

HYG articles June 18

Modified Growing Degree Days (Base 50° F, March 1 through June 17)

Station Location	Actual Total	Historical Average (11 year)	One- Week Projection	Two-Week Projection
Freeport	704	739	858	1014
St. Charles	654	696	800	949
DeKalb	692	797	851	1010
Monmouth	861	860	1019	1178
Peoria	916	906	1080	1248
Champaign	1024	937	1194	1367
Springfield	1071	1021	1247	1427
Perry	1055	952	1216	1386
Brownstown	1120	1094	1297	1481
Belleville	1223	1115	1394	1575
Rend Lake	1287	1210	1471	1661
Carbondale	1287	1145	1458	1635
Dixon Springs	1317	1214	1491	1671

Insect development is temperature dependent. We can use degree days to help predict insect emergence and activity. Home, Yard, and Garden readers can use the links below with the degree day accumulations above to determine what insect pests could be active in their area.

[GDD of Landscape Pests](#)

[GDD of Conifer Pests](#)

Degree day accumulations calculated using the [Illinois IPM Degree-Day](#) Calculator (a project by the Department of Crop Sciences at the University of Illinois and the Illinois Water Survey). –*Kelly Estes*

Swarms of Buffalo Gnats

Insects can swarm for a variety of reasons. Bees swarm when they are preparing to leave their hive and establish a new one, locusts swarm when food becomes scarce and they need to relocate to feed, lovebugs swarm to find a mate efficiently and, for insects like buffalo gnats (also called black flies, Simuliidae), sometimes the local conditions are just right to support a larger than usual population. This year, Illinois has had cool, rainy conditions which are beneficial for buffalo gnats. Flooding and sustained high water levels may provide additional resources and reproductive habitat for the flies.

Waterway restoration efforts can also create cleaner, healthier, aquatic ecosystem which benefit all aquatic animals, including buffalo gnats.



Left: Buffalo gnat adult, Darren Blackford, USDA Forest Service, Bugwood.org. Right: Black fly larvae, Whitney Cranshaw, Colorado State University, Bugwood.org

Life Cycle

Buffalo gnat adults lay eggs in flowing water or on plants trailing into flowing water. After hatching, the larvae attach silk to substrate, rocks or concrete surfaces submerged in the water and use hooks on their abdomen to cling to the silk. The larvae have fan-like structures near their mouths that they use to collect and feed on algae and small bits of organic matter. Eventually, the young flies will pupate and adults will emerge from the pupal casing, floating to the surface of the water in a small bubble of air.

As adults, buffalo gnats will mate, feed and lay eggs. Adults feed mainly on pollen and nectar from flowers but after mating, females require a blood meal so their eggs can mature. Unfortunately, that blood meal can come from livestock (mammals or poultry), pets or humans.

Control and Bite Prevention

Controlling buffalo gnat larvae usually is not possible. The larvae develop in flowing waterways that are protected by federal and state laws. The addition of pesticides to these habitats could result in fish kills or harm to other wildlife that use those waterways. The water from these habitats can also be used as drinking water for local communities so addition of pesticides also has the potential to harm people. As a result, the best strategy to deal with buffalo gnats is to prevent biting.

Buffalo gnats are active during the day and can travel long distances to feed. People who want to avoid being bitten can use repellents containing DEET, wear permethrin treated clothing or a head net to keep the flies away from their face and neck. Buffalo gnats are attracted to dark colors and cannot bite through clothing so wearing light colored clothes with long sleeves can help prevent bites. Remaining indoors when populations are especially high can also help avoid bites because buffalo gnats rarely move into homes.

If buffalo gnat populations are large enough they can also cause problems for pets and livestock. Keeping pets indoors, when possible, can help prevent bites. In dense fly populations, excessive blood feeding, disease transmission to poultry or inhalation of too many flies can lead to the loss of livestock. Moving livestock into barns or other enclosed housing structures can reduce the impact of buffalo gnats. If that is not possible or practical, repellants or pesticide treatments can help ensure livestock safety.

Buffalo gnats usually live for a short time in their adult life stage. After a few weeks of activity, their numbers will decline and we will not see them again until next year.

Hover Flies: Not sweat bees but pollinators and aphid eaters

Hover flies (aka syrphid flies or flower flies) are covering any nectar-producing flower in the garden this spring. These flies, commonly mistaken for bees, are one of our most prolific pollinators and aphid eaters in the Illinois garden but care must be taken to protect them when spraying pesticides.



