

NEW ORLEANS MOSQUITO & TERMITE CONTROL BOARD

2007 ANNUAL REPORT



Aedes aegypti

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CITY OF NEW ORLEANS

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Coptotermes formosanus

DIRECTOR'S REPORT

The following is a summary of the activities of the NOMTCB for 2007.

Mosquito control functions again concentrated on the inspection and treatment of abandoned swimming pools. At the beginning of 2007 slightly more than 5,000 pools had been located. This increased to over 5,600 by year's end. Following a year of mosquitofish introductions, data supports that fish survival and reproduction are excellent in most of the pools, and that fish-positive pools will not produce mosquitoes. This is the largest biological mosquito control program ever undertaken in the country. Our cross-trained staff and numerous volunteers accomplished locating pools, data collection and delivering mosquitofish and bacterial larvicide. Although two-thirds of the original pools are now either being maintained by the homeowners or have been filled in or removed, this program will likely continue for several more years.

Buck moth adults collected in our surveillance traps in fall of 2007 indicate that there will be a high percentage of our live oak trees infested in the spring. This information has been released to arborists, civic associations and the Parks and Parkway Department.

Pest and disease related mosquito activity was at or below average. A major species shift in the population has continued. This is due to major ecological changes related to hurricane Katrina. Of particular note is the reemergence of the salt marsh mosquito, *Aedes sollicitans*. This species was the primary reason that our program began. Multiple ground and aerial treatments were used to control this pest and several potential vectors of West Nile virus. There was only one neuroinvasive human case of West Nile fever.

Our rodent and structural control division continued to do an outstanding job in responding to ameliorating complaints. In January, a total of 649 storm drains in the French Quarter were treated using 7,392 bait blocks. Bait consumption was evaluated after 14 days. The process was repeated in August. Citywide, we responded to 3,415 service requests, of which 1,101 had rodent activity on the property. This included treating several thousand storms with bait blocks. Faith-based volunteer groups have helped tremendously in supplying labor and materials for both our pool and rodent control programs.

Two thousand and seven was the first full year of implementation of our City-owned building Integrated Pest Management (IPM) program. By year's end, we have seen exceptional success with cooperation of other city agencies in implementing this program, and greatly reduced pest and sanitation problems in these buildings. The IPM process works through inspections, identification of the

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pests, detailed written recommendations, treatment and continued follow-up evaluations of the properties. One hundred forty-two inspections of numerous buildings were conducted this year.

Electronic technology is both a blessing and a curse; and the blessed things broke often this year. Numerous computer, phone, fax and copier problems were identified. Nearly all were resolved, and some seem to linger on. Several new databases were set up in 2007. Also, a preventative vehicle maintenance program (FleetMate) and a website were initiated. The Director especially acknowledges the dedicated and talented work that Mr. Ed Freytag, Senior Entomologist, does to keep up with resolving the daily issues we face to keep these gadgets working. As this writer can attest, the ability to understand or fix these things is inversely proportionate to one's age.

Our termite program continues to operate in high gear. Most of our work concerns our cooperative endeavor with Operation Full Stop, mainly in and around the French Quarter. This decade-old program has shown a significant reduction in termites and termite damage in the French Quarter. Several large field and laboratory studies on termite behavior, distribution and genetics have yielded numerous answers to important operational and academic questions. Increased emphasis in 2007 was on termite inspections. This process is critical to ferret out the remaining cryptic Formosan termite colonies in French Quarter structures. The USDA has documented a 70-95% reduction of FST in the French Quarter. We have unparalleled inspection technicians, especially in the use of acoustic and electromagnetic detection devices.

In 2007, we expanded our obligations to control termites in City-owned buildings. This effort saves countless dollars through prevention and remediation of termite damage. In addition, we control termites (through industry sponsored support) in several historic buildings and other public facilities. Some examples are; City and Audubon Park buildings, the Cabildo and Presbytere, the French Market, the Upper and Lower Pontalbas, the U.S. Mint, etc.

Also in 2007, our state Formosan termite survey yielded five parishes with FSTs that were previously unpublished. This is addition to five revealed in 2006. Parishes in Louisiana where FSTs have been collected and the data published by our staff members over the past ten years have outnumbered all previous parishes totaled. Our staff have been the leaders in national and Louisiana FST surveys. The current study is headed by our Principal Research Entomologist, Dr. Kenneth Brown.

A staff Ph.D. student, Carrie Owens, has begun a doctoral study to determine "What happens to termites when an area is flooded?" This unique field and genetics research is being done along the Mississippi River batture, and will monitor termite activity and environmental parameters as the river floods the batture and recedes each year. Ms. Owens is a geneticist specializing in termite colony genetic identification.

Our staff continues to disperse information on venomous spiders and caterpillars. Our staff published the first Louisiana state record of the Brown Widow spider. Dr. Ken Brown of our staff and Dr. Jerome Goddard in Mississippi are collaborating on the geographic spread in the U.S. of this spider.

It is doubtful that any organization in the country gives more talks than we do (recertification, school lectures, trade group talks, conference talks, etc.). Hardly a week goes by that one of our staff is not giving a local or out of town talk. Additionally, numerous grants and cooperative agreements were renewed in 2007, as well as several newly funded agreements.

Five new staff members were hired in 2007, two of which are fully committed to our termite division. All of these employees came on with exceptional abilities and great attitudes. In anticipation of the loss of a very key staff position, Mrs. Sara Ward was hired this year, as all good things seem to come to an end and a new generation takes up the task. Mrs. Pat Schultz has planned her retirement for March of 2008. Pat began her career here 27 years ago. She has been, and is, a phenomenal person and a dedicated city employee, and a friend of ours and of our families.

MOSQUITO FIELD OPERATIONS

STEVE SACKETT

The inspection and treatment of abandoned swimming pools continues to be one of our primary functions in the aftermath of Katrina. Thousands of houses remain unoccupied since the storm, and with the help of new aerial photos, we are still finding new pools which need larviciding and the introduction of mosquitofish (*Gambusia affinis*). We are also re-inspecting pools that were previously treated, utilizing labor from our mosquito, rodent, and termite divisions, as well as volunteers from Operation Blessing. One of our “lessons learned” from earlier pool treatments is that door hangers were not sufficient to notify homeowners/neighbors that fish had been placed into the pools. We found that in a small number of cases, fish were being killed by well-intentioned individuals who placed bleach or other toxic substances in the dirty pools hoping to eliminate mosquito breeding. We are now placing large, highly visible signs next to the pools stating that the pool is under treatment and that we should be notified if it is placed back into service. We are also conducting water quality tests to see if there are any pools that may not be able to support fish populations. Some of the parameters being checked are dissolved oxygen, ph, temperature, salinity, water depth, turbidity, nitrogen, and chlorine levels. Following a year of fish introductions, data supports that fish survival and reproduction are excellent in most of the pools, and that fish-positive pools will not produce mosquitoes. Small red-eared turtles (*Trachemys scripta elegans*) were also tested as biocontrol agents in two pools that were breeding heavily. It appears that turtles will do a good job in eliminating mosquito production but may not prove to have any benefits beyond those of mosquitofish.

Three hundred forty-three service requests for mosquito control were received during the year, along with several hundred requests for swimming pool inspections/treatments. The largest number of service requests came from people living adjacent to the marshes in eastern New Orleans during times of elevated salt marsh mosquito (*Aedes sollicitans*) activity. Multiple ground and aerial adulticiding treatments were utilized to combat this pest species. City-wide aerial treatments were conducted May through August in an attempt to interrupt the mos-

quito/bird transmission cycle for WNV and to reduce the probability of transmission to humans. Other ground and aerial adulticiding treatments were conducted as needed.

In cooperation with St. Tammany Mosquito Control and Dr. James Brown, we conducted field tests with our Britten-Norman Islander to determine droplet size and swath width. Droplets from our aircraft averaged 32 micrometers (LMD) and were well within label specifications. Previous to this test we were using 500-750 feet as our aerial swath width, but this test confirmed a minimum of 10 droplets per square cm at 1000 ft downwind of the application path. This number of droplets per square cm has proven to be effective in producing mosquito mortality. We plan to conduct cage tests to confirm the effective swath width and hope to increase our swath to 1000 ft, which would decrease treatment time and reduce chemical costs.



Fig. #1: Adult tan salt marsh mosquito after blood meal. (*Aedes sollicitans*)

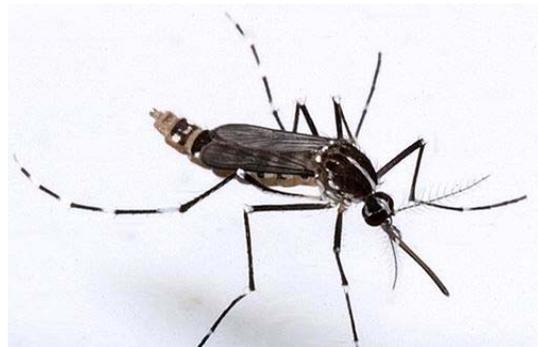


Fig. #2: Adult Asian tiger mosquito (*Aedes albopictus*)

Sites for both the New Jersey light traps and gravid traps were re-established throughout the city to monitor mosquito populations. Fifteen NJ traps are now operated twice per week, and 12 gravid traps are run weekly. Eleven mosquito pools from gravid traps were found positive for WNV in 2007, with *Culex quinquefasciatus* (nine pools), *Aedes aegypti* (one pool), and *Ae. albopictus* (one pool) identified as the vectors. The Minimum Infection Rate (MIR) was calculated for the mosquitoes collected from the gravid traps (Table 1). Data from other mosquito control districts indicate that when the MIR exceeds 6, there is a higher probability of WNV transmission to humans. Three cases of WNV were reported from New Orleans, two of those being fevers and one neuroinvasive disease. Dates of onset were from mid-September to mid-October.

