

## IN THE FIELD

HE LI LIFE

## LI lab logs beetle-battle data

BY JENNIFER SMITH

jennifer.smith@newsday.com

Long Island trees still fall victim to the Asian long-horned beetle, the invasive insect that during the past 12 years has gnawed through more than 6,000 maples, elms and other hardwoods in New York State.

But inside the Amityville war room for New York's beetle battle, researchers say the tide appears to be turning.

For the first time since the black and white bugs were initially detected on a Brooklyn maple in 1996, no live beetles of reproductive age were captured or even seen in New York in 2007. And in April the U.S. Department of Agriculture said the insects were eradicated from Illinois and from New Jersey's Hudson County. The progress follows concerted efforts to survey trees for signs of infestation and, in some cases, treatment of at-risk trees with insecticide to kill the wood-boring beetles.

"We're cutting down fewer and fewer trees each year," said Joe Gittleman, project director for the USDA's Asian long-horned beetle eradication program in New York. "The populations are significantly on the decline."

Some of that progress can be attributed to research done here in the USDA's office on Merrick Road, where scientists analyze felled trees for clues to how, and where, the Asian long-horned beetles spread.

For the botanical set, this is CSI: Amityville.

The lab holds a mix of high- and low-tech equipment: a microscope, electric log-splitter, two band-saws and a high-resolu-



PHOTO BY PETER DILAURO

Bill Panagakos, a biological science technician in the Amityville Asian beetle "war room"

tion scanner to capture detailed images of tree cross-sections.

On one counter, beetle carcasses with arching antennae are pinned to foam panels for use in educational programs. Two refrigerators hold live larvae and frozen adults. In a smaller room is the tree morgue, where limbs of infested wood are stored.

Forensic information from that wood helps researchers monitor how the beetle populations grow over time.

"We GPS all the infested trees," said Bill Panagakos, a biological science technician who works for Alan Sawyer, a USDA ecologist and entomologist.

Sawyer, who works out of the agency's plant lab in Cape Cod, Mass., plots out the de-

gree of infestation on each tree, and when each was first attacked. "He will know the age of the oldest damage, so he'll get a history of the infestation in that area," Panagakos said.

The beetles are thought to have hitched a ride over from Asia in untreated wooden packing cases. Soon after detection in Brooklyn, they cropped up in Amityville, then Islip, Queens and beyond. Scientists attribute some of the spread to the transport of infested trees for use as firewood.

The most recent new detection was in Massapequa, where trees showing signs of infestation were chopped down last year. All told, Long Island has about 30 square miles in quarantine — 23 in and around Ami-

tyville and seven in Islip.

Inside those boundaries, staffers from the USDA and the state department of agriculture and markets conduct tree surveys. Those bearing signs of infestation are destroyed.

Female Asian long-horned beetles lay eggs in pits they create by chewing through tree bark. They look like oversized cigarette burns; close inspection reveals the telltale chew marks from beetles' mandibles. Hatched larvae burrow into the heart of the tree, then eat their way out as they transform into grubs. One telltale indicator this time of year is frass, the digested wood that larvae excrete. Pushed out of the trees, it looks like shredded wheat.



Notorious Asian long-horned beetle, above, and damage typical of the invasive species.



Months later, the larvae pupate into adults, which fly away. Over time, the bore holes they leave behind disrupt trees' circulatory systems, and they die.

"Some of the exit holes heal up over time," Panagakos said. "We cut a cross section, sand it down and count the rings to determine when that beetle actually left the tree."

Thanks to work like this, Gittleman said, "We have a great deal more understanding of the beetle biology, behavior, population dynamics, mating and life cycles."

Projections from Sawyer's research helped the USDA locate a new infestation on Staten Island last year, he said.

## THE MONTH OF MAY

## You can see

The bay side of Jones Beach, where the water quietly laps on hard flat shoreline, is an excellent location to look for horseshoe crabs. Starting around the middle of this month, during the high tides of the full and new moons, the sand at many beaches Islandwide will be studded with the brown shells of this odd aquatic creature. Already, by the thousands, they are paddling ashore to mate. In many cases, the crabs are literally hooking up, as the male crab's shell is curved upward so it fits neatly onto the female's. Many are also molting — shedding their shells — as they grow. That accounts for the piles of left-behind shells you'll find at both North and South Shore beaches.

Historically, the crabs have been taken by some commercial fishermen for bait, and that has prompted concerns for their population. Their eggs provide food for migrating shorebirds, and their blood is used in tests for toxins in some drugs. To find them, choose



NEWSDAY PHOTO, 2006 / BRYN NELSON

Horseshoe crabs, whose eggs provide food for shorebirds, shed their shells.

just about any calm beach on the North Shore or South Shore — bay shores are preferable over ocean beaches.

An evening walk to find the crabs is also scheduled for 7 p.m. May 17 at the Theodore Roosevelt Nature Center at Jones Beach State Park. People often cringe at the crabs' long, rigid tail that ends in a nasty-looking point. The crabs

use the tail, known as a telson, as a rudder in the water and to right themselves if they are flipped upside down on land. Thus has it been for the horseshoe crab for more than 350 million years.

— JOE HABERSTROH

## Out and about

**DEER PARK WALK.** 11 a.m. to 12:30 p.m. May 4 at the 850-acre Edgewood Preserve in Deer Park. For adults only, free. Hike through the grounds of this hidden gem. Must register with Seatuck Environmental Association, 631-356-3681.

**ON THE WING.** 8-11 a.m. May 10 at Theodore Roosevelt Nature Center, Jones Beach State Park. Stroll and discover migratory birds as they visit on their journey north. \$3. Must register, 516-679-7254.

**ON THE WING II.** 8:30-11:30 a.m. May 18 at Muttontown Preserve, East Norwich. Another spring migration walk here, this one three miles, and with a bird-banding demonstration and dis-

play of captured birds (which will be subsequently released). \$3. To register, 516-571-8500.

**HITHER AND YON.** Hiking the Pautanok Path, 10 a.m. May 24. From Napeague Harbor Road, then return via the hilly Serpent's Back Trail. Bring water and snacks. Free. Meet at the Hither Hills West overlook off Route 27, about 1 mile east of the Montauk Highway split. Sponsored by the East Hampton Trails Preservation Society. Hike leader, Judy Kossover, 631-267-6747.

**TO THE LIGHTHOUSE.** A three-mile stroll along the beach to Cedar Point Lighthouse, 10 a.m. May 31. Guest speaker will be member Bob Allen, great-grandson of the last lighthouse keeper. Free. Meet at the visitor's parking lot about a mile into the park in the Northwest section of East Hampton. Sponsored by the East Hampton Trails Preservation Society. Call hike leader Richard Lupoletti at 631-324-1127.

— LAURA MANN