Adult Hover Fly (Photo courtesy of Ken Johnson)

Hover flies are excellent fliers, flying backwards and forwards and hovering over their beloved flowers. Hover flies are yellow and black bee-mimics that feed on pollen, nectar and honey dew (frass of phloem feeders like aphids.) They mimic bees and or wasps for protection against predators such as birds. They are easily distinguished from bees because they are shiny while bees are fuzzy. They are easily distinguished from wasps in that they have two wings and wasps have four.



Adult Hover Fly (Photo courtesy of Phil Nixon)

With many generations per growing season, they are here to stay. The female hover fly will usually lay her eggs on or near aphid colonies and in two to three days the larvae will hatch. The larvae, which is technically a maggot, is muted green, legless, worm-like and can be found on the undersides of the leaves eating aphids and other small soft bodied insects like thrips, scales, caterpillars and mealybugs. These larvae are great garden warriors and can be put in the same category of ladybugs and lacewing larvae in terms of the effectiveness in demolishing an aphid population. The larvae grasp the prey with their jaws, hold them up in the air, suck out their body contents and toss the exoskeleton aside. The larvae feed for about seven to ten days before they pupate. According to Cornell University, each larva can eat up to 400 aphids. So, if you see an aphid or mealybug infestation in your garden be sure to turn over the leaves to look for these beneficial maggots before you spray.



Hover Fly Larva (Photo courtesy of Margaret Hollowell)

If you feel the pest population is too high and need to spray, try to avoid broad-spectrum pesticides. If beneficial insects are detected, oils, soaps and microbial pesticides like Btk are best option to use in your pest management plan. Although chemicals that are derived from nature will still kill some beneficial insects they do not have long residuals on the plants and these insects will repopulate the garden. Note that these are not as effective as other pesticide options but will ensure good bugs are eliminated from the garden.

Neem oil is a biological pesticide derived from the seeds of neem trees and is used to control whiteflies, mealybugs, aphids, leafhoppers, mites and scales on ornamentals, trees, shrubs and in the vegetable garden, exhibits fungicidal properties. The insects must eat the treated plant to be affected so most of the time bees and pollinators are not harmed.

Potassium salts of fatty acids are the active ingredient in insecticidal soap. Insecticidal soaps control. Insectidal soap is more effective on soft bodied insects like aphids, whiteflies, and mites. Flying insects may not be as susceptible but their immatures may be killed.

Microbials are derived from microorganisms that cause disease only in specific insects. *Bacillus thuringiensis* (Bt) subspecies *kurstaki* (Btk) controls leaf-feeding caterpillars. This microorganism occurs naturally in dead or decaying organic matter in the soil. Because it targets caterpillars, it does not kill beneficial insects and pollinators.

[\(Kelly Allsup\)](#)

Wild Parsnip – A Weed to Know and Avoid

Wild parsnip (*Pastinaca sativa*) has been in the news recently, but many still do not know about this plant and the harm it can cause. It seems to be quite common now in central Illinois, so many have likely seen this plant before. Familiarity can breed complacency, unfortunately. The roadsides along I-72 between Springfield and Champaign were a full of it last week during a drive. Yet, ironically, that same day a reporter in Chicago was trying to contact me about the recent discovery of this weed there where it is much less common than in rural areas. The Chicago Tribune had run a story on it the day before. A few days before that, I identified a plant as being wild parsnip for the University of Illinois Plant Clinic. Who knew that the same inquiry would send the media's gears into motion? And mine as well as the case may be...



Wild parsnip in bloom

Wild parsnip is somewhat of a pretty plant with an attractive flower. Any unsuspecting person who cuts that flower for a bouquet or cuts back the tall stems could learn quickly one reason why this plant is concerning. Another name for this plant is poison parsnip, but it is not really poisonous so to speak. It has the ability to cause sun-induced blistering or “burns” on the skin. The sap contains chemicals (furocoumarins) that cause phytophotodermatitis. Basically, if your skin absorbs these chemicals and is then exposed to sunlight, an interaction takes place; the result is reddened burned-like skin and/or blisters.

Another reason this plant is concerning is its ability to spread rapidly. It is listed as an “invasive species of major concern” in the book “Invasive Plants of the Upper Midwest.” Illinois residents have witnessed populations explode over the last decade or so. Early detection and eradication is essential to prevent future spread and combat current infestations.