**TABLE 1 NEW ORLEANS MOSQUITO POOLS
Minimum Infection Rate (MIR)**

Begin sampling 4-10-07 End sampling 10-30-07
(All mosquitoes collected with gravid traps run from 4-10-07 to 7-03-07 were negative)

MIR = (# positive pools/# mosquitoes tested) x 1000

Date of Collection	# Positive Pools	# Mosquitoes Tested	MIR
7-10-07	1	57	17.5
7-17-07	0	155	0
7-24-07	1	92	10.9
7-31-07	1	173	5.8
8-07-07	1	242	4.1
8-14-07	2	199	10.0
8-21-07	0	117	0
8-28-07	0	56	0
9-05-07	0	64	0
9-11-07	1	288	3.5
9-18-07	1	374	2.5
9-25-07	0	278	0
10-02-07	1	76	13.2
10-09-07	0	50	0
10-16-07	2	34	58.8
10-23-07	severe rain --- no collections		
10-30-07	0	33	0

Populations of buck moths were monitored again this year in four locations with the use of pheromone-baited sticky traps, and 200 oak trees in the same four areas were checked for caterpillars. The number of moths collected per trap may be a predictor of the subsequent caterpillar crop (see Table 2 and buck moth population chart). These data have proven to be useful to local civic associations and urban foresters when anticipating the need for caterpillar treatment in trees.

Table 2. BUCK MOTH CATERPILLAR INFESTATION

	% POSITIVE OAK TREES				ST.CHARLES (Treated)	#MOTHS/TRAP
	BANKS	BIENVILLE	TOLEDANO	AVERAGE		
1995	0	0	0	0 %	(0)	
1996	8	8	44	19%	(4)	
1997	67	70	70	69%	(32)	
1998	87	75	95	85%	(38)	
1999	98	93	98	96%	(64)	
2000	60	43	97	65%	(7)	
2001	36	17	73	42%	10	5.3
2002	51	13	39	34%	22	1.9
2003	44	35	25	35%	34	1.6
2004	78	81	93	84%	81	6.5
2005	100	100	100	100%	95	12.8
2006	60	76	76	71%	(86)	1.6 *
2007	100	100	86	95%	(77)	5.3
2008						5.3

Note: The average % positive oak trees and #moths/trap were calculated using data from three areas: Banks, Bienville, and Toledano. St. Charles Ave. was not included in the averages as it has been treated for caterpillars at different times throughout the survey. Data used to determine the number of moths/trap were collected from the first week in December through the first week in January. Moth data for 2008 was collected from December 2007 thru January 2008. Oak trees are monitored for caterpillars in mid-April. *Effects of flooding from hurricane Katrina in 2005 probably influenced data for 2006 (and later?).

NEW ORLEANS BUCK MOTH POPULATION

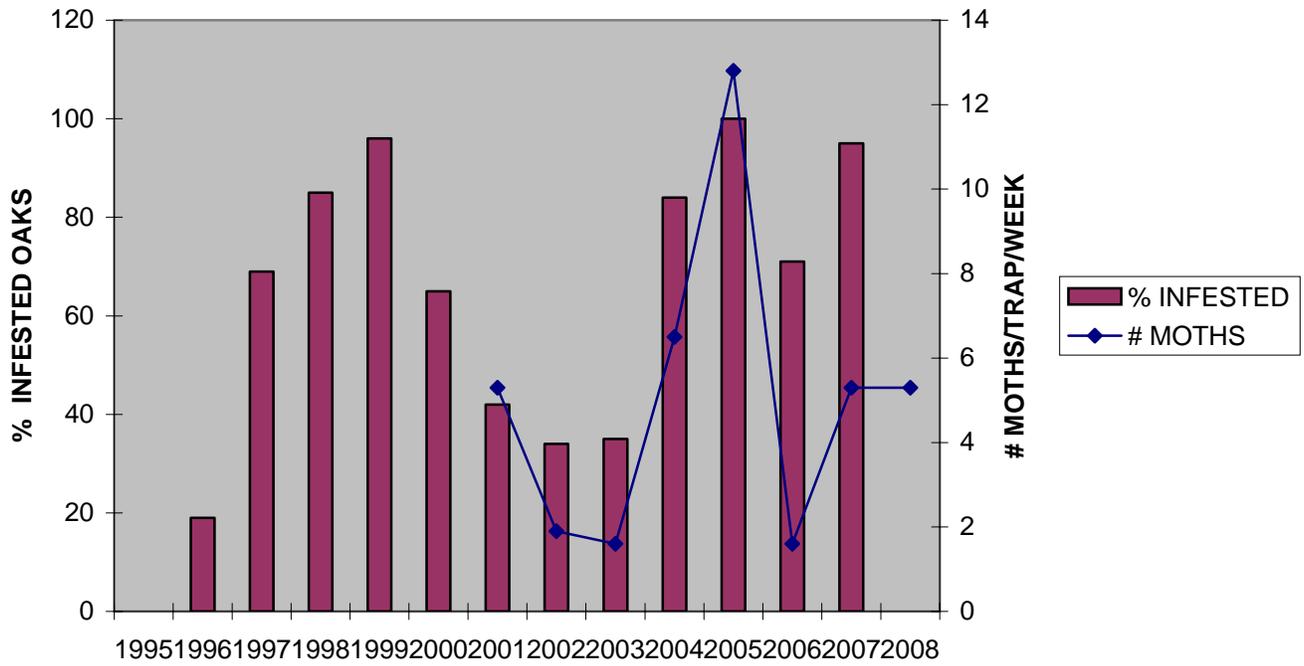


Fig. #3: Buck moth populations from 1995-2007.



Fig. #4: Fourth instar Buck moth caterpillar (*Hemiluca maia*) feeding on Live Oak tree.

BIOLOGICAL CONTROL

Greg Thompson

Hurricane Katrina drove out the city's population and rendered much of New Orleans uninhabitable. One of the myriad problems left in the wake of the storm was the large number of abandoned swimming pools that, if not treated by mosquito control personnel, would create both a massive mosquito problem and a possible public health crisis.

The NOM&TCB launched what is probably the largest biological control project ever attempted in an effort to make the outdoors livable and safe for our returning population. Pools that were not maintained are being located and their mosquito production controlled through the introduction of a small native omnivorous fish, *Gambusia affinis*.

Field workers had located slightly more than 5,000 pools as of January 1, 2007. This number has grown to over 5,600 during 2007. The relatively small increase in located pools (600) does not accurately represent the significant number of additional pools located during the year. A total of 1,300 more pools were located in 2007, but the merging of duplicate entries for previously located pools offset many newly located pools.

The cause of pools being reported multiple times was that many houses and even entire blocks of houses lacked address numbers. Workers were often forced to guess at a house's address and sometimes when volunteers or staff came upon a pool while working in the field they recorded a different address thus creating two or more files for the same property. Subsequent visits, using a printout of our database, discovered these mistakes and eliminated them.

Almost exactly two thirds of all the pools we have located are now either maintained by their owners or have been removed since our initial visit. This is a significant year-to-year increase in the percentage of pools that are no longer a threat to produce mosquitoes. Owners were maintaining less than half of the pools we visited in 2006.

This is great news in the sense that people are returning to New Orleans. Unfortunately, this still leaves about one third of the pool-owning population that has not returned more than two full years after Katrina and it

leaves approximately 1,900 known pools that will need to be visited one time a year or more for the foreseeable future.

The NOM&TCB and the city have been lucky in one way regarding these unattended pools. The pools have produced few mosquitoes during warm weather when the threat of mosquito-borne diseases is greatest. As everyone knows, we have nine months of warm weather in New Orleans. Ongoing research may discover why the abandoned pools do not present a problem when it is warm but produce huge numbers of mosquitoes when it is cold.

This pattern may be the result of a high number of larva-eating insect predators during the summer that then decline steeply in the winter and permits mosquitoes to develop into flying adults. We have until recently concentrated on control rather than on research but we now are attempting to learn as much as possible about the dynamics of the newly created ecosystems.

The NOM&TCB has received volunteer and financial assistance from the charitable organization, Operation Blessing. This group has provided major assistance, not only to the NOM&TCB, but also to many individuals and organizations throughout the hurricane-ravaged areas. Operation Blessing purchased most of the supplies necessary to make this project run efficiently, including but not limited to fish to release into the pools, tanks for holding the fish before transport to the field, ice chests to transport the fish to the pools, and large signs to post at the pools informing the public that fish have been released for mosquito control.

A second group provided us with an improved tool for locating previously unknown pools. The Regional Planning Commission sent us aerial photos of the city taken in March 2006.

Aerial photographs of New Orleans were already being used to locate pools and these pre-hurricane photographs were of great assistance in locating pools that were not visible from the street. However, awnings, pool covers and our city's wonderful live oaks obscured many pools from view. The hurricane destroyed awnings, removed pool covers and stripped leaves from

those trees it did not uproot. The new aerial photos taken post-hurricane have exposed many more backyard pools. Approximately 30% of the pools visible in these photos were previously unknown to us.

It is exciting to locate additional pools and to prevent them from causing problems, but it is discouraging, that despite our two-year effort to locate every pool, so many more pools are still being discovered. It is our hope that a combination of the completed survey sheets, the new aerial photos, the real estate listings that we use to locate homes advertised as having pools, and the phone-in complaints from neighbors will eventually lead us to all of the city's pools by the end of the new year.

