

# What's Growing On?

## BASTROP COUNTY MASTER GARDENER ASSOCIATION

October 2022

### Floodwater Mosquitoes

By Wizzie Brown

If you've been outside lately, you have most likely noticed the giant mosquitoes that seem to want to pick people up and carry them off. With recent weather conditions, floodwater mosquitoes have emerged in large numbers.



Floodwater mosquitoes lay their eggs above the water line in ponds, ditches, pastures, or other places where water collects. The eggs can remain in dry areas and when these areas are flooded the eggs hatch, leading to swarms of hungry mosquitoes. These mosquitoes are larger than mosquitoes we are used to around our homes and can swarm in high numbers.

Floodwater mosquitoes won't last forever, but other mosquitoes called container breeding mosquitoes emerge when floodwaters begin to recede. Many of these species are ones that we are used to seeing around our homes.

While floodwater mosquitoes can be difficult to predict and manage, as they can fly up to 5 miles for a blood meal, container breeding mosquito problems can be reduced. Eliminate all sources of standing water. Containers such as watering cans, buckets and bottles can turn into mosquito breeding grounds. Water should be drained from bird-baths, gutters, flowerpots and pet dishes at least once a week. Children's wading pools should be emptied of water at least once a week and stored so they cannot collect water when not in use. Tree holes should be filled in with sand, mortar, expand-

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### Don't Leave Leaves!

By Howard Nemerov

'Tis the season when you can recycle, reduce landfill, and perform community service while also building better garden soil for free. Collecting fall leaves is your golden opportunity.

#### Recycling leaves reduces landfill

Every fall, many homeowners rake fallen leaves off their lawns, place them in plastic bags, and haul them to the curb for garbage pickup. Leaf removal is so prevalent that Texas A&M AgriLife Extension published an online composting primer to reduce up to half of our fall garbage stream.<sup>1</sup>



*Organic landscape materials, including leaves, woody trimmings and grass clippings often contribute significantly to a communities' annual solid waste. During peak leafdrop in fall when residents are bagging and placing leaves curbside, organic materials may account for as much as 50% of the incoming landfill volume.<sup>2</sup>*

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## Floodwater Mosquitoes *(Continued from page 1)*

ing foam, or drained after each rain. Leaky faucets and pipes located outside should be repaired. Fill in low lying areas in the lawn with topsoil or sand, or install a French drain.

Areas that cannot be drained, such as ponds or large rain collection systems, can be stocked with mosquito fish that eat mosquito larvae. Dunks can also be used in these areas. Dunks are a small, donut-shaped product that contains *Bacillus thuringiensis* var. *israeliensis*. They disrupt the life cycle of the mosquito and are non-toxic to humans, amphibians and fish.

When outside, wear loose-fitting, light colored clothing with long sleeves & long pants. Repellants containing active ingredients such as DEET, Picaridin, IR3535, or oil of lemon eucalyptus can be effective to keep mosquitoes from biting when activities cannot be rescheduled.

For more information or help with identification, contact Wizzie Brown, Texas AgriLife Extension Service Program Specialist at 512.854.9600.

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## Don't Leave Leaves! *(Continued from page 1)*

Even if you don't want to compost, spreading leaves in the garden has many benefits. In nature, leaves break down to become "a source of soil-building organic matter."<sup>3</sup> Leaves also provide free mulch, which conserves moisture—think reduced irrigation—protects soil from hot sun and winds, and prevents soil erosion by protecting it from direct impact during heavy rains.<sup>4</sup>

### Community Service

Before a recent rain, this drain had leaves piled all along the opening. After over three-quarters of an inch of rain, only a few remain on the downslope end. Upslope, you can see more leaves waiting for enough rainfall to wash them down the drain.



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## Volunteering

Master Gardeners volunteer in the community to teach others about horticulture. We follow the research-based recommendations of Texas A&M AgriLife Extension. Members who complete 50 hours of volunteer service in the year after training earn the designation "Texas Master Gardener." We use our title only when engaged in Texas A&M AgriLife Extension activities.

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There are no drains like this in a forest environment, so leaves remain where they fall. Rainfall initiates the decomposition process, returning nutrients to the soil.

Leaves contain nitrogen and phosphorus. The Environmental Protection Agency considers both pollutants that rainfall carries into waterways.<sup>5</sup> Leaf collection is a win-win community service: Your garden gets free nutrients; taxpayers don't pay for clearing clogged sewer systems; local streams remain cleaner.

## Save your beneficial insects!

Xerces Society notes that many beneficial insects, including pollinators, use leaf litter to survive in winter. For example, Swallowtail butterflies “disguise their cocoons and chrysalises as dried leaves” to hide among real leaves.<sup>6</sup> The Goatweed Leafwing butterfly (*Anaea andria*) blends in with leaves while resting. The Common Pill Bug (*Armadillidium vulgare*) is a decomposer that prefers decaying plant matter. While sometimes considered pests because they chew on tender new seedlings, providing leaves for them may reduce this problem because you're providing their preferred food.<sup>7</sup>

Xerces Society recommends not shredding fall leaves, as insects prefer a loose texture to better burrow into to nest in nature.

