

CASE STUDY

MOSQUITOS ON THE FAIRWAY: FINDING THE ROOT CAUSE

Mosquitoes aren't just a nuisance, they're a liability. For commercial properties, especially those with outdoor spaces such as resorts, restaurants, parks, and event venues, mosquito activity can significantly impact customer experience, employee comfort, and even public health.

These biting pests are known vectors of serious diseases like West Nile virus and Zika, making proactive mosquito control an essential component of any commercial pest management program.

We help businesses protect their brand, reduce risk, and maintain welcoming environments through strategic, science-based mosquito control solutions.

The Challenge: High Mosquito Pressure Threatens Outdoor Use

An upscale retirement community and golf course in the Phoenix area was facing a growing mosquito problem. This issue has become so severe that residents were increasingly reluctant to use walking paths and outdoor spaces, and golfers were avoiding tee times. The clubhouse and restaurant were also experiencing mosquitoes gathering in noticeable numbers.

The previous pest control service provider had tried fogging, but it wasn't delivering results. Mosquito complaints persisted, and the property's reputation was at risk.

That's when Sprague was called in to look at the issue.

Identifying the True Source

Sprague Regional Entomologist Edna Alfaro Inocente, BCE along with the Phoenix branch team, took a comprehensive approach to identifying the issue, one that started with investigation, not application.

The team conducted a full property inspection and uncovered a likely culprit: a walking path overpass near a riverbed just across the street from the clubhouse. To the untrained eye, the area appeared dry, but it wasn't. Moisture from early season rain and shade had created an ideal breeding ground for mosquito larvae.

The key insight Inocente and the Sprague team discovered was that the adult mosquitoes that were plaguing golfers, diners and walkers weren't the problem; they were the symptom.

While the fogging efforts knocked down the adult mosquito population, it offered no lasting impact and created a false sense of security.

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"Fogging is a very visible treatment approach that checks the perception box, but it does not get to the root cause of the issue," says Inocente. "To truly solve the issue, you need to control the next generation of mosquitoes."

The Solution: Targeting Larvae

In consultation with the property manager, Sprague developed a longer lasting solution by applying a larvicide treatment directly to the breeding zone. This type of treatment prevents mosquito larvae from maturing into biting adults and are especially effective under bushes, around landscaping features, and in hard-to-reach water collection points like under the overpass.

Inocente says even though the overpass was a five-minute walk from the clubhouse area where the mosquito problem was most acute, the distance did not pose a challenge for an adult mosquito.

"Mosquitoes are not like cockroaches or bed bugs, which are hitchhikers," says Inocente. "Unlike other pests that are brought into commercial facilities on packaging or clothing, mosquitoes will fly distances in search of food and nesting spots."

The solutions to the problem included working closely with the golf course to:

- Improve drainage in key areas
- Monitor and inspect for larval activity on an ongoing basis
- Educate staff about moisture control and landscape maintenance practices that reduce mosquito habitats
- Incorporate pest identification and trap checks into routine inspections

Once the appropriate treatment approach was followed, the mosquito pressure dropped, and residents and guests were able to move about the property without complaint and with ease.

The Broader Picture: What This Means for Mosquito Control Today

Sprague's approach to mosquito control is evolving alongside the mosquitoes themselves. As climate change fuels higher temperatures across the western U.S., mosquito populations are expanding into new regions, introducing unfamiliar species with different behaviors and potential resistance to conventional treatments.

"People often think mosquitoes die off when it gets cold," says Inocente. "But that's only partially true. Some species hibernate as adults, others lay eggs in protected, moist environments like sewers or crawlspaces ready to re-emerge when conditions improve."

That's why it's critical to:

- Secure a positive identification. The correct mosquito identification helps determine the right treatment approach. Our team ensures the correct pest identification to ensure the treatment is appropriate.
- Think long-term. Larvicide works upstream in the mosquito lifecycle, delivering more sustainable results.
- Involve the client. Sprague technicians are trained to inspect more deeply, communicate findings clearly, and collaborate with property teams to prevent conditions that support breeding.

Know When They Bite: Mosquito Activity by Species and Time of Day

Understanding when mosquitoes are most active can help property managers take smarter precautions to protect guests, employees, and business operations. According to the Centers

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for Disease Control and Prevention (CDC), biting times vary by species and so do the risks they pose.

Here's a quick guide to the most common mosquito species impacting commercial properties:

Yellow Fever Mosquito (*Aedes aegypti*)

- Transmits: Chikungunya, dengue, Mayaro, yellow fever, Zika
- Peak activity: Dawn and dusk
- Found: Common in warm, urban areas—often close to buildings. Known for breeding in small containers like flower pots, drains, and gutters.

Asian Tiger Mosquito (*Aedes albopictus*)

- Transmits: Chikungunya, dengue, Mayaro, Zika
- Peak activity: Dawn and dusk
- Found: Highly adaptable; can breed in urban and suburban environments. Likes shaded landscaping and water-holding plants.

Southern House Mosquito (*Culex quinquefasciatus*)

- Transmits: West Nile virus, St. Louis encephalitis, Usutu virus, filariasis
- Peak activity: Late evening (typically 10–11 p.m.)
- Found: Often found near storm drains, catch basins, and stagnant water in warm climates.

What commercial property owners should watch for when it comes to mosquitoes:

- Schedule outdoor maintenance and irrigation to avoid creating excess standing water especially around peak activity windows.
- Encourage staff to wear protective clothing or use repellent during dawn, dusk, and evening hours if working outdoors.
- Keep doors and windows closed or screened during these times especially in high-traffic areas like clubhouses, patios, outdoor dining areas and loading docks.
- Incorporate mosquito monitoring and control into regular facility inspections, particularly during summer months.

Knowing when and where mosquitoes are most active will help commercial property owners and managers make informed decisions that keep people safer and properties pest-free.

Beyond the Golf Course

Sprague has applied this same strategic model in diverse settings, from agriculture fields bordered by irrigation canals to food production facilities with hidden water sources to corporate office parks with water features.

In each case, the goal is the same: understand the account's unique properties (i.e., water features, landscape, the condition of neighboring properties, etc.) and use data and science to reduce mosquito populations at the source while educating clients about their role in long-term prevention.

Mosquitoes are actively expanding into urban environments where humans become the primary source of food. Sprague's multi-faceted, property-specific approach meets this challenge head-on, reducing risk and protecting people and brands.

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