The NOM&TCB spent all or part of 67 days in 2007 manning information tables throughout the City. We encouraged citizens at these events to fill out a survey about conditions in their neighborhoods. The NOM&TCB visited with over 20,000 people before and after they attended church services. We spoke with thousands more at multi-day public events such as the Earth Fest Conference at Tulane, the Spring & Fall Garden Shows at City Park and the Earth & Swamp Fests at Audubon Zoo. Everyone who completed the form was given a bag that contained fire ant bait, mosquito wipes and informational handouts on mosquitoes, rodents, spiders, and fire ants. We handed out over 9,000 bags of these bags during the year.

The bio-lab staff took steps this year to bring our lab into compliance with federal regulations. This was a major task that involved sorting through two decades of stored materials. All chemicals were identified and labeled. Those chemicals no longer of use were properly disposed. Equipment no longer of use was thrown away and the remaining equipment inventoried. The bio-lab will be kept in compliance and the inventory will be kept up-to-date.

Dr. Dawn Wesson from the Tulane School of Tropical Medicine brings her class our lab each year. This year the students were treated to lectures and discussions on integrated pest management, spiders and Africanized honey bees.

It has been our pleasure to work each year with one or more gifted high school students on their state science fair projects. This year we worked with two students. One of whom is back again in 2008 to work on an expansion of last year's project in a quest for a scholarship in biology.



Fig. #5:
Mieu Nguyen treats an
“abandoned” swimming pool
with larvicide.

VECTOR RODENT CONTROL

Joyce Brown

City Properties:

During the months of January through December of 2007, New Orleans Vector/Rodent Control surveyed and treated the following city or state buildings each month: Municipal Auditorium, Treme Center, Café du Monde, Woldenberg Park, Police Headquarters, Moonwalk, City Park, Tulane Hospital, Lee Circle, Main Bus Station, City Hall, Civil/Juvenile court building, River Walk, Main Library, Charity Hospital, and University Hospital, and selected fire stations, police stations, and NORD facilities. City facility inspections and treatments are conducted on an ongoing basis with additional follow-up for individual incoming department service requests. An emphasis was placed on educating the individuals at City properties regarding specific things they can do to manage the pest problems such as reducing clutter and improving sanitation practices.

In January, rodent control technicians surveyed and treated the storm drains in the French Quarter area with weather-resistant rodenticide bait blocks. A total of 649 storm drains were treated. The treatment used 7,392 bait blocks, and bait consumption was evaluated after 14 days. The procedure was repeated in August.

Service Requests:

During the months of January through December of 2007, New Orleans Vector/Rodent Control program received 3,415 residential requests for service from e-mail, 311, and calls to the rodent control office. All service requests were followed with inspections and treatments as required. Of 3,415 service requests, only 1,101 had rodent activity on the property.

Area-wide Treatments:

In the month of June through August, rodent control, along with pest control inspectors targeted various areas of the city to treat storm drains. The areas were selected based on rodent activity observed (burrows, droppings, live rodents) and elevated incoming requests for service.

Rodent Control also inspected and treated 841 storm drains in the Gentilly & New Orleans East area; 14 days later bait consumption was evaluated to determine if bait needed to be replenished. In Mid-City,

616 storm drains were treated and consumption was evaluated 14 days later.

A large volume of complaints was received from the Lakeview area from 05 February 2007-10 February 2007 and a crew of technicians surveyed and treated 252 storm drains in that area. A total of 3,024-bait blocks were placed into the storm drains.

The rodent control division received help from two humanitarian charities: Operation Blessing International and Campus Crusade for Christ. Operation Blessing came aboard in mid March with a program called "Rat busters." More than 50 volunteers were used in a single day to assist in treating the storm drains to control the rodents throughout the city of New Orleans. To date, Operation Blessing has supplied the rodent control with 9-15 volunteers once a week to assist with the storm drain treatment. These volunteers have allowed our rodent control division to treat large expanses of the city.

Cooperation with City Departments:

Rodent control also received help from Mr. Wesley Taylor and the Dept. of Environmental Enforcement by taking action on vacant houses and vacant lots which have been major areas of rodent harborage. Rodent control forwards lists of abandoned properties to Mr. Taylor.

Mr. Alfonse Martin, with the Downtown Development District, did a terrific job on mobilizing contractors to remove vegetation around City Hall and The Main Library. Parks and Parkways also assisted in trimming the vegetation at the Main Library.

Ms. Pamela Smith and Elsie Cobb-Wright with property management were instrumental in improving the sanitation of City Hall and other facilities. In addition, Parks and Parkways donated weed trimmers and lawn mowers to several fire stations which reduced the harborage that contributed to elevated rodent populations.

Career Development, Cross-Training, and Public Education:

Rodent control inspectors are continuing to be cross-trained to work with the mosquito and termite control

programs. The technicians and staff at NOMTCB and Rodent control are being cross-trained in all of our field duties. Several of our rodent control inspectors have been trained in mosquito control inspector duties such as yard inspections, operating and loading fog trucks, and termite control duties. Training continued throughout the year and will continue into 2008. NOMTCB has developed study sessions for rodent and mosquito control inspectors to enhance their skills and knowledge in pest control.

Each rodent control employee had a Performance Management Plan (PMP) implemented this year. The PMP had clear work objectives for the employee for the 2007 evaluation year. The PMP was a joint effort of the employee, the employee’s supervisor, and the Assistant Director. Five goals for the 2007 year were clearly described. In addition, line items were included with deadlines in order accomplish the five goals.

A brochure titled, “Rodent Control and Prevention after Hurricane Katrina, Guidelines for Property Owners and Tenants,” was written in 2006 to educate the public on things that everyone could do to reduce the rodent pressure. The brochures are distributed at association meetings, while on service requests and surveys, and by 311. More than 4,000 were distributed in 2007.

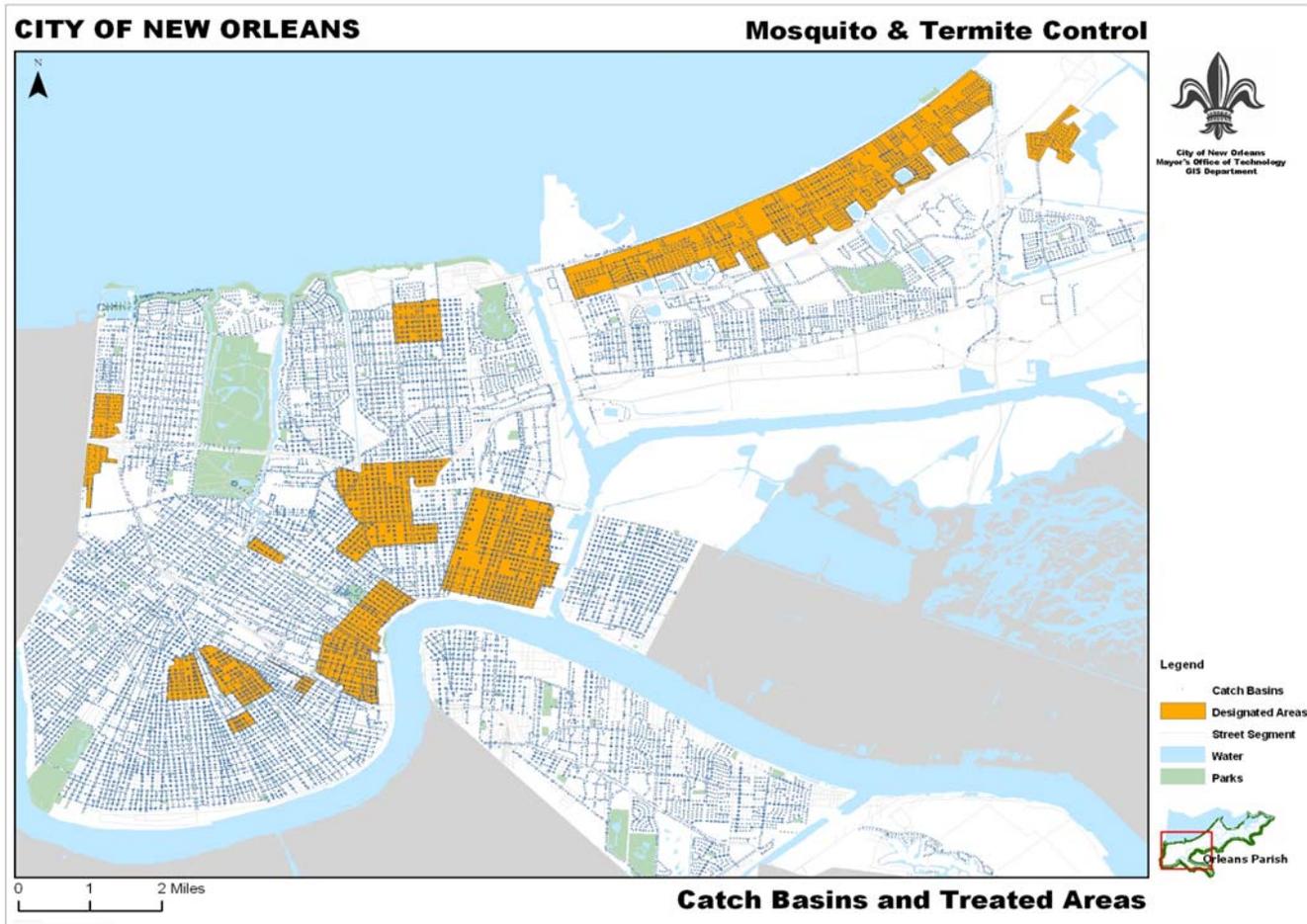


Fig. #6: Area-wide treatment of Norway rats in New Orleans from 2006 to May 2007. The areas shaded in orange have had weather-resistant rodent bait blocks placed in the storm drains.

AVIATION
Joseph Riedl

This year started of as usual. Public notice was given for our intentions to continue aerial spraying for mosquitoes. Our plan of operation was submitted and approved by the F.A.A. Insurance application forms were sent in. Pilot currency and flight physical requirements were met. Aircraft maintenance and required records were up to date.

