MOSQUITO CONTROL

TRT: 00:00

OPEN

VO 1

You are witnessing the emergence of one of the most annoying, prolific and potentially harmful creatures on earth. A mosquito. And soon, this mosquito will be an adult and ready to fly. And -- if it is a female – ready to bite.

Mosquitoes are known to carry and spread some of the most deadly diseases known to man, including malaria, yellow fever and encephalitis.

Thanks to medical advances and aggressive mosquito control, however, the United States is now largely free of these human diseases.

But without diligent control, the menace remains, especially in sub-tropical climates like ours, which stimulate the production of large swarms of mosquitoes.

VO 2

In addition to the obvious health issues, mosquitoes – despite their relatively short life-span of just six weeks -- also pose serious threats to our very quality of life.

VO 3

Residents and visitors have a variety of outdoor activities to choose from in Southwest Florida:

Swimming or relaxing at the many Gulf beaches,

Fresh and salt water fishing.

Or just plain enjoying the great outdoors.

VO 4

But if not kept in check, mosquito swarms can quickly ruin an otherwise perfect day in paradise.

And they can do more damage than that. Mosquitoes have been known to drive farm workers out of the fields, and even kill livestock.

By plaguing tourists, residents and workers, they can jeopardize the region's economic well-being – even drive down land values.

So it's no wonder that here in Florida, we take mosquito control very seriously.

VO 5

The Lee County Mosquito Control District is one of more than 50 such programs in Florida. Established in 1958 by an act of the state Legislature, it encompasses about 98 percent of Lee County – an area of approximately 1,000 square miles.

The district is governed by a board of seven commissioners, elected by county voters to serve four-year terms. The board – which also serves as the Hyacinth Control Board – meets monthly with the director to help map out policy and review strategies.

VO 6

During World War II, thousands of young airmen received gunnery training at the old Buckingham Air Base, just nine miles east of Fort Myers, before being sent overseas.

Today, that base – with its airstrips, nine new buildings and three laboratories -- has been converted into a staging ground for a new battle in which highly skilled warriors, armed with vintage and high-tech equipment, take on a very different, yet still potentially deadly enemy – mosquitoes.

VO 7

The Lee County Mosquito Control District employs a permanent staff of about 80. But the addition of part-time workers during peak summer mosquito season swells that to more than 100.

VO 8

In the early stages of a mosquito's life, it is called a larva, or "wiggler," which are hatched from eggs deposited by the female.

Some species lay their eggs on the surface of water, use tree holes or artificial containers. But Lee County's most abundant mosquitoes deposit them in moist soil, where they can lay dormant for several years until covered by rain water or tides.

Within three to five days after hatching, the larvae are full-grown. They have changed shape, grown less active and have become pupae. In another day or two, they split their exoskeleton at the water's surface and emerge as adult

mosquitoes – a major complication of life in tropical climates

VO 9

One of the best ways to control mosquitoes is to kill the larvae before they emerge as adults, a procedure called "larvaciding," which must be completed within this narrow window of time to be successful.

But with more than 60-thousand acres of potential salt marsh breeding ground for mosquitoes in Lee County -- much of it inaccessible by vehicles – that can be a formidable challenge.

To meet that challenge, the Lee County Mosquito Control District has a fleet of retro-fitted helicopters, some from the Vietnam-era, both for surveillance and spraying. They're manned by a team of experienced pilots.

VO 10

When a breeding area is found, it is treated – or "larvicided" If it is a small area, it is treated by the same helicopter crew that discovered it. Jet Ranger or Bell 407 helicopters are used for inspections. If wide-spread breeding areas are found, UH-1H Hueys are dispatched to larvicide.

The larvacides used to kill the mosquitoes before they can emerge are thoroughly researched and tested, both for effectiveness and safety.

The district is careful to use only materials that are EPA approved to minimize or eliminate harm to the environment, and use only the quantity necessary.

VO 11

Aerial surveillance is supported by boat inspectors, who check for larval development on the many coastal mangrove islands, where heavy rains and high tides can create a perfect breeding ground.

When wide-spread breeding is discovered, one or more of the District's helicopters may be deployed for a quick larvicide strike.

VO 12

In addition to its aggressive larviciding programs, Lee County Mosquito Control has utilized other measures designed to prevent mosquitoes from developing in the first place.

