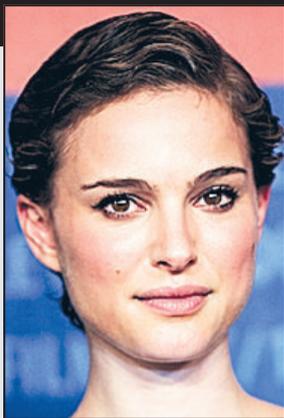


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8 YEARS INTO WEST NILE

Mosquito Wars

- Counties refine spraying, testing
- Environmentalists worry about the fallout

A4-5



How aggressively should LI control mosquitoes? Talk about it at newsday.com

NEWSDAY PHOTO / DANIEL GOODRICH

Suffolk Vector Control worker Tom Conway uses pesticide to kill mosquito larvae at Timber Point Golf Course in Great River.

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The buzz on LI



NEWSDAY PHOTO / DANIEL GOODRICH

Suffolk technicians sort mosquitoes by species.

How to protect yourself from mosquito bites

- The hours from dusk to dawn are peak biting times for a number of mosquito species.
- To prevent bites, wear protective clothing when outdoors for a long period of time or when mosquitoes are active.
- Consider using repellent, but do not overspray, as excessive exposure poses health risks, especially in children.
- Most mosquitoes do not transmit disease. If West Nile virus is found in your area, those at highest risk for the disease — adults 50 and over — should take extra care to use repellent and protective clothing at peak mosquito times or consider avoiding outdoor activities then.

How to treat mosquito bites

- Use hydrocortisone cream, calamine lotion or a baking soda paste to ease discomfort of an itchy bite.
- A cold pack or plastic bag filled with crushed ice may help.
- If a mosquito bite seems to be causing more serious signs and symptoms — such as fever, severe headache, body aches, nausea, vomiting, swollen glands, a rash, lethargy, confusion or sensitivity to light — contact your health care provider. These signs and symptoms may indicate West Nile fever or, rarely, encephalitis. Prompt diagnosis and treatment are important.

SOURCES: SUFFOLK COUNTY VECTOR CONTROL, NEW YORK STATE DEPARTMENT OF HEALTH, MAYO CLINIC

Debate over a remedy renews as annual swarm of worry over these flying insects hits its peak

BY JENNIFER SMITH
jennifer.smith@newsday.com

Ditches.
Dynamite.
Oil hosed on marshes.
Chemicals sprayed from helicopters.

Over Long Island's 80-year-struggle with mosquitoes, the arsenal has certainly evolved. Together, Nassau and Suffolk are spending more than \$6 million this year on aerial spraying, lab testing and constant monitoring of the ponds, sumps and wetlands where mosquitoes breed.

Still, by this time every year, the blood-sucking insects are swarming from salt marshes and dive-bombing backyard barbecues.

Malaria no longer kills people here, and being outdoors on a summer evening is now at least conceivable — thanks to window screens, bug repellent and decades of government-led mosquito control.

But threats persist from West Nile virus and other rare but serious diseases that mosquitoes spread from wildlife to humans.

Detecting a danger

Last week, health officials announced that West Nile had been detected in mosquito pools in Nassau, Suffolk and Queens for the first time this year.

The virus has killed eight Long Islanders and sickened 77 since it first appeared in 1999.

"I'm alarmed," said Suffolk Health Commissioner Humayun Chaudhry. The federal Centers for Disease Control reports a nearly fourfold increase nationwide in West Nile virus cases compared with this time last year. "If there's one thing that keeps me up at night it's looking at that data."

As West Nile season begins, local governments once again are negotiating their annual balancing act: protecting residents from mosquito-borne illnesses while minimizing the inherent risks posed by the pesticides used to keep them in check.

They are also under pressure to keep mosquitoes from bombarding people at Long Island's outdoor attractions. Jones Beach, for example, is bordered by miles of mosquito-infested salt marshes. If Nassau didn't spray there,

said Greg Terrillion, the county's mosquito control director, "You'd ask for a refund."

This year, however, mosquito control programs proceed amid usual public attention. With concerns for wetlands health on the rise, and environmentalists challenging the use of chemicals to kill salt-marsh mosquitoes not generally linked to West Nile, Suffolk this year passed a new mosquito control plan aimed at reducing chemical spraying. Approval came only after loud and lengthy debate.

Helping or harming?

The disagreements were highlighted this spring as the state environmental agency, the Town of East Hampton and an East End legislator each took issue with Suffolk's continued use over tidal marshes of methoprene, a chemical that some fear may harm lobsters and other invertebrates.