Aerial treatments continued throughout the year over Orleans Parish using the twin-engine Islander. Dibrom pesticide was applied at the required rates and good results were attained. Some clogging occurred in our spraying system due to a breakdown in the fiberglass resin used in the construction of the tanks. This is reported to be caused by the hydrocarbons used in Dibrom. New tanks are being ordered to replace our very old, outdated ones. They are designed to resist the destructive effects of Dibrom pesticide.

Aircraft maintenance was carried out during the year. An annual and 100 hour inspection was accomplished. Several airworthiness directives (F.A.A. required) were complied with. One involved sending the engines to the factory for crankshaft replacements. This was due to cracks found on some of these hammer forged shafts being used by other operators. We were fortunate in that the Lycoming factory covered the costs. Other airworthiness directives pertained to inspecting the hardware on them, inspecting the L.H. magnetos on the engines and an inspection on the airplanes pitot tube. Preventative maintenance was accomplished. A facility and aircraft inspection was done during this period by the F.A.A., which we passed.

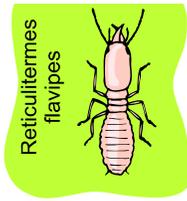
F.A.A. regulations were complied with. Necessary paperwork has been kept up to date. Pilot requirements were met. Inspection authorization was renewed. Plans are being made for the next spraying season.



Fig. #7: NOMTCB's twin-engine Britten-Norman Islander.

Integrated Pest Management

Vanessa R. Logan



It has been a year since the Integrated Pest Management (IPM) Program was implemented to serve the City of New Orleans buildings and educate employees on the importance of how to eliminate and/or reduce the rodent and pest infestations at their workplace. Thorough inspections, identification of the pests, detailed recommendations, treatment and continued evaluations of each site were implemented in order to be successful.

During the year the IPM program conducted 142 inspections. The buildings that were inspected and treated (if required) included: police stations, District Attorney Building, Municipal and Traffic Courts, fire stations, New Orleans Recreation Department (NORD), City Hall, Civil/ Juvenile Courts, Criminal Court, City of New Orleans Health Department Facilities, City of New Orleans Main Library, French & Flea Markets, Equipment Maintenance Department (EMD), Brake Tag Station, Youth Study Center and the Upper Pontalba Building.

Trash and debris were common and storage of construction materials caused rodent harborage. Buckets and faucet leaks that provided water for rodents were also common. Finally, vegetation and trees in need of trimming were prevalent, which created a bridge for rodents and pests to enter into the buildings.

Several species of pests were found in and around buildings. Ants collected and identified included: little black ant, red imported fire ant, crazy ant, pavement ant, and the Argentine ant. These ants were located in the interior or exterior of some of the buildings. In addition, spiders were found inside and outside of some buildings with their webs attached to ceilings, walls and baseboards. Brown Widow egg sacs were identified and collected for study. Other species of spiders found and collected were: common house spider, jumping spider, and cellar spider. Brochures were printed to inform citizens and employees of how to identify a brown widow spider. They were asked to contact our department for any questions and to seek immediate medical attention if bitten by the spider.



Fig. #8:
Red imported fire ant queen.
(*Solenopsis invicta*)



Fig. #9: Adult female brown widow spider (*Latrodectus geometricus*) showing characteristic orange hourglass marking and spiked egg sack.

In addition, the program has treated 342 rat burrows and 125 storm drains with 1,412 bait blocks (Generation Blue Max-LiphaTech Corporation or Top Gun Pellet Rodenticide Place Packs- J.T Eaton & Co.) We have also put out 37 rodent bait stations, 199 Maxforce Ant Bait Stations and 69 Maxforce Roach Bait Stations (Bayer Environmental Science), 1,457 glue boards for interior treatment and pest monitoring, and 263 ant mounds were treated with Amdro Fire Ant Bait (Ambrands). Initial inspection reports were provided to Property Management and selected parties.

IPM inspections and treatment are done on an on-going basis with bi-weekly or monthly inspections (if required). Employees have taken a proactive approach in reducing the rodent and pest problems in our city's buildings and in several cases the calls has been reduced (City Hall, Civil/ Juvenile Courts, New Orleans Recreation Department, City of New Orleans Main Library and Park & Parkways.) A strong emphasis has been placed on educating the employees at city properties on what they can do to manage and/or eliminate their pest problems. This will help to reduce the amount of pesticides used, save the City of New Orleans money and to maintain a pleasant workplace.

Lastly, there was team support from companies, organizations and departments to help beautify the exterior landscape of the city's buildings and to develop a liaison between agencies such as: Property Management, Parks & Parkways, The Downtown Development District, Bayou Tree Service and the Plant Gallery.

Extension, Technology Transfer and Education

This year workshops and conferences were attended for continuing education and to renew sanitarian license and certifications as a pest control technician.

Furthermore, in the case of an emergency and as a back up, the city facilities written and picture reports have been placed on CD's and on portable thumb drives as a convenient way of securing and having the records handy. In the future, classes will be taken in IPM as well as various areas of computer programming to enhance reports and data.

Lastly, admiration is extended to the staff of NOMTCB for their vision and enthusiasm regarding the implementation of the Integrated Pest Management Program to the City of New Orleans and to the supervisors and inspectors for assisting me with inspections.



Fig. #10:
Norway rat
(*Rattus norvegicus*).

This rat was trapped by the NOMTCB rodent control division between Tulane and the library.

TERMITE ENTOMOLOGY

ED FREYTAG

Computer and communications issues

It has been two long years since hurricane Katrina destroyed our offices at the Lakefront, and we are still operating out of several temporary building without permanent city services. We had to rely on wireless internet cards for connecting to the internet, and although slower than a direct line, the cards allowed us to function until microwave antennas were installed at the offices in the rental trailer and also at the USDA offices and laboratory. The microwave system allows us faster internet connections and network capabilities, as well as direct city phones and fax capabilities. Unfortunately, it also had problems with intermittent service, static and noisy phone connections, and sporadic fax send and receive functionality. A call to MIS usually gets the system back to normal within a couple of weeks, but then it may last only a few months before it starts to deteriorate again. A permanent solution would be to install a DSL phone line or hook up to the main fiber optic lines, but neither option is available to us presently.

Although officially not one of my duties covered in the job description as a Research Entomologist, I have accepted the challenge of fixing and maintaining the computers and computer peripherals in our departments (Mosquito, Termite and Rodent Control). I have spent at least a couple of days every week in 2007 dealing with computer issues in one form or another. It has been very challenging but also rewarding in assisting everyone with computer problems, from small issues such as demonstrating how to save a file on CD or re-installing a frozen printer, to recovering data from a hard drive suffering from a virus infection. Through trial and error I have been able to narrow down the best software (Norton Antivirus and Spyware Doctor, respectively) to reduce the risk associated with viruses and spy-ware, two of the most damaging and annoying problems encountered from being connected to the internet. Other computer problems I have dealt with have been power supply failures, hard drive crashes, keyboard malfunctions, internet connections lost, slow and sluggish performance, "lost" documents, software incompatibilities, and worst of all, hardware failures requiring service or shipment to a service center.

I assisted in the development, implementation and maintenance of termite, mosquito, and rodent inspection databases using Filemaker Pro software. One of the most important aspects of designing a database is to brainstorm how the information is going to be queried and analyzed. The information fields must be extremely explicit in order to produce the reports or answer the specific questions after the data has been entered. We have found that the best way to design a database is to work backwards: design mockups of the report and summaries and then build the database structure based on those designs.

Termite Inspections

As part of the cooperative efforts of our agency with USDA's Operation Fullstop, we conducted termite inspections in the French Quarter throughout the year using many specialized tools that have been adapted for or are commercially available for locating termites. During a typical inspection we will use the infrared camera to "see" moisture and damage, a microwave motion detection device (Termatrac and Pest-Finder) to "observe" activity, and an acoustic device (PCB Piezotronics) to "listen" to live termites. (Figure #11.)



Fig. #11: Dr. Kenneth Brown uses an acoustic detection device to locate Formosan subterranean termites.

Aside from a flashlight, a sharp instrument, and paper and pencil, we utilize our experience and knowledge to probe areas that are usually conducive to moisture problems and thus termite activity. We had planned on thoroughly testing the detection devices that we are using (infrared camera, Termatrac and Pestfinder motion detectors, and the acoustic device from USDA) to determine their advantages and limitations, but we only got a limited amount of testing due to time constraints and personnel limitations. We did find that the microwave motion detectors failed to detect termites accurately if they are present in wood that is over one inch thick. During an inspection in a building infested with drywood termites, we were able to locate the larger galleries using the infrared camera, but the smaller galleries were pretty much undetectable. The motion detection devices were sporadic at best in locating activity, possibly due to the thickness of the wood floors. We are planning to continue testing the detection instruments in the laboratory and in the field in 2008.

Termite Research

Dr. Maureen Wright, USDA microbiologist working with Operation Full Stop, tested the fungus *Paecilomyces fumosoroseus* for the control of Formosan subterranean termites (FST) in trees. Dr. Wright requested that we assist in the inspection and treatment phase of the study, based on our experience working with termiticide treatments in studies with Bayer, FMC and BASF. The study was initiated in late 2005 in City Park by injecting the fungal spores in trees using a foam-based carrier developed by scientists at USDA (Figure #12). These trees were lost due to hurricane Katrina, and new trees were located in late 2006.



