

FIGHT THE BITE!

Protect Yourself from Mosquitoes after a Flood

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A floodwater mosquito, *Psorophora ferox*.
 Photo by Bowling

As soon as the worst flooding has ended after a big storm, get ready for a mosquito invasion.

If you act fast, you can prevent thousands of mosquitoes from growing into adults that bite and spread diseases. Some mosquito species can develop from egg to adult in as little as 6 days.

To kill the most mosquitoes with the least effort and expense, know the best techniques for the type and life stage of the mosquitoes that floods often encourage.

Two types of mosquitoes cause the most problems after floods: container breeders and floodwater mosquitoes.

Container breeders are more deadly but easier to control. They can transmit diseases such as dengue fever, West Nile virus, and Zika.

Container breeders lay eggs in small amounts of water, such as in buckets, lids, pools, pots, toys, tires, trash, and trashcans.

These mosquitoes usually develop in towns and cities. The adults seldom travel more than 200 yards from where they hatched and developed.

Floodwater mosquitoes are less dangerous but harder to control. They do not spread major diseases to humans, but they bite fiercely. They can make being outdoors difficult and painful.

Millions of floodwater mosquitoes can grow from eggs to adults within 2 weeks after a major storm. Because the adults can fly for miles to find a blood meal, they can be found in urban areas also.

They usually develop in the country, in areas such as ditches, pastures, swamps, and other low spots.

Major storms leave thousands of square miles of breeding sites for floodwater mosquitoes. Because no one can reach all those sites, individuals, businesses, and governmental agencies must work together to keep the mosquito populations as low as possible.

How to kill the most mosquitoes

Mosquitoes are easiest to kill when they are living in the water. Of their four life stages—egg, larva, pupa, and adult—the first three stages live in water.

Egg: Most mosquitoes lay their eggs in or next to water.

However, floodwater mosquitoes lay eggs on dry ground in areas that flood periodically. The eggs of some floodwater species can hatch even after they have been in dry soil for years.

Larva: Mosquito eggs hatch into larvae, which seldom grow to more than ½ inch long. Some mosquito species finish this stage in just 4 or 5 days.

Pupa: In the pupa stage, the mosquito changes from a larva to an adult.

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Adult: It is during the adult stage that mosquitoes bite people and animals. They also feed on plant juices.

Only female mosquitoes must drink blood, which they need for their eggs to develop.

It costs much more to kill adult mosquitoes, and the techniques take more effort than those that target the larvae stage.

Sprays kill adults by targeting them in flight but it will not reach them all.



Floodwater mosquitoes in Refugio County, Texas, after Hurricane Harvey. Photos by Kyla Sbrusch

Take action

Dump and drain standing water

To remove the mosquitoes' breeding sites, get rid of standing water. If you can, change the slope of the ground to help the water drain faster.

Add dunks or mosquito fish

For fountains, small ponds, and other standing water that you cannot drain, use mosquito "dunks" or pellets. They contain living bacteria that attack only mosquito larvae.

Dunks are available at hardware, feed, home improvement, and other retail stores.

Or, you could use mosquito fish, which eat mosquito larvae. The fish are sold through nurseries and found throughout the state in natural springs.

Wear protective clothes

When you are outside, wear clothes that fit loosely and are light colored. Or, wear clothes that have been treated with permethrin.

If there are many mosquitoes, you may need to wear a head net over a cap or hardhat.

Use mosquito repellents regularly

Use repellents that the U.S. Environmental Protection Agency has approved.

If it is approved, the label on the container will list one of the following active ingredients: DEET, IR3535, oil of lemon eucalyptus, para-menthane-diol, picaridin, or 2-undecanone.

Spray chemicals

Chemical sprays are used where the adults bite and the larvae develop. For decades, people have used these products to help reduce floodwater mosquitoes after natural disasters. They are also used against disease-transmitting mosquitoes when other techniques have not prevented an outbreak.

For more information

These websites have more advice on controlling mosquitoes:

- Arm yourself for the mosquito safari! <http://mosquitosafari.tamu.edu/>
- Controlling Mosquitoes to Reduce the Spread of Zika Virus: <https://agriflifeextension.tamu.edu/solutions/controlling-mosquitoes-reduce-spread-zika-virus/>
- U.S. Centers for Disease Control and Prevention: www.cdc.gov

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