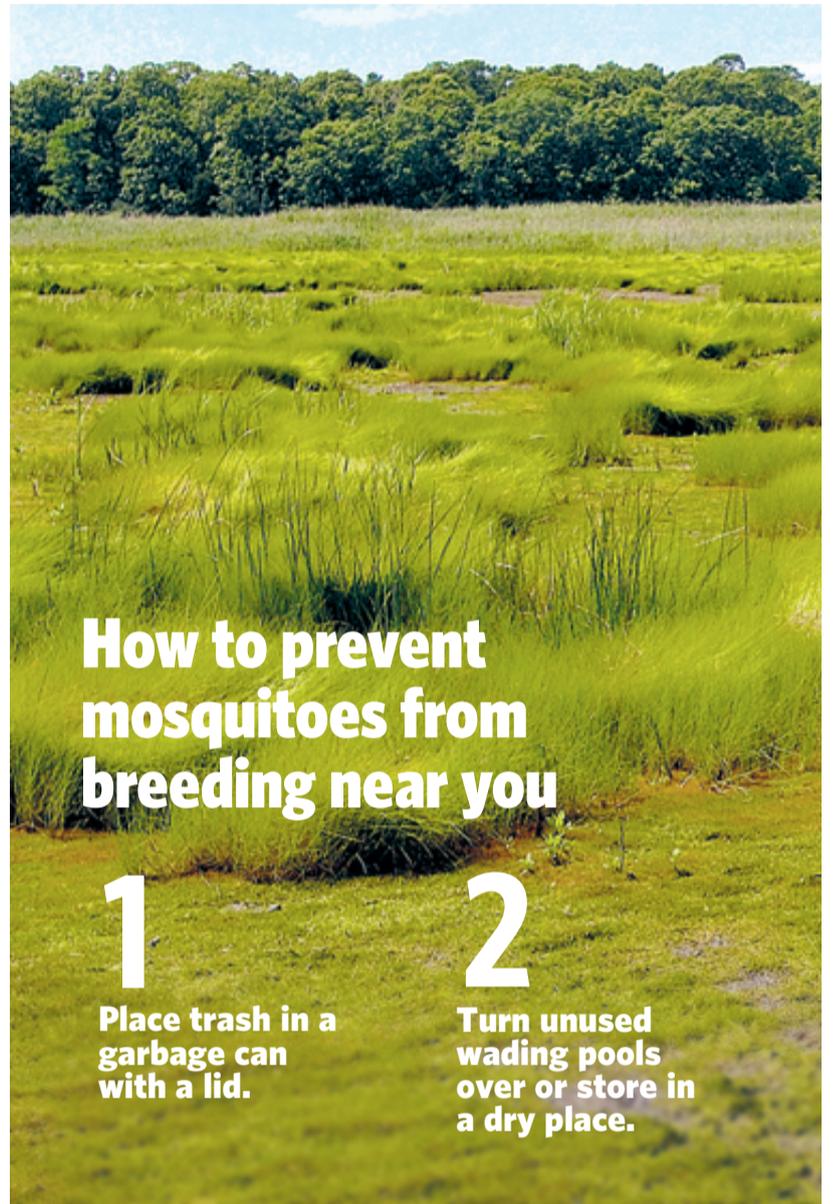
"I don't want to see lobsters with one claw down the road and say, whoops, we made a mistake," said East Hampton supervisor William McGintee.

And the debate has also echoed this summer: Just last month, Legis. Jay Schneiderman (R-Montauk) proposed a bill that would restrict the use of methoprene on Suffolk's 17,000 acres of tidal wetlands.

After a vigorous discussion that drew in health officials, environmentalists and vector control authorities, that bill was tabled, all but ending its chances for a vote this year.

All the while, Suffolk and Nassau's foot soldiers in the public works and health departments readied their equipment and strategies for the annual May to October campaign. By now, the vector control workers are well dug in on the front lines of the mosquito wars.

■ A dank sump the size of a football field in residential Levittown: A Nassau mosquito inspector scoops a dipper to



How to prevent mosquitoes from breeding near you

1

Place trash in a garbage can with a lid.

2

Turn unused wading pools over or store in a dry place.

Dominick Ninivaggi, head of Suffolk's mosquito control

check for *Culex pipiens*, the house mosquito most commonly associated with West Nile virus. Stormwater dumped by recent rains has formed the perfect larvae nursery.

■ Heckscher State Park in East Islip: Vector-control workers pour gallons of bacterial and chemical agents into a tank bolted to a waiting helicopter before it roars off toward marshes where workers have found mosquito larvae.