The study was continued in 2007 by treating six live oak trees in the proximity of the University of New Orleans campus; four with the fungal spores and two with the foaming agent only. The foaming agent is made up of keratine hydrolysate protein, similar to gelatin, and when mixed with water produces thick foam when applied with a pressurized foaming machine. The trees were inspected using a Videoprobe flexible boroscope at monthly intervals to determine the effects of the fungal spores on the termite population inside the tree. We have also collected voucher samples from all the trees to identify the colonies using DNA analysis. As of the last inspection, it appears that the termite populations in the trees decreased shortly after the treatments, but then recovered after a few months. We will be assisting Dr. Wright in the treatment and inspection of additional trees in 2008.

In 2006 we tested a proprietary experimental bait attractant for Bayer Cropscience in Joe Brown Park but did not get any FST activity in the study site even though the tree in the test area was infested. Based on the lack of activity in this test, Bayer decided not to proceed with the same protocol in 2007. Instead, Bayer initiated a new study in July of an experimental termiticide formulation against FST. The protocol called for treating active mud trails around buildings that were in direct contact with soil so that the soil could be trenched and treated. We searched many areas for FST trails but ended up with only two small buildings in the Storyland theme located in City Park. The Party House had three mud trails which were treated with two different experimental formulations. The Crooked House had four mud trails, three were treated with only one of the formulations and the fourth trail was left as a control (untreated). One house in Kenner had a single mud trail and was treated with one of the formulations. The trench was difficult to dig because the extensive roots around the foundation were difficult to cut. Observations were taken at weekly intervals up to a month, then at 6 and 8 weeks. Soil samples were obtained from each of the termite mud trail locations and shipped for analysis at a testing laboratory chosen by Bayer. The observation from the mud trails was tabulated on an Excel spreadsheet and forwarded to Bayer. Due to confidentiality restrictions we cannot include the results of the test in this report without permission from Bayer.

Fig. #12: Foaming trees with fungal spores at City Park.

In late 2006 we initiated a project with Whitmire Micro-gen to test the efficacy of their Advance bait system against Formosan subterranean termites (FST). The objective of the study was to determine elimination of FST termites with the Advance bait system, which contains diflubenzuron as the active ingredient. Treatment sites were selected in 2006 and 2007 in Pontchartrain Park, Elysian Fields Ave., Leon C. Simon Blvd., and in a field along the levee bordered by Franklin Ave. and Lakeshore Drive. Either pine stakes or Advance bait stations were installed around tree stumps infested with FST. When termite activity was found in either the pine stakes or the Advance stations, a five-gallon bucket was buried to provide a large source of termites for collecting and dyeing in the laboratory. The dyed termites were then released back into the bucket for two purposes:



Fig. #13: Installing Whitmire Advance stations and bucket traps on Leon C. Simon Blvd.

1) To determine the foraging territory, and 2) to determine if more than one colony was occupying the same feeding source. A total of 72 stumps and trees were selected, of which only five had activity in the buckets. Unfortunately we selected many stumps that were later ground up and the Advance stations and buckets destroyed. A progress report was sent to Whitmire Micro-gen in October stating that due to lack of activity and loss of sites, no FST colonies had been baited with cartridges containing active ingredient. We also suggested that the protocol for 2008 allow the inclusion of infested live trees for the bait installations to lessen the possibility of damaged installations from clean-up crews. The plans for 2008 are to select 20-35 infested trees and install Advance bait stations around each. We are hoping to get quicker hits and install cartridges containing active ingredient in the stations by mid-summer.

We tested a cellulose insulation material against damage by FST at two locations within the Audubon Zoo property off Magazine Street. According to the manufacturer's product brochure, the cellulose is applied by blowing it into the voids between studs, and, unlike fiberglass insulation, it is pre-treated with a high concentration of borate that makes the cellulose material fireproof and also resistant to insect damage. A quick field test was designed to determine if FST would attack the material. Two stainless steel field cages from a previous CSIRO study (Australia's Commonwealth Scientific and Industrial Research Organization) were used to protect the test samples from the weather. The insulation was placed inside a roll of moistened cardboard with wood below it to provide the FST a feeding source. After two months in the field, both the cardboard and the wood were attacked, but the termites did not mud-over the insulation or penetrate it. A field study protocol will be submitted to the company to test the cellulose in 2008 following more scientific guidelines.

Presentations

Our department has always had speakers that have been in high demand to provide presentations for recertification meetings of various pest control associations in-state and also out of state. We strive to deliver PowerPoint presentations that are well designed, informative, with excellent photos and videos, but also interesting so that the audience will not lose interest during the one-hour session.

Two videos that always get a great audience response when discussing termite biology and control are the Formosan termites inside the tree as observed with the Videprobe, and Formosan termite soldiers attacking a fire ant. It is also worth noting that of all the meetings that we attend and give presentations, the venomous spider presentations seem to always draw the most interest from the audience because someone in the audience inevitably will confess to knowing a friend or relative that was bitten by a brown recluse. In all cases, no one has collected the spider for proper identification.

Photography

We have purchased digital cameras for our field technicians because pictures of mosquito, termites, rodents or other organisms or habitats are necessary for documentation and for producing reports, and are extremely necessary for our recertification presentations. We have a professional digital camera (Nikon D1X) that I used for taking high quality close-up pictures for the termite, venomous spider and rodent brochures. In 2008 we will be purchasing the Microoptics Lab XLT professional workstation (Figure #14) using Canon cameras for extreme macro photography. Included with this workstation will be a field camera and video with close-up lenses and flash. Since we lost all of our video footage to hurricane Katrina, we will have to produce all new videos b-rolls to produce in-house training videos.



Fig. #14: Hi-resolution, macro photography workstation.

OPERATIONAL TERMITE RESEARCH, HURRICANE ACTIVITIES, EXTENSION, AND EDUCATION & TRAINING

Termite Division

The work presented below is a summary of the following NOMTCB employees: Kenneth S. Brown, Eric Guidry, Barry Lyons, Aaron Mullins, Carrie B. Owens, Perry Ponseti, Claudia Riegel, George Shelton, Barry Yokum, and Jamie Ward. This organization is recognized nationally and internationally for their expertise in Formosan subterranean termite (FST) research, management, and extension. The ability of a municipal department to function at such a high level is a credit to the staff, board, and city.

Two thousand and seven was an extremely successful and productive year for the termite division. Three pest control inspectors (Eric Guidry, George Shelton, and Jamie Ward) were hired. Our new inspectors hit the ground running and have done an excellent job with operational and industry funded research. The termite division continued to protect numerous New Orleans' historic landmarks, city owned buildings, and historic and valuable trees from termite attack and damage in 2007. We expanded both our independent research and our collaborative efforts with scientists from the United States Department of Agriculture - Agricultural Research Service (USDA-ARS), Commonwealth Scientific and Industrial Research Organization (CSIRO), as well as multiple U.S. universities. Industry funded operational research projects increased with a substantial expansion in our agreement with Whitmire-MicroGen coming in the last quarter of 2007. These efforts ensure that New Orleans Mosquito and Termite Control Board (NOMTCB) continues to be on the forefront of basic and applied termite research which translates to improved management decisions to protect properties in one of the United States' most historic and termite prone areas.

City Properties

Several City Park and City of New Orleans properties with termite activity were identified and treated in 2007. Properties such as fire station #7, Stallings playground, selected New Orleans Recreation Department facilities, City Park concessions building, City Park bumper car building, and Stern Tennis Center among others were utilized in industry funded research projects to evaluate emerging termite management technologies. The result for the City is that the termite problems at these properties are remediated at no treat-

ment cost. The result for our group is that we continue to expand our industry supported research efforts and our employees get first hand experience with the latest termite management tools.

In addition to these "new" sites, the termite division maintained management efforts at multiple historic buildings such as the Cabildo and Presbytere, French Market, U.S. Mint, Gallier Hall, Madam John's Legacy Museum, Perseverance Hall, and the Upper and Lower Pontalba buildings. We continue to protect important City owned properties such as the New Orleans' and Algiers' courthouses, multiple fire stations, multiple libraries, the Vieux Carre Commission building, and City Hall. We also continue to protect historic and valuable city owned trees such as the historic oaks in City Park, oaks surrounding the Wildlife and Fisheries Building and lining Rampart Street, and the palms lining Canal Street.

Barry Lyons, Jaime Ward, and Perry Ponseti were the people who are primary responsible for protecting these important properties. They received valuable assistance from Barry Yokum, Eric Guidry, George Shelton, and Angelo Anderson. We would like to recognize these employees for helping preserve some of our City's most valuable architecture and historic landmarks.

Independent Operational Research:

This year marked the initial field trial of a novel device for collecting large numbers of Formosan Subterranean Termite (FST) primary pairs developed by Barry Yokum, Laboratory Specialist I. Barry established approximately 100 primary pairs from the 2007 FST flight season for our laboratory's use using this new technique. The method was so successful that it will be utilized in Armstrong Park, the site of ongoing research in collaboration with Dr. Nan-Yao Su (University of Florida) to evaluate the number of primary pairs migrating into the park in 2008. This data will assist in determining the number of potential new colonies in an area with FST pressure similar to that of the French Quarter providing unique insight to the sustainability of the Operation Full-stop program.

(Continued on page 19)

Results of the 2006 statewide FST survey were published in the September 2007 issue of the Florida Entomologist. A manuscript detailing the results of the 2007 survey, which identified FST in five additional Louisiana Parishes (Figure #15), is currently in progress. As the focus of the USDA Operation Full-stop program shifts toward sustainability and applying lessons learned in the French Quarter to other areas of the U.S. where FST has been introduced, support for the implementation of a FST strikeforce grows. The concept of the FST strikeforce is to implement population control efforts in areas where FST becomes newly introduced thereby slowing the spread of this destructive pest across the southern United States. NOMTCB's efforts to document the current distribution of FST within the state of Louisiana will undoubtedly prove vital to these efforts.

