

Mosquito Control: There are many ways to kill mosquitoes, but they have many places to multiply

By **JEFFREY C. STIVERS**, Special to the Daily News
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Grandma always said there was more than one way to skin a cat, although she never would say why anyone would want to skin one. Few people actually skin mosquitoes, but there is more than one way to control the little nasties.

Mosquito control methods can be grouped into three main categories: source reduction, larval control and adult control. Purists might also include cultural control, but that involves controlling people's actions more than it does mosquitoes.

Source reduction is the oldest control method and is arguably the best way to control mosquitoes. It was used at least as early as ancient Roman times to reduce malaria in Rome and is still in use today.

In its simplest form, source reduction is the elimination of mosquito breeding habitat. This can range from draining huge swamps to emptying backyard birdbaths. Filling holes, such as all the borrow pits behind homes in the Golden Gate Estates, to prevent water from pooling is another obvious form of source reduction.

Some not so obvious source reduction methods include removal of vegetation sticking up out of the water and straightening meandering streams and ditches to increase water flow. Neither of these last methods eliminates the standing water but they make the water unsuitable for the mosquito larvae or for the adult to lay her eggs.

The Collier Mosquito Control District (CMCD) does not use source reduction as one of its control methods because it is not feasible in this area. What would the 10,000 Islands be called if CMCD went in with a dragline and dredge and eliminated the islands to prevent salt marsh mosquitoes from breeding? How many gazillion tons of dirt would it take to fill up Rookery Bay? How about thousands of small canals all over the Estates draining rainwater straight into Naples Bay as a way to control freshwater mosquitoes?

Not very appetizing scenarios, are they?

Larval reduction is the next best control option to eliminating larval habitat, and it requires controlling mosquitoes in their larval, or aquatic, stage. Unfortunately, for this option to be successful, all of the larval habitats that produce mosquitoes have to be identified, inspected and treated regularly.

Any sites with mosquito larvae have to be treated with an insecticide to prevent the larvae from

becoming blood-sucking adults. Miss a couple of sites and there will be plenty of mosquitoes to plague people and adulticide operations will have to be undertaken.

The CMCD performs some larviciding both by ground and by air. Larviciding operations are most common at the beginning and very end of the mosquito season when mosquito breeding is restricted to discreet, local sites. Typically the CMCD will treat local salt marshes, primarily in the north Naples area, as well as roadside ditches, retention ponds, and other water holding areas as a way of reducing the local production of mosquitoes.

Unfortunately, once the rainy season is in full swing, mosquito production is no longer localized in a few swamps and ponds that can be efficiently treated. With salt marsh mosquitoes migrating in from the 10,000 Islands and much of the Estates under water and producing mosquitoes, larviciding a few retention ponds has little impact on the total mosquito population. With source reduction and larval control either eliminated from use or of minimal impact, the remaining control option is adult control.

Adulticiding can be done either from the ground or by air. For ground adulticiding to be effective the area treated must have a good network of straight, parallel roads about 300 feet apart with normal sized homes on open lots. Developments with curving roads, mega homes, monster condos, or heavy vegetation between the residence and the street all severely reduce the effectiveness of ground adulticide operations. The next time you hear someone wonder why the CMCD doesn't use ground adulticide equipment, just look around the majority of the neighborhoods in the area for an answer.

With the option of ground adulticiding being of limited usefulness, the CMCD has chosen to use aerial adulticiding as the primary tool to protect the people of Naples from mosquitoes and the diseases that they carry. The CMCD uses helicopters to treat small areas and fixed wing planes for treating large areas.

Source reduction, larval control and ground adulticiding have all been utilized in the CMCD campaign to reduce mosquitoes in the Naples area. In fact, a 33-year veteran of CMCD operations has been heavily involved with implementing all of these methods during his career. His observation has been that, when the rainy season is in full force, leaving standing water everywhere and hordes of salt marsh mosquitoes are migrating in from the 10,000 Islands and the Everglades, the only viable solution is to call out the aircraft.



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