We’ve also seen teasel spread rapidly in recent years. Like teasel, wild parsnip is a monocarpic perennial. That means this plant will not die until it has flowered and produced seed. Seeds are then viable in as little as 3 weeks after flowering. Data has shown seed to be mature by mid-July for northern and central Illinois. Seed dispersal typically occurs in the fall. The plant then dies, but seeds can remain viable in the soil for 4 years.

Plants begin as a rosette of leaves and remain as such for at least one year. Rosette leaves are upright and average 6 inches in height. Mature plants can reach 4 feet or more in height and have leaves that are pinnately compound, alternate on the stem, divided once into 5 to 15 leaflets with coarsely sawtoothed edges, and hairless. Leaflets are found in pairs. Flower heads are yellow, 2 to 6 inch wide umbels and are found at the tops of stems and branches. Often lateral blooms reach taller than the central blooms do. Individual flowers have 5 petals and are quite small with hundreds per plant. Blooms typically first appear in early June, but can occur through late summer. Wild parsnip can be found in a wide range of growing conditions but it does not tolerate shade. A close relative, poison hemlock, can often be found growing alongside wild parsnip. Although similar in stature, it has white, umbrella-shaped blooms.



Wild parsnip leaves

Wild parsnip can be easily confused with two yellow blooming, native prairie species: prairie parsley and golden Alexander. Compared to wild parsnip, prairie parsley has smaller, more rounded flowers and golden Alexander stems are shorter with umbels (flowers) that are less open.

Recently, I wrote about increased Butterweed (cressleaf groundsel) populations causing fields to be strikingly yellow. By now, many of those fields have been planted or at least sprayed, and with time, butterweed blooms have faded. Another yellow weed in bloom right now along roadsides that is a common occurrence in the state is yellow sweet clover, but the flowers look completely different than that of wild parsnip. Flowers are “pealike” in clustered spikes in the top 4 inches of elongated stems.

Clearly, wild parsnip can be misidentified or confused with several other plants. Uninformed landscape and roadside managers are certainly at risk of being injured by the sap. Proper identification and then

covering the skin when working with this plant is essential. Learn this plant. Educate your employees, neighbors, family, and friends. Most are familiar with “leaves of three, leave it be” when it comes to poison ivy. There aren’t any cute rhymes for wild parsnip but it should be treated similarly. Always handle unfamiliar plants with caution. A good weed ID book can be beneficial.

While hand pulling or working around plants that cause skin conditions, wear long pants, long sleeves, shoes with socks, and waterproof or heavy gloves. Working after sunset can help prevent blistering and burns too. While mowing can reduce seed production of wild parsnip, string trimmers are not recommended as small pieces can be thrown towards unprotected skin easily. Mowing should be used after peak flowering but before seeds have set. Otherwise, seeds will be distributed by the mower. Resprouting can occur after mowing, and repeated mowing may be necessary to prevent flowering. The cut flowering stems of many weeds such as teasel are capable of continuing to develop seeds before they eventually die. I trust that wild parsnip would be no different. Mowers that chop stems more thoroughly than say a sickle bar mower could be more effective with control, however, more cut pieces means more risk of exposure to the sap. Managers should protect themselves accordingly.

In moist conditions, plants may be easily hand-pulled. Before flowering, rosettes can be killed using a sharp shovel to cut through the root, 1-2 inches below the ground. Removing and gathering or bagging up seed heads from the site prior to dispersal can work to greatly decrease populations over time.

Applying a herbicide to the rosette in the early fall or late spring (before flowering) can be effective. Repeat applications may be necessary. Suggested options include 2,4-D, dicamba, triclopyr, or metsulfuron. Spot treatments of glyphosate can be effective as well. As always, carefully read and follow all label directions.

For more in-depth information on controlling wild parsnip, check out this blog post from our colleagues at the University of Wisconsin-Madison:

<https://ipcm.wisc.edu/blog/2016/07/wild-parsnip-an-expanding-problem-along-roadsides-in-wisconsin/>

(Michelle Wiesbrook)

References:

Invasive Plants of the Upper Midwest by Elizabeth Czarapata

Management of Invasive Plants and Pests of Illinois by Tricia Bethke, Chris Evans, and Karla Gage

Peach Leaf Curl

Peach leaf curl has been a common concern reported by many Extension offices this spring. Peach leaf curl is a fungal disease caused by *Taphrina deformans* and is one of the most commonly encountered diseases of peaches and nectarines, especially in home plantings. It primarily affects the foliage, but may also affect blossoms, young twigs, and fruit.