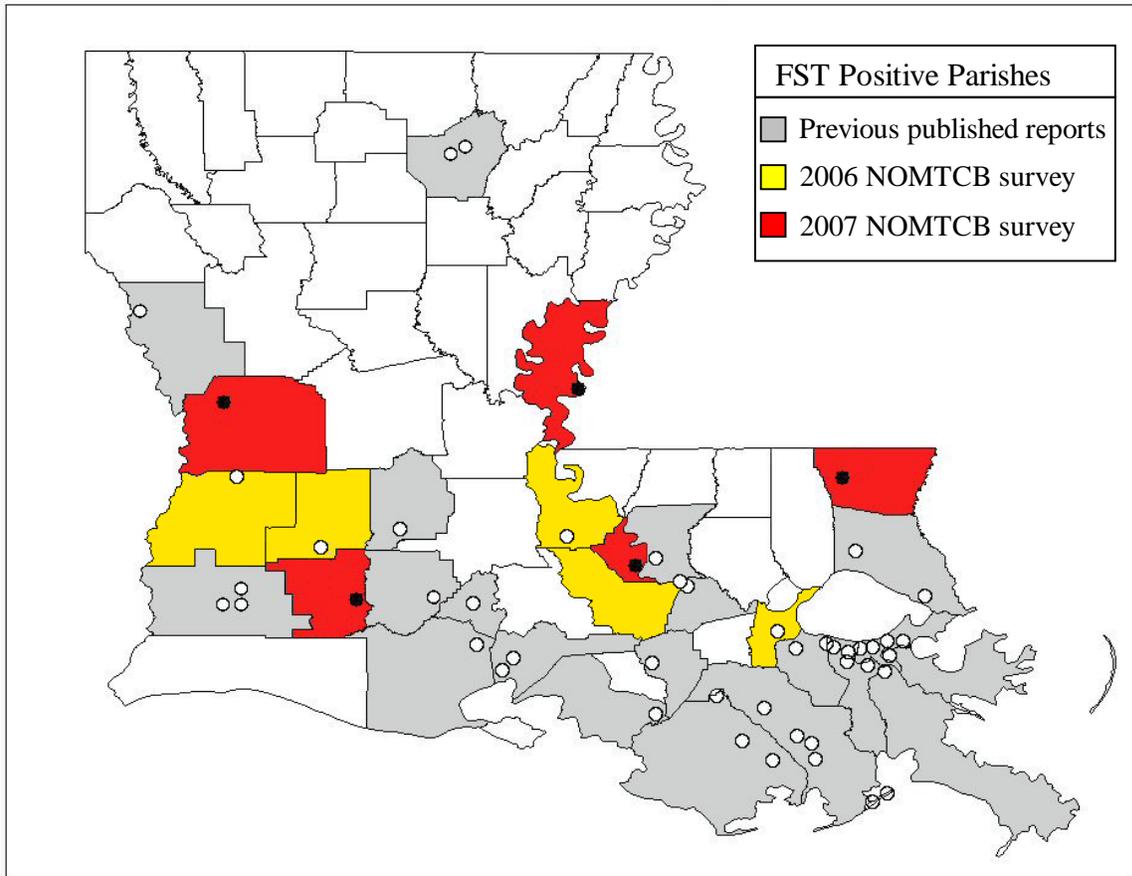


Fig. #15: Louisiana Formosan subterranean termite (FST) distribution showing FST positive parishes based on recent NOMTCB surveys and previous published reports.

Collaborations:

Termite detection is a primary area of interest for NOMTCB. Dr. Tom Fink of the University of Mississippi's National Center for Physical Acoustics visited our lab in November. During his visit, we conducted field and laboratory tests evaluating the ability of a sensitive single point laser to detect termite head-banging. Head-banging is a form of communication accomplished by the repeated striking of the soldier termite's head capsule against a substrate. The laser successfully detected termite head-banging both in the laboratory and at the Stern Tennis Center located in Uptown New Orleans. We are now planning on preparing a proof of concept manuscript detailing our findings. Future research may lead to a multipoint laser capable of scanning large areas of structural framing and sheetrock for acoustic emissions.

From the time a single brown widow (*Latrodectus geometricus*) specimen was identified by our group in October of 2006 until now, we have been working with several entomologists in multiple states to better understand the introduction, current distribution, and potential danger of this spider in the southern United States. We now have collection information from multiple locations in three states (Texas, Louisiana, and Mississippi) and are receiving help from researchers on the east coast to monitor for this species. A manuscript coauthored by Dr. Jerome Goddard of the Mississippi Department of Health entitled “Apparent Rapid Geographic Expansion of the Habitat of the Brown Widow Spider, *Latrodectus geometricus* (Araneae: Theridiidae)” detailing our findings has been preliminarily accepted by the Journal of Medical Entomology.

Our lab, in cooperation with Dr. Alan Lax, a USDA-ARS scientist and research leader, designed, developed, and tested a novel solar powered FST light trap. Twenty such traps were installed in the French Quarter during the 2007 spring FST flight season (Figure #16). Although the traps have some critical aspects that must be improved, they successfully trapped winged reproductives. George Shelton directed the collection of specimens from these traps on a daily basis during the flight season. These specimens will be used for a relatedness study conducted by Dr. Claudia Husseneder of Louisiana State University’s Department of Entomology. We have also been asked to deploy subsequent traps along the riverfront during the 2008 flight season. Further, we plan to utilize the traps for remote monitoring of FST activity in multiple areas of the state in conjunction with the FST “strikeforce” program. The information gathered from the traps will be used to document FST activity in these newly introduced areas, provide some indication of the level of FST activity, and allow us to evaluate the efficacy of control efforts. Our future plans include a patent search, publication, and investigating the use of the trap for other applications. (i.e. mosquito surveillance).

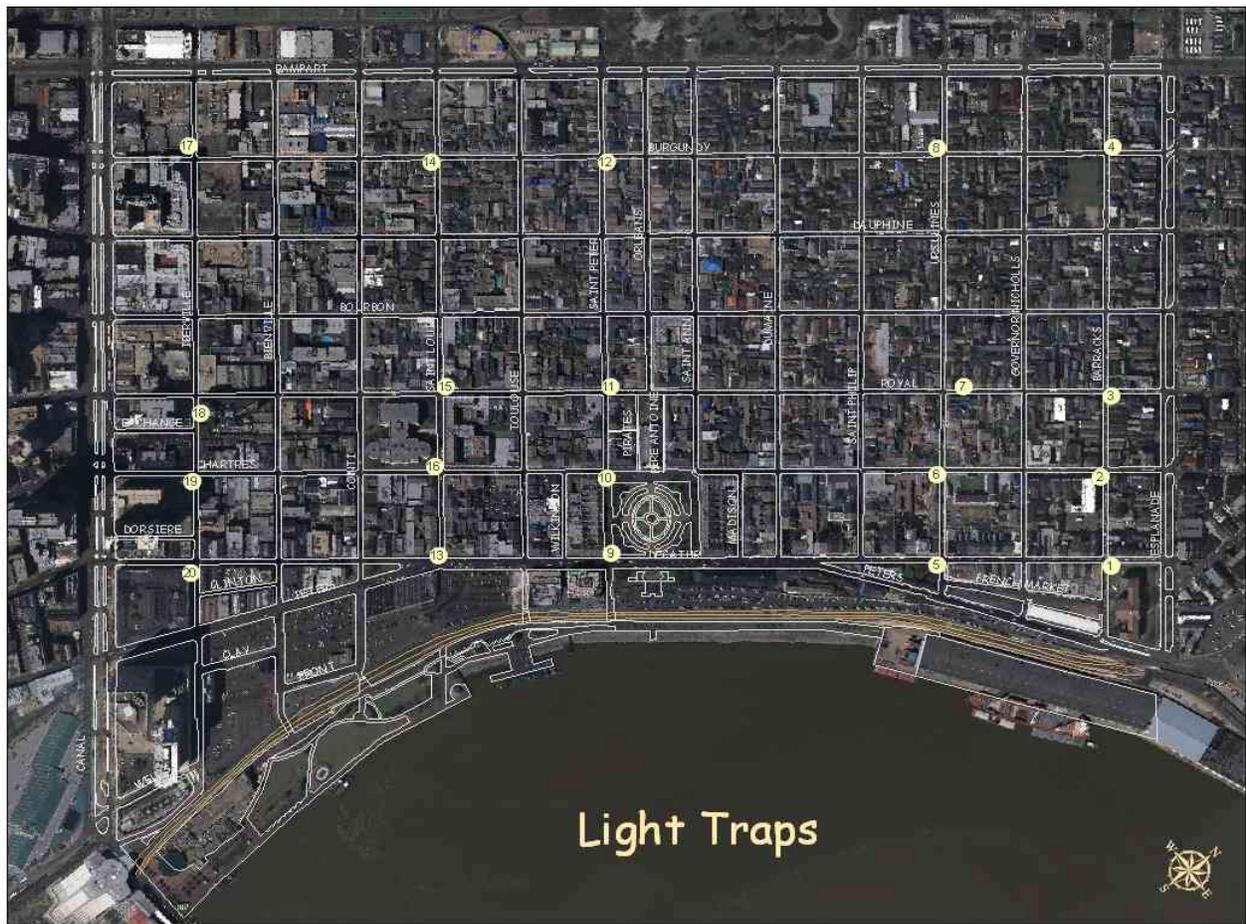


Fig. #16: Map of 2007 termite light trap locations in the French Quarter.

In May, our lab finalized the field portion of a research project designed to evaluate the relative susceptibility/resistance of selected non-cellulose materials to termite attack. This yearlong study was a joint effort between our lab and CSIRO researchers Drs. Michael Lenz and Jim Creffield. The specimens were removed from the field, evaluated for termite damage, and sent to CSIRO laboratories in Canberra. Publication of the results will undoubtedly raise international awareness of our research efforts here at NOMTCB and provide valuable information regarding termite resistant construction materials.