Wildlife Drive is one of the most popular features at the J. N. Ding Darling National Wildlife Refuge on Sanibel Island. Hundreds of thousands of people visit every year, and the five-mile Drive provides public access to an otherwise inaccessible wildlife haven.

But many do not realize it is also a mosquito control project, built in the late 1960s by Lee County Mosquito Control, working with the U.S. Fish and Wildlife Service and other government agencies.

The dike on which Wildlife Drive was constructed, and the network of ditches associated with it, are used to control mosquito populations by managing water levels.

Flooding low-lying areas eliminates mosquito breeding, and

provides permanent habitat for mosquito-eating fish and wildlife.

VO 13

This comprehensive program of salt marsh inspections and larviciding as needed is the most effective, efficient and environmentally sensitive control mechanism the District conducts.

Simply stated, it just makes sense to eradicate mosquito larvae before they even emerge. These are the prevalent species of mosquito in Lee County. They may breed many miles from most homes, but have a flight range of up to 50 miles. If not eliminated in their early stages through larviciding, they pose a threat to every single Lee County resident.

VO 14

Even with extensive larviciding, mosquitoes will sometimes hatch at undiscovered breeding or at sites that the District cannot get to within 3 to 4 days when the larvae are susceptible to treatment. That's why it is so important that larviciding take place during the narrow window available. When that does occur, the Lee County Mosquito District turns to adulticiding – killing the adult mosquito.

Some 78 species of mosquito have been found in Florida – more than 47 in Lee County alone. Each species has its own unique life cycle and flight habits, so to insure effective adulticiding, constant monitoring is needed to determine what type of mosquito is plaguing a specific area.

VO 15

To gather this information, so-called truck traps patrol more than 45 locations in Lee County, seven nights a week from May first through October 31st.

These trucks are equipped with large nets that funnel flying insects into a trap. Early the following morning, the insects collected are taken to the lab at Buckingham, where the mosquitoes are separated, counted and identified as to sex and species. The data is tabulated and used to determine what type of controls are needed in which areas.

VO 16

For example, if moderate mosquito activity is found in an area with good road access, spray trucks may be dispatched. But if problems are widespread or found in remote locations, the District's well-recognized DC-3 aircraft or helicopters may be deployed.

The availability of today's satellite navigation systems allows the District to pinpoint applications at precise targets.

The truck trap drivers also record wind speed and direction and monitor rain gauges at each truck trap stop to help field inspectors plan their days' work.

BRING UP NATS
"There's no rain in the gauge tonight."

VO 17

In combating the mosquito menace, the Lee County Mosquito Control District relies heavily on its fleet of trucks,

boats and aircraft.

It is critical, therefore, that this equipment be well-maintained.

Former DC-3 passenger planes have replaced the old B-17 and B-24 warplanes that used to serve on the front lines of mosquito control. During the downtime winter months, these aircraft – and the District's helicopters -- are thoroughly inspected and prepared for the coming mosquito season.

The choppers are sometimes stripped to the bare frames and rebuilt from the skids up.

Thanks to the Buckingham facility's well-equipped hangers and engine shops, and a team of highly skilled mechanics and pilots, the District has compiled an enviable safety record over the years.

VO 18

Lee County Mosquito Control recognizes that It isn't enough just to find mosquitoes and spray them with insecticides. They also understand the importance of tracking the insects' resistance to the materials used for control.

Larvae are brought in from the field and allowed to acclimate overnight. They are challenged with varying concentrations of insecticides used by the District. Also Live adult mosquitoes are collected from the wild and fed a meal of blood to insure that the females lay a large quantity of eggs. Those eggs are hatched and reared through the third stage of larval development. Then

they are subjected to varying concentrations of insecticides.

This process determines how vulnerable the mosquitoes are the each insecticide. This enables technicians to learn when a species may be developing resistance, and establish the minimum effective dosage

VO 19

The importance of tracking resistance to insecticides makes research and development a top priority for the District.

Many insecticides, application equipment and cutting edge technologies have been tested or developed right here in these labs. In fact, the Lee County Mosquito Control District owns more than 40 U.S. and 18 European patents, and has earned a reputation as a national leader in mosquito control.

VO 20

The laboratories at the Buckingham base also play a critical role in controlling diseases such as St. Louis Encephalitis Eastern Equine Encephalitis and West Nile Encephalitis, which are spread only by infected mosquitoes, and can, in extreme cases, result in paralysis or even death.

