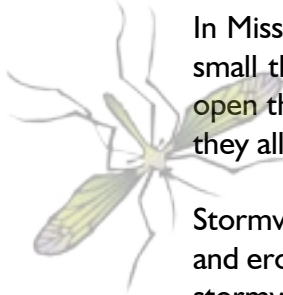
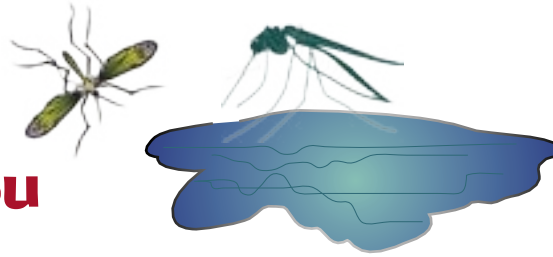


# Stormwater, Mosquitoes & You



In Mississippi, the joke is that they have two sizes of mosquitoes. The first are so small they can slip through the holes in a screen door; the rest are big enough to open the door themselves! No matter where you live or the size of your skeeters, they all have one thing in common – they need water to breed.

Stormwater ponds, which collect and slowly release rainwater to reduce pollutants and erosion, naturally present a few concerns on the home front. The good news is stormwater devices need not be a bloodsucker breeding ground if managed properly. Here's how.

## Keep it Moving

Mosquitoes like standing water -- and they don't need much of it! A half-inch in the bottom of a flowerpot, the depression in a tarp, old tires, even the water collected in a hollow tree will do. To keep mosquitoes from breeding, keep water moving or only have it around for three days. Mosquitoes may not need much water, but they do need four days of it to propagate.

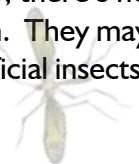
Properly constructed detention ponds stay dry until it rains. Then, they release water slowly over a three-day period. If you live near a detention pond that takes longer to drain, let the owner know it needs maintenance. The most common problem is a simple clog from litter, silt or sediment. Clean the clog and you are back in the three day-no mosquito breeding safety zone. The same rule applies to rain gardens – they should drain over three days. If they don't, add sand to the bottom to improve drainage. If that's not an option, try adjusting the slope so water flows in sheets (not a gully) across the vegetation below.



## Ponds, Retention Ponds and Wetlands Don't Move - Now What?

If you have a pond, add some fish. Most small fish love to eat yummy mosquito larvae and are happy to perform this task for you. One fish in particular, aptly called mosquitofish for its voracious appetite, can do the job if your fish are lazy or don't enjoy the succulent taste of fresh mosquito eggs and larvae. *Gambusia affinis* is native to North Carolina, but in the mountains, the subspecies is holbrooki. So, there's no need to worry about introducing an exotic species, but a word of caution. They may be called mosquitofish, but these guys'll eat most anything – plants, beneficial insects, you name it!

Whatever fish you have you'll need to make sure they can actually reach the eggs and



larvae on the top of the water. That means taking care that plants growing in the water don't become so thick they form a physical barrier. You can have all the fish (and mosquito larvae!) in the pond you like, but if they fish can't get to the eggs and larvae – they go hungry, while we get bitten!

Vegetation that falls into water can create mats that mosquitoes love to lay eggs on. Since retention ponds and ponds always have some water in them, there is plenty of water to promote plant growth. That means maintenance! Mow or manage plant growth on the sides of the pond, retention pond or wetland to prevent this from happening.

## About Those Plants



Some plants are mosquito friendly and some are not. To reduce mosquito populations, it is important to know which is which.

Avoid wooded overhangs and woody plants in wetlands and wet ponds. That means maintenance, as many plants will 'volunteer' – especially near a water source. (Note: If you are building a stormwater facility, you'll need more data than this article includes. Good sources are listed at the end.)

Mosquitoes love cat tails (hint: they won't grow in water over four feet deep), water hyacinth, duckweed and black willow. Algae mats act as mosquito maternity wards, so clear them away.

Mosquito predators like dragonflies and birds enjoy perching in nearby shrubs, so provide these. Dragonflies also like the following native-to-N.C. plants: arrowhead, spatterdock and pickerelweed. Bats take the nightshift, when birds go to bed, so placing both bat and bird houses near your pond or wetland offers round the clock predator service! Birds and bats are great, but it has been proven that these predators alone will not get the job done. You need to pay attention to the plants in and around the water, too.

Mosquito larvicide can also be put into the water, but it'll cost you. Simple maintenance, plants, birds and dragonflies are free, so try them first. If natural methods don't work, check your local extension service to learn what larvicide works best in your area. One that works well in small sites is a bacterium called *Bacillus thuringiensis israelensis*. Death to mosquitoes, but harmless to fish and other wildlife, this product can be found at retail garden stores. It's available in granules and floating disks, or briquettes.

And even though rain barrels aren't a true 'pond,' they hold stagnant water. Put a tight fitting screen on top and you'll be in good shape. Flush out bird paths every few days and if you have a ditch in your yard, make sure it stays clear of debris to keep stormwater moving.

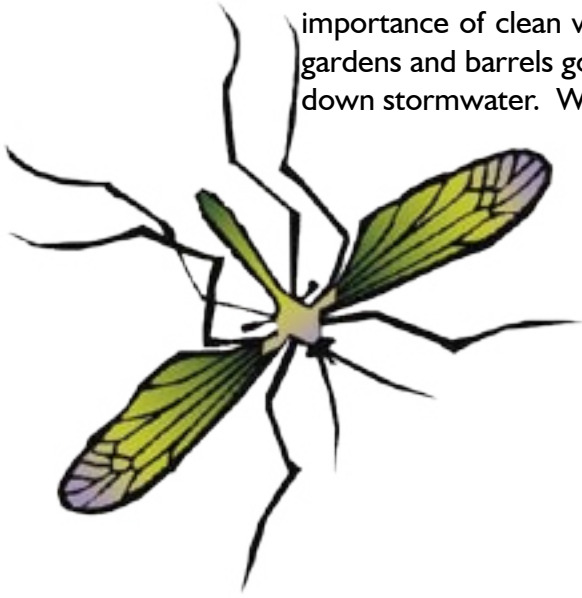


## What Doesn't Work

Bug zappers, electronic mosquito repellents, mosquito traps that use heat and/or chemicals and various plants have all been touted as ways to reduce or eliminate mosquitoes. To date, no scientifically based tests support their claims.



Just taking care of your own yard won't solve the problem, either. Mosquitoes aren't just frequent flyers; they go the distance, too. The one you just swatted probably did not call your back yard "home." So spread the news throughout your community. Your neighbors may be a varied lot, but chances are good they can agree about this just like they agree about the importance of clean water. Which brings us back to why the ponds, wetlands, ditches, rain gardens and barrels got installed in the first place. They do a great job of cleaning and slowing down stormwater. With a bit of care – they'll do a job on mosquitoes, too.



**[Build a Bog Garden](#)**

**[Build a Rain Garden](#)**

**[Designing Stormwater Wetlands for Small Watersheds](#)**

**[Learn More About Mosquitoes](#)**

**[Learn More About West Nile Virus](#)**