Industry-Supported Operational Research:

The termite division continues to conduct research directed and funded by corporations with interests in the pest control industry. We currently have field tests ongoing with Dow Agro-Sciences, Whitmire Micro-Gen, Bayer Environmental Sciences, and FMC. Confidentiality agreements preclude the publication of specific information regarding these studies. In general, however, the projects involve evaluations of improved and novel baiting technologies, novel liquid termiticide formulations and wood preservatives, as well as termite resistant insulation materials.

We continue to expand this area of our organizations responsibilities. In 2007, we installed a sizable field study within Audubon Zoo under agreement with FMC and increased our Dow Agro-Sciences field evaluation locations and projects. We also plan to begin experiments evaluating a new commercially available blown-in cellulose insulation for resistance to termite attack. The borate treated insulation showed promise in preliminary field evaluations and this product will be scientifically evaluated in 2008.

During the summer of 2007, our laboratory evaluated the mosquito repellent and larvicidal efficacy of a compound under a research agreement with Rage Enterprises LLC. During the mosquito repellency portion of the study, the compound was tested against commercially available formulations of Deet and Picardin as well as a subsequent novel compound. The compound was tested against Golden Bear for larvicidal activity. The results have been analyzed and reported to the manufacturer.

Operation Full-Stop:

Our division continues to be an integral part of the USDA's Operation Full-Stop Program in the French

Quarter. During 2007 we continued to monitor both in-ground termite activity and reproductive flight activity along the French Quarter riverfront. The elimination of termite activity from the railroad tracks, parks, planters, and trees along this portion of the riverfront is still touted as one of the biggest successes of the Operation Full-Stop Program. We also continue to monitor and protect a number of French Quarter properties (i.e. Bella Luna, the Cabildo and Presbytere, Decatur fire station, the French Market, Madam John's Legacy Museum, the upper and lower Pontalba apartments, the View Carre Commission building, the old U.S. Mint, Jackson Square, Woldenburg park), trees, as well as streets lining the French Quarter such as Canal St., Rampart St., and Esplanade Ave.

Louis Armstrong Park:

Although Louis Armstrong Park sits just outside the French Quarter, it has served as an important test site for many years providing valuable information on FST colony dynamics in a habitat very similar to that of the French Quarter, the feasibility of population control in such an environment, and the potential results if population management efforts are ceased in an area with such a high termite pressure. The final of these three factors has received much attention as of late as the program looks toward sustainability.

Railroad:

Four hundred and eighty Sentricon® Stations (®Registered trademark of Dow AgroSciences LLC, Indianapolis, IN) were installed in the soil and rocks along the mile of track and around the wooden planters on the levee by the French Quarter. Foraging territories of detectable colonies were determined using a mark-recapture technique. Termites were collected and preserved in 95% ethanol. Colony identity, social structure, and colony relatedness were determined by microsatellite genotyping. The initial termite treatment, 0.5% noviflumuron [Recruit™ II (Trademark of Dow AgroSciences LLC, Indianapolis, IN)], began at the railroad tracks on 30 September 2003 and treatment began in the stations surrounding the planters on 18 February 2004. Stations at the site were monitored monthly. If termites were detected after first elimination, 0.5% noviflumuron (Recruit™ III) was applied. USDA/ARS independent monitoring stations were installed along the riverfront railroad in 1998 and were inspected monthly.

From inception of treatment along the railroad (30 September 2003) and around the planters on the levee (18 February 2004) until November 2007, there has been a 95% reduction in FST activity detected in the USDA/ARS independent monitoring stations. Before treatment, four colonies were simple families, and 11 colonies were extended families. A year after treatment began, all treated colonies had disappeared and did not reappear during the course of this study. Colonies that were detected after treatment consisted of 12 simple families and six extended families; extended families found after treatment contained a higher number of reproductive neotenics than the extended families found before treatment. Extended families were more likely than simple families to move into in-ground stations that had been previously occupied by termite colonies. The colonies present before treatment and after treatment were different.

There has been persistent reinvasion of both *C. formosanus* and *R. flavipes* into the bait stations along the railroad and planters after the initial treatment; however, the total number stations at any given time with termites has remained less than 3% of the total number of stations at the site (Figure #17)

Subterranean Termite Activity at the Riverfront Railroad and Planters

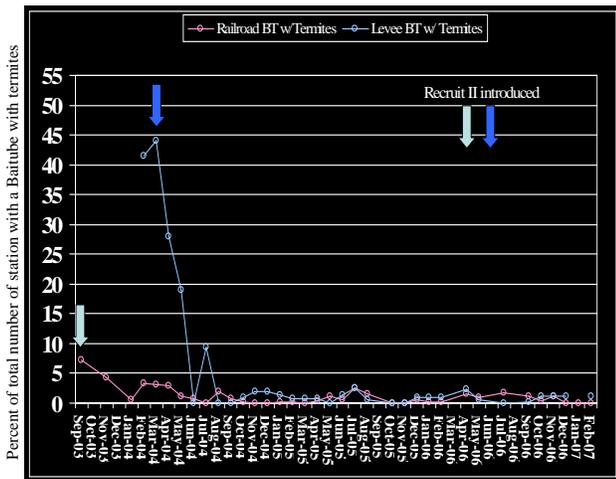


Fig. #17: The incidence of subterranean termites in Sentricon stations along the Riverfront railroad and planters since inception of the study. The data point for each month represents the percent of total bait stations at the site containing a Baitube™ infested with termites.

French Market

In 2003, 300 in-ground Sentricon stations were installed around the buildings and in the gardens surrounding the French Market. Soil access was available only in the gardens. Where soil access was not available, Sentricon in-ground bait stations were placed in the soil through access holes cored through the concrete every 10 feet around the perimeter of property.

The French Market was divided into three sections, the flea market, the red building, and Joan of Arc. Termite activity was monitored monthly and mark recapture was conducted to delineate FST colonies. On 16 October 2006, the concrete at the downriver end of the flea market and its bait stations were removed for renovations. The termites in remaining bait stations in the upriver portion of the flea market were treated with 0.5% noviflumuron (Recruit III) on the same day. Treatment began at the Joan of Arc section on 14 November 2006, and treatment began at the red building on 14 December 2006. Stations at the site were serviced monthly. When termites were absent from a treated bait station for 30 days, the Recruit III Baitube™ was removed and it was replaced by monitoring devices. If termites were detected after the initial elimination, 0.5% noviflumuron was applied following the manufacturers’ recommendations for treatment of shared-walled structures. The USDA/ARS independent monitoring stations were installed along the riverfront railroad in 1998 and were inspected monthly.

The site was infested with both *C. formosanus* and *R. flavipes*. There has been a 84% reduction in termite activity in the USDA/ARS independent monitoring stations surrounding the French Market (Figure #18). On the day of treatment, 36/40 in-ground Sentricon stations around the flea market were infested with FST. The initial treatment lasted from 16 October 2006 to 15 May 2007 at which point no more termites were found in the bait stations. Termites were collected and preserved in order to conduct microsatellite genotyping in the future. Reinvasion has occurred in the stations around the red building. A long-term monitoring/baiting program will continue at the site to maintain the termite pressure at low levels. The flea market is under a complete renovation and all bait stations were removed. Bait stations will be reinstalled at the completion of the renovation in spring 2008.

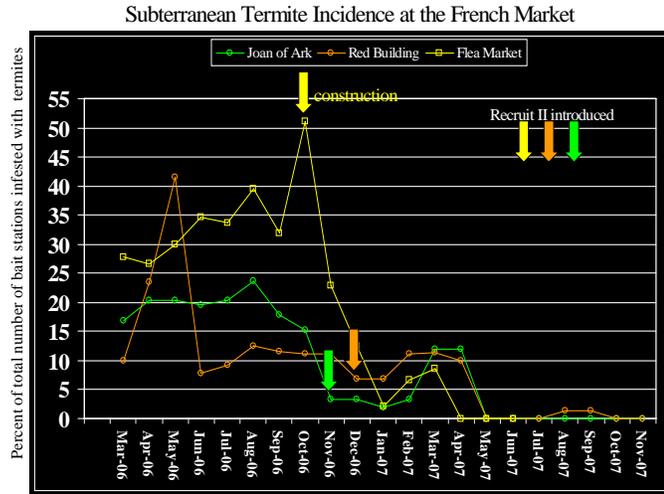


Fig. #18: The incidence of subterranean termites in Sentricon stations around the French Market. The data point for each month represents the percent bait stations at the site infested with termites.

Hurricane Activities:

The NOMTCB continues to be eligible for several types of FEMA reimbursement. We have been working with FEMA, the State of Louisiana, and the City of New Orleans to complete the Project Worksheets (PWs). We have completed PWs for approximately \$3,200,000.00. Many project worksheets have been funded and are in the NOMTCB budget. Cat B status was extended to March 2008. The Environmental group from the CDC are responsible for commensal rodent problems, issued a written audit of our rodent control program. This written audit was given to FEMA and the State allowing our Cat B eligibility to continue through March 2008. A written request for an extension has been submitted. We are maintaining excellent records of our documents for future auditing. We still have PWs at the State level that are being reviewed prior to disbursement. The process is slow and time consuming.

The status of the PWs for our buildings has been completed. This process has taken 2.5 years to complete. A property at the corner of Leon C. Simon and Elysian Fields has been secured for a new administrative building. Appropriate FEMA and State paperwork has been initiated.