■ A cramped county laboratory in Yaphank: Entomologists use tweezers to sort different mosquito species into piles. Caught

in surveillance traps, insects are destined for Albany, where the state will test for disease.

Despite the uproar over Suffolk's new plan, this season's mosquito programs in both Long Island counties continue pretty much as they have for more than a decade.

Counties' shared burden

With more people and many thousands more acres of wetlands to cover, Suffolk has a much bigger operation than Nassau, but the counties share a basic approach to their task. They monitor adult mosquitoes for evidence of disease and try to kill wriggling water-bound larvae before they move into their flying, biting stage.

Mosquito-breeding pools in catch basins, salt marshes and freshwater bogs are dosed with Bti, a bacterial agent that destroys the guts of early-stage larvae.

Late-stage larvae are targeted with methoprene, an insect growth hormone mimicker that limits future development. Nas-

The West Nile picture

Diagnosed cases of West Nile virus in Nassau, Suffolk and Queens. Numbers in parentheses indicate fatalities.

Year	Nassau	Suffolk	Queens
2002	11	8 (2)	12 (1)
2003	17 (1)	10 (2)	11
2004	0	0	1
2005	12 (1)	7	5 (2)
2006	5 (1)	2	2





as battlefield



NEWSDAY PHOTO / MICHAEL E. ACH

3

Clean and refill bird baths at least once a week.

4

Clean gutters regularly.

5

Inspect flower pot drip trays for developing mosquito larvae.

6

Maintain swimming pool chlorination. Flush pool covers with chlorine.

7

Take old tires to an automotive shop for proper disposal.

program, and Debbie Long of the U.S. Fish and Wildlife Service survey the open marsh of Wertheim National Wildlife Refuge by the Carmans River.

sau and a number of other mosquito control agencies in the Northeast use methoprene on larvae that survived earlier applications of Bti.

New York City does not spray it over ponds, lakes and wetlands, citing the chemical's "potential to affect non-target invertebrates" as laid out in the city's West Nile virus plan.

Last year the state Department of Environmental Conservation revised its policy regarding methoprene on the DEC's 2,330 acres in Suffolk. It told the county that the chemical could only be used when disease is present or if two or more applications of Bti have failed to reduce mosquito larvae.

Nassau County, which has not asked for permission to spray methoprene on DEC wetlands, would also fall under the

Battlegrounds

Wetland areas where Nassau and Suffolk counties do aerial spraying to target mosquito larvae.



SOURCES: NASSAU AND SUFFOLK COUNTIES

NEWSDAY / ROD EYER

same restrictions, according to DEC regional permit administrator John Pavacic.

More recently, the town of East Hampton passed a symbolic resolution opposing the use of methoprene on town lands.

In what could signal a softening of the county's aggressive stance on mosquito control, Suffolk health and environmental

officials have met this summer to discuss the county's methoprene policy with Schneiderman, East Hampton's McGintee, and concerned environmental groups. Another meeting is scheduled for this week.

"We're encouraged . . ." said Nicole Maher, a wetlands specialist with the Nature Conservancy on Long Island.

"What we're evaluating now is if there are further steps we can take to reduce environmental damage while protecting human health."

Still, last week Suffolk officials continued to defend the county's position on methoprene. They called it a safe and vital tool. They said that limiting its use would cause a spike in adult

mosquitoes and trigger increased need for spraying adulticides. These products, with trade names such as "Scourge" and "Anvil," can also kill a range of insects and cause dizziness and tremors in humans exposed to levels far higher than are sprayed from country trucks.

"We know that adulticides do impact non-target organisms and they're much more harmful ecologically and more harmful to humans," said Carrie Meek Gallagher, Suffolk's commissioner for environment and energy.

The state health department's West Nile guidelines say "Mosquito adulticides should be considered the least desirable method of control and only used when current isolations of virus and / or evidence of disease has

See MOSQUITO on A27



The buzz on LI as mosquito battlefield

MOSQUITO from A4

been established."

Both Long Island counties have a different philosophy. They also use adulticides for so-called "quality-of-life" spraying — to combat infestations of biting mosquitoes. Nassau has not done so yet this year, said Terillion. Suffolk has sprayed adulticides a number of times in communities such as Shirley and Davis Park, which typically see large numbers of salt marsh mosquitoes in summer months.

Even if many in the public demand nuisance spraying, others increasingly have asked authorities whether the insects could be controlled without chemicals. One such method is now being tested on the high marsh at Wertheim National Wildlife Refuge in Shirley.