Peach leaf curl overwinters as dormant spores in bud scales and bark crevices. The pathogen infects leaves as the buds begin to swell in the spring. Infected leaves become thickened, leathery, and will also be distorted and puckered. The distorted areas are quite noticeable because they will become pink, red, or purple in color. Once the fungus begins to produce spores, the affected areas will turn grayish white

and appear velvety. Infected leaves will eventually turn yellow and fall off of the tree. New leaves may be produced in June or July to replace the fallen leaves, especially in severely infected/defoliated trees.



Peach Leaf Curl, Photo Courtesy of Von Gittermeier

If fruit becomes infected, it will also be distorted, and the infected area will lack peach fuzz making them look like it has been polished. As the fruit grows larger it will often begin to crack. Infected fruit will usually prematurely drop as well.

Peach leaf curl does not normally kill trees, but it may weaken severely infected trees. This can lead to infection by other diseases, increased chances of winter injury, and a reduced crop the subsequent year. Fortunately, plants will only become infected one time during the growing season. Any new growth will not be infected.

There is nothing that can be done for trees infected by peach leaf curl this year outside of taking steps to maintain tree vigor (fertilizing, irrigating when needed and heavily thinning fruits to reduce demand on the tree). To prevent infections next year, apply a dormant spray of chlorothalonil, or a copper based product such as Bordeaux mixture to trees in late fall after leaves have dropped, or very early spring before the buds begin to swell. The fungicides will kill spores on bark and buds and good coverage is important. Once buds begin to swell it is too late to prevent infection. When making pesticide applications make sure to read and follow all label directions.

Ken Johnson (Edited by [Travis Cleveland](#))

Record Keeping

Record keeping is an essential component of an integrated pest management plan. Records may include details on pest movement, site conditions, and successes or failures of treatments. These records allow applicators to determine which sites are more prone to pest issues and be able to track effective treatment options. While essential to successful pest management, there are also legal reasons to maintain records, especially when applying Restricted Use Pesticides (RUPs). There are specific types of information that you are required to maintain when using pesticides. Even though not necessary for all restricted use pesticides (RUP), wind direction and wind speed can be useful information.

Commercial Applicators

According to the Illinois Pesticide Act, all commercial applicators must maintain records of RUP applications they make. The following information must be recorded and retained for two years from the date of application and be recorded within 14 days following the pesticide application. Also, federal regulations require all commercial applicators to furnish a copy of either the state or federally required records to the customer within 30 days of the RUP application.

1. Pesticide product name and its U.S. EPA registration number
2. Amount of chemical concentrate applied per unit (e.g., pounds or ounces per acre)
3. The crop, commodity, or site it was applied to.
4. The location it was applied (this can be as specific as the legal property description)
5. Date of application (M/D/Y)

6. The name and certification number of the applicator

Pesticide Dealers

According to the Illinois Pesticide Act, pesticide dealers must retain a record of each RUP sale for two years. The document must include the following information:

1. Purchaser's name, address, and certification number and type of certification if appropriate
2. Quantity and kind of pesticide sold
3. Date of sale

Since there are no standard forms required for any of these records, you can use any system you like, as long as the required information is included and it is legible and accessible to those who have a legal right to see it. Many pesticide companies, personal protection equipment suppliers, and other organizations offer record-keeping sheets or apps. Again, regardless of how you keep records, be sure you meet the requirements as outlined. Here are some great sources below-

<https://www.ams.usda.gov/rules-regulations/pesticide-records>

<https://extension.psu.edu/recordkeeping-form-for-pesticide-applicators>

<https://cropwatch.unl.edu/2019/easy-use-pesticide-recordkeeping-resources>

For more information about any of these laws, contact the Illinois Department of Agriculture or your local University of Illinois Extension office. Also, you can find a good deal of information about these laws at our Pesticide Safety Education website (<http://www.pesticidesafety.uiuc.edu>).

(Maria Turner)

Original published- <http://bulletin.ipm.illinois.edu/pastpest/articles/200111i.html>