During mosquito season, district staff regularly draw blood from caged chickens placed strategically in 19 locations throughout Lee County.

The blood samples are then analyzed to determine if any of the chickens have been infected by mosquitoes. If the presence of St. Louis, Eastern Equine, or West Nile Encephalitis is

detected, that area is thoroughly inspected and steps taken to find and eliminate the breeding source and any adult mosquitoes that may be present.

VO 21

The professionals at the Lee County Mosquito Control District utilize a dazzling array of high tech weaponry in their on-going battle against the mosquito menace. But they also know that the public has a critical role to play in that effort, and eliminating potential breeding sources around the home is everyone's responsibility.

Standing water, such as old tires, puddles and discarded containers, should be monitored every few days for signs of larval development. Salt marsh mosquitoes can fly long distances, but household breeds travel only a few hundred feet and most likely will only bite the people who allow them to breed.

VO 22

To help spread the word, the Lee County Mosquito Control became the first in Florida to hire educators to work in the county school system, reaching out to elementary, middle and high school students.

BRING UP NATS

SOT

"The main part of my job is teaching about mosquitoes and mosquito control, because along with working for the School District, I also work for the Lee County Mosquito Control District."

VO 23

The District takes great pride in providing this hands-on

learning experience, which allows youngsters to identify different kinds of mosquitoes, learn about their habitats and life cycles and become familiar with the methods and techniques used to control them.

BRING UP NATS

VO 24

Lee county Mosquito Control also operates a cooperative program at Florida Gulf Coast University, funding an instructor at F-G-C-U, who also recruits education students interested in serving internships in the Mosquito Control District's public school program. At least one intern eventually went to work as a teacher for the Mosquito Control District.

Another educational task of the District is educating government agencies and offices of the nature and challenges of our work.

VO 25

Mosquitoes are not the only nuisance that is subject to attack by strike teams based at the old Buckingham Air Force base. The Lee County Hyacinth Control District was established to control aquatic weeds that plague southwest Florida waterways.

Field inspectors regularly monitor the Caloosahatchee River, and the bays, ponds, inlets, lakes and hundreds of miles of canals that make Lee County a waterfront wonderland.

When nuisance plants draw complaints from residents or start to interfere with the use of a waterway, teams move into

action and develop a treatment plan.

The Lee County Hyacinth Control District uses three basic weapons to combat invasive weeds; biological, chemical and mechanical.

In some cases, the best approach is to utilize a nuisance weed's natural enemies.

Plant-eating fish – such as the grass carp – are released into weed infested waters to do what they do best – devour unwanted vegetation that can literally take over a waterway.

These carp can eat their own body weight in plants daily.

B-roll

NATS

"We're going ahead and we're using the grass carp here in this particular area to stock 'em to control some of the submergent plant growth. This will help manage this waterway so it doesn't get infested. These carp will feed on some of the submergent plant growth and help manage the system for us as a biological control agent."

VO 26

In other situations, the use of herbicides is deemed the best weapon. Airboats that can skim across waterways clogged with vegetation are armed with spray equipment to disperse herbicides. The chemicals used are slow-acting so as to avoid the rapid depletion of oxygen, which could harm fish and other wildlife.

VO 27

Out in the field and back in the lab, Hyacinth Control District experts constantly monitor water quality and plant growth to

determine the best approach to control harmful aquatic plants.

VO 28

Sometimes a combination of biological and chemical controls is appropriate. But other times, the best approach is to simply remove the plants from the water with weed-gobbling harvesting machinery that looks straight out of a science fiction movie.

VO 29

Hyacinth Control also utilizes a public education component. Pondwatch, an educational outreach created by the District, publishes newsletters and holds seminars on how individuals can help reduce unwanted plant growth and improve water quality.

VO 30

The Lee County Mosquito Control District remains committed to providing a wide range of valuable services by:

- Controlling mosquitoes in their larval stages where possible;
- Attacking and eliminating biting mosquitoes, and
- Keeping Lee County waterways free from harmful aquatic plants.

Armed with modern technology, exhaustive research and development, sound scientific data and a skilled, dedicated workforce, the Lee County Mosquito Control District will continue to keep residents healthy and comfortable and reduce the threat of potentially deadly mosquito-borne disease -- just as it has for

more than half a century.