## Free nutrients

Each fall, I collect neighborhood leaves collecting in the gutters, all within 50 yards from our home. Neighborhood trees include mostly oaks, elms, and pecans. I shredded some and sent a sample to Texas A&M AgriLife Extension's soil testing service.<sup>8</sup> Results showed that leaves are 1.6% nitrogen, with small amounts of phosphorus and potassium: the three main plant nutrients. Leaves also contain over 4% calcium, an important nutrient for tomatoes and other vegetables, and other micronutrients. As leaves decompose, they act as slow-release fertilizer to your garden, reducing the need to buy fertilizers.

## Many benefits of mulching

Leaves provide long-term benefits that improve your soil by creating a balanced, healthy environment for plants. Mulching with leaves provides numerous “vital” benefits by:

- Preventing soil erosion on sloping surfaces.
- Allowing soil to soak up more water from rain or irrigation.
- Slowing the rate at which soil dries out during hot weather.
- Reducing or eliminating weeds that compete for water and nutrients.
- Keeping soil cooler in the summer, and insulating perennial and crop roots in the winter.<sup>9</sup>

Perhaps more importantly, mulching with raw organic matter stimulates microbial activity, creating a “living” soil. The USDA Natural Resources Conservation Service published an online primer on the soil food web, an “integral part of landscape processes.”

*An incredible diversity of organisms make up the soil food web. They range in size from the tiniest one-celled bacteria, algae, fungi, and protozoa, to the more complex nematodes and micro-arthropods, to the visible earthworms, insects, small vertebrates, and plants.<sup>10</sup>*

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You could till in leaves to increase organic matter in your garden soil, but tilling also disrupts the soil food web, driving organisms underground that work best near the soil surface, while exposing organisms that work best deeper in the soil. Tilling makes you dependent on tilling, because it disrupts the natural decomposition system that's been fertilizing forests and prairies for eons.

Tilling in leaves also disrupts soil nutrient levels. Leaves are high in carbon; microbes need nitrogen to break them down into usable nutrients. A properly prepared compost pile provides that balance of nitrogen and carbon necessary for microbes to produce a nutritious end product: compost. In the soil, microbes use available nitrogen to decompose carbon-rich materials, placing plants at risk of nitrogen deficiency.<sup>11</sup> This is why mulching builds the best soil over time.



A better option is long-term planning that doesn't require tilling: Collect and stockpile leaves, then spread as needed to maintain a mulch cover. Nature takes over tilling duties, bringing in organisms that break down organic matter and release nutrients to feed your plants. If you build it, they will come!

## Endnotes

<sup>1</sup> Don't Bag It™ – Compost It!!” Texas A&M AgriLife Extension Service. Accessed October 16, 2020. <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/>

<sup>2</sup> “Introduction | Don't Bag It™.” Texas A&M AgriLife Extension Service. Accessed October 16, 2020. <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/introduction-dont-bag-it/>

<sup>3</sup> Ettinger, Terry. “Improve Your Soil by Raking Less.” Fine Gardening – Issue 117. Accessed October 1, 2022. <https://www.finegardening.com/project-guides/gardening-basics/improve-your-soil-by-raking-less>

<sup>4</sup> Beck, Malcolm, Parsons, Jerry M., Roberts, Roland E. “Mulches for Enhanced, Low-Cost, Low-Maintenance Landscapes.” Texas A&M AgriLife Extension. Accessed February 3, 2021. <https://aggie-horticulture.tamu.edu/archives/parsons/drought/mulches.html>

<sup>5</sup> “Nutrient Pollution.” U.S. Environmental Protection Agency. Accessed December 30, 2020. <https://www.epa.gov/nutrientpollution/sources-and-solutions>

<sup>6</sup> Xerces Society. “Leave the Leaves: Winter Habitat Program.” Accessed October 1, 2022. <https://xerces.org/leave-the-leaves>

<sup>7</sup> Seiler, Deborah. “Leave the Leaves! These Invertebrates Depend On It.” Xerces Society, August 29, 2022. Accessed October 1, 2022. <https://xerces.org/blog/leave-leaves-these-invertebrates-depend-on-it>

<sup>8</sup> Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory. [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

<sup>9</sup> Masabni, Joseph. “Mulching.” Texas A&M AgriLife Extension Service. Accessed March 13, 2021. <https://agriflifeextension.tamu.edu/library/gardening/mulching/>

<sup>10</sup> Ingham, Elaine R. “Soil Biology and the Landscape.” USDA Natural Resources Council. Accessed February 6, 2021. [https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2\\_053868](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2_053868)

<sup>11</sup> “Chapter 1, The Decomposition Process.” [Don't Bag It!] Texas A&M AgriLife Extension. Accessed February 4, 2021. <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/chapter-1-the-decomposition-process/>