There, Suffolk County has collaborated with the federal Fish and Wildlife Service on a pilot project to replace chemical spraying with ponds filled with fish that eat mosquito larvae. The technique has been tried out and honed at a handful of Suffolk sites in the past decade.

Dominick Ninivaggi, the highly visible head of Suffolk's mosquito control program for 13 years, strode across the test site last week, mud sucking at his boots. He pointed to a stretch of water filled with darting killifish: "This was one of the ponds we constructed."

This 40-acre stretch of tidal wetland was once state-of-the-art for mosquito control. It was scored with ditches that stretched west to the Carmans River every 150 feet to drain off water where mosquitoes might breed. In 2005, public works machines reshaped it, scooping out ponds where invasive phragmites once stood and smoothing dredged soil to form a mud plain.

Now, waist-high stands of spartina and tussocks of bright green marsh grass have taken root. It's a contrast with the adjacent unmodified area, where invasive phragmites plants grow as tall as late-summer corn.

Ninivaggi notes the resculptured marsh has less phragmites and that his workers have reported fewer mosquito larvae during surveillance checks.

Others say it's too soon to tell.

A mosquito's life

The northern house mosquito, known scientifically as *Culex pipiens*, is the most common mosquito species found in urban areas.

Total Lifespan
Males: 10-20 Days
Females: 3-100 Days

1 EGG STAGE (1-2 days) Eggs are laid in "rafts" of 150-300 typically on the surface of standing water.

2 LARVAL STAGE (7-12 summer days) Mosquito larvae, or "wigglers," feed on organic debris in the water. They breathe air through a siphon tube on the terminal end. There are four stages of growth.

HOW TO KILL Bacterial pesticides can be applied in the first or second stage. Methoprene can be used in the second to fourth stages.

4 ADULT STAGE Hibernate as mated females in winter; become active in spring and produce several generations of offspring. Females require a blood-based meal to form each batch of eggs and typically search near breeding site.

HOW TO KILL Aerial application of chemicals such as malathion or pyrethroids.

3 PUPAL STAGE (2-3 summer days) In this non-feeding stage, the "tumblers" float near the water surface.

SOURCE: CORNELL UNIVERSITY CENTER FOR THE ENVIRONMENT; STATE DEPARTMENT OF HEALTH

NEWSDAY / RICHARD CORNETT

Susan C. Adamowicz, a U.S. Fish and Wildlife biologist tracking the project, said it appeared to be doing well, but she has not analyzed the preliminary data. "It could take 20 years before you can say you've got a handle on what's happening here," she said.

Still, such projects are an important component of Suffolk's new plan. But some environmental advocates and state officials remain concerned that overenthusiastic manipulation could further damage marshes already under siege from coastal development and the miles of mosquito ditches dug in the past century. In a nod to their concerns, the county's plan includes a committee to review all new potential marsh-restoration projects to ensure they

would not harm the marsh.

The DEC eventually granted permits for the Wertheim project. Still, the agency remains leery of tinkering with wetlands in light of deteriorating marsh vegetation in the western Great South Bay and North Shore, Pavacic said.

Skeptics of the county's mosquito policies point out that the aggressive biters that live in those marshes are a natural part of Long Island's fragile shoreline ecosystem. "Salt marsh mosquitoes have always been here," Pavacic said. And salt marsh mosquitoes, said Peconic Baykeeper Kevin McAllister, are far less likely to spread West Nile and other diseases than the household mosquitoes that breed near homes in clogged gutters and old tires.

Spraying on Fire Island, other areas

Suffolk health employees will ground-spray pesticide today to control adult mosquitoes on Fire Island and in East Patchogue, Bellport, Brookhaven hamlet and North Shirley.

All streets in Davis Park and Point O'Woods on Fire Island are scheduled for spraying from 6:30 to 10:30 p.m.

The four other communities are scheduled for spraying from 7:30 to 11:30 p.m.

Officials said residents, especially children and pregnant women, should avoid exposure and stay indoors whenever spraying takes place and up to 30 minutes after spraying.

— ZACHARY R. DOWDY

But that's not a chance local health officials are willing to take. "Salt marshes are not a likely place for West Nile virus to be a big problem," said Howard Ginsberg, a mosquito expert with the U.S. Geologic Survey in Rhode Island who has studied

the insects on Fire Island. But the potential does exist for salt marsh mosquitoes to spread the disease to humans. "In the lab, they are vectors of West Nile virus, and they could potentially be involved if the ecological conditions are right."

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