3	x	x	x
tickseed, whorled	<i>Coreopsis verticillata</i>	N cult		4.3	3	x	x	x
tick-trefoil, showy	<i>Desmodium canadense</i>	Y	*	4.0	1			x
tomato	<i>Solanum lycopersicum</i>	N cult		4.4	2		x	x
velvetleaf	<i>Abutilon theophrasti</i>	N		6.8	2		x	x
vetch, tufted or hairy	<i>Vicia cracca/villosa</i>	N		4.0	1			x
violet, European field	<i>Viola arvensis</i>	N		16.0	1	x		
viper's-bugloss	<i>Echium vulgare</i>	N		8.5	3	x	x	x
wild-cucumber	<i>Echinocystis lobata</i>	Y		4.0	1			x

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Common Name by Groups	Scientific Name	Native	Rarity	Ubiquity	Duration	Fl. Season		
			regionally rare/uncommon	avg. % of units during flowering season	# months in bloom (of 3)	June	July	Aug/Sep
yarrow (pk or yellow)	<i>Achillea millefolium</i> varieties	Y cult		6.4	2	x	x	
yarrow, common	<i>Achillea millefolium</i>	Y (cult)		4.0	1			x
yellowcress, marsh	<i>Rorippa palustris</i> ssp. <i>palustris</i>	Y	*	4.8	1		x	
zinnia, garden	<i>Zinnia</i> sp.	N cult		4.4	2		x	x
unknown sp. 3 (white petals, entire)	Unknown sp. 3 ( <i>Dianthus</i> sp?)	N cult		4.4	2	x	x	