Education and Training

Study sessions have been initiated to prepare NOMTCB employees for state certification. The study session program includes all of the information that will be covered on the exam including pesticide labels and labeling, governing legislation, pesticide safety, general entomology, termites, mosquitoes, general pests, etc. These study sessions usually consist of 1 to 1.5 hours of lecture followed by a 30 min laboratory designed to give employees hands-on training. We commonly have 15-20 employees at the study session and have been joined by employees of St. Bernard Parish Mosquito Control.

The following is a comprehensive list of scientific and extension publications and presentations members of NOMTCB participated in.

HONORS AND AWARDS:

K. S. Brown. 2007. Named to Tulane University School of Medicine Institutional Biosafety Committee (IBC).

Publications (peer reviewed):

Brown, K. S., B. M. Kard, and M. P. Doss. 2007. Influence of artificial guidelines in soil on channeling foraging subterranean termites (Isoptera: Rhinotermitidae). *J. Entomol. Sci.* 42: 421-425.

Brown, K. S., B. P. Yokum, C. Riegel, and M. K. Carroll. 2007. New parish records of *Coptotermes formosanus* (Isoptera: Rhinotermitidae) in Louisiana. *Florida Entomol.* 90: 570-572.

Husseneder, C., D. Sims, and C. Riegel, 2007. Evaluation of treatment success and patterns of reinfestation of the Formosan subterranean termite (Isoptera: Rhinotermitidae). *Journal of Economic Entomology* 100:1370-1380.

Publications (non-peer reviewed):

Riegel, C., and M.K. Carroll. 2007. Coring through concrete, brick, or asphalt for installation of subterranean termite bait stations. The City of New Orleans Mosquito and Termite Control Board extension bulletin Doc. NOMTCB 2-2007.

Posters/Presentations at Scientific Meetings

Brown, K. S., B. P. Yokum, C. Riegel, and M. K. Carroll. December 2007. New Parish records of *Coptotermes formosanus* (Isoptera: Rhinotermitidae) in Louisiana., 55th Annual Meeting of the ESA, San Diego, CA.

Broussard, G. H., K. S. Brown, A. L. Smith, M. P. Smith, D.. Kuehl, and B. Kard. December 2007. Foraging depths of *Reticulitermes flavipes* (Kollar) (Isoptera: Rhinotermitidae) on the Oklahoma tallgrass prairie, 55th Annual Meeting of the ESA, San Diego, CA.

Riegel, C., F.S. Guillot, A. Lax, and D. R. Ring, 2007. Subterranean termite management in New Orleans' historic French Quarter. The 55th Annual Meeting of the Entomological Society of America. San Diego, CA.

Smith, M.P., A. L. Smith, G.H. Broussard, K. S. Brown, and B. Kard. December 2007. Ecology, biology, and taxonomy of *Reticulitermes flavipes* (Kollar) on the tallgrass prairie preserve Cross-timbers. 55th Annual Meeting of the ESA, San Diego, CA.

Wright, M.S., C.A. Dunlap, M.A. Jackson, and E.D. Freytag. May 2007. Field evaluation of *Paecilomyces fumosoroseus* for control of Formosan subterranean termites. Annual meeting of the American Society for Microbiologists. Toronto, Canada.

Presentations:

Brown, K.S. January 12. The Brown Widow Spider and other local spiders of Medical Importance. City-Wide Emergency Preparedness Meeting at Oshner Hospital. Metairie, LA

Brown, K.S. January 20. Termite Foraging. E&G Pest Control Staff Training Session. New Orleans, LA

Kenneth S. Brown. January 30. Venomous arthropods of medical importance. Graduate public health course in the Department of Environmental Health Sciences of the School of Public Health and Tropical Medicine, Tulane University Medical Center, New Orleans, LA

Brown, K. S. March 6, April 10, 17. Venomous arthropods of medical importance. New Orleans Emergency 9-1-1 Monthly Training Meeting. New Orleans, LA.

Brown, K.S. March 6, April 10, 17. Venomous arthropods of medical importance. Tulane University Medical Center's Department of Environmental Health Sciences of the School of Public Health and Tropical Medicine Graduate Public Health Course. New Orleans, LA

Brown, K. S. March 14. Formosan Subterranean Termite Detection, Damage, and New Parish Records in Louisiana. Formosan Subterranean Termite Technical Committee Fifteenth Meeting. New Orleans, LA.

Brown, K.S. October 5. The brown widow spider and other local spiders of medical importance. Coastal Bend Pest Control Association annual meeting, Corpus Christi, TX.

Brown, K.S. December 4. The Formosan subterranean termite (Isoptera: Rhinotermitidae) in Louisiana: strategies to combat a growing problem. 50th annual meeting of the Louisiana Mosquito Control Association, Metairie, LA.

Brown, K.S. December 4. The brown widow spider (*Latrodectus geometricus*): an invasive species of medical importance . 50th annual meeting of the Louisiana Mosquito Control Association, Metairie, LA.

Brown, K.S. December 15. Wood destroying insects. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Brown, K. S., December 15. Stored product pests. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Brown, K. S., December 15. Pesticides and their mode of action. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Freytag, E. D. January 13. Venomous spiders. Greater New Orleans Pest Control Association, Metairie, LA.

Freytag, E. D. March 22. Africanized honey bees. Greater New Orleans Pest Control Association, Harahan, LA.

Freytag, E. D. May 1. Venomous spiders. Greater Baton Rouge Pest Control Association, Prairieville, LA

Freytag, E.D. October 5. IPM in pest control. Coastal Bend Pest Control Association, Corpus Christi, TX.

Owens, C. March 14. Project Update. Formosan Subterranean Termite Technical Meeting. New Orleans, LA.

Riegel, C. January 11. In the Wake of Calamity. Florida Pest Control Association. Orlando, FL

Riegel, C. What we learned from subterranean termites post-hurricane Katrina. Dow AgroSciences EastCoast Authorized Pest Control annual meeting. February 1, 2007, Orlando, FL.

Riegel, C. Rats, New Orleans Style. EPA Region VI State Lead Agency Spring Meeting. May 21, 2007, New Orleans, LA.

Riegel, C. March 14. French Quarter Research Update. USDA Technical Meeting. New Orleans, LA.

Riegel, C. December 15. Commodity fumigation. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Riegel, C. December 15. Ship fumigation. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Riegel, C. December 15. Invertebrate pest of wood and wood products. Structural, ship, and commodity fumigation recertification, Kenner, LA.

Riegel, C. and K.S. Brown, December 4. Africanized honey bee training of first responders in New Orleans. 50th Annual Louisiana Mosquito Control Association, Metairie, LA.

Riegel, C., and J. S. Brown. December 4. Area-wide treatment of storm drains for rodent management after hurricane Katrina. 50th Annual Louisiana Mosquito Control Association, Metairie, LA.

Workshops:

Brown, K.S. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

Guidry, E. G. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

Logan, V. R. Environmental Regulatory Compliance Conference, Alexandria, LA.

Logan, V.R. Greater New Orleans Pest Control Association, Kenner, LA.

Logan, V.R. Louisiana Public Health Association Educational Conference, Baton Rouge, LA.

Owens, C.B. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

Riegel, C. January. University of Florida's Africanized honey bees training, Ft. Lauderdale, FL,.

Riegel, C. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

Ward, J. L. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

Yokum, B.P. June. University of Florida's termite biology and identification short course, Ft. Lauderdale, FL, 2007.

2007 New Orleans Community Outreach:

Several presentations were made at homeowner association meetings and at church services. We offer information to the public about termites, termite control, mosquitoes, and rodent control. NOMTCB has been working with homeowner associations and nonprofit groups to deliver information and pest control products and services to the citizens. Bags containing donated ant bait, mosquito repellent wipes, glue boards, and informational technical sheets have been given away in at homeowner events. We obtain valuable information on rodent infestations and abandoned swimming pool locations.

Below is a list of the locations and functions NOMTCB serviced.

05-06-07-St.Paul Episcopal Church. 6249- Canal Blvd.
05-13-07-Pleasant Valley Missionary Baptist Church. 5919 Morrison Rd.
05-20-07-Bethany united Missionary Baptist Church. 4533-Mendez St.
05-26-07- Greek Orthodox Cathedral of the Holy Trinity Fair.
05-27-07- Greek Orthodox Cathedral of the Holy Trinity Fair.
06-03-07-First United Methodist Church 3401 Canal St.
06-03-07-Grace Episcopal Church 3700 Canal St.
06-10-07-Church of Christ. 4636 Elysian Fields Ave.
06-17-07-St.Anna's Church 1313 Esplanade Ave.
06-24-07-Blessid Francis Seelos Church. 3053 Dauphine St.
07-01-07-St. Gabriel the Archangel. 4700 Pineda. St.
07-07-07- Elmwood Park C.I.Acc. 3708 Gentilly Blvd.
07-07-07-St.Henry's Church. 812 General Pershin St.
07-08-07-St.Henry's Church. 812 Gen Pershin St.
07-14-07-St.Joan of Arc. Church. 8321 Burthe St.
07-15-07-St Joan of Arc. Church. 8321 Burthe St.
07-21-07-Corpus Christi Church. 2022 St. Bernard Ave.
07-22-07-Corpus Christi Church. 2022 St. Bernard Ave.
07-22-07- St. Joan Of Arc. Church. 8321 Burthe St.
07-28-07-Franklin Ave Baptist Church 2515 Franklin Ave.
07-28-07-St. Matthis Church. 4230 S. Broad St.
07-29-07-St. Matthis Church. 4230 S. Broad St.
08-05-07-St. Paul Lutheran Church. 2624 Burgundy St.
08-07-07-Night out against Crime. 4900 Good Drive.
08-07-07-Night out against Crime. Ferert St & Jena. St.
08-12-07-First Pentecostal Church. 122 N. Dorgenois St.
08-16-07-Holy Cross C. I. Assocation 5130 Charters St.
08-19-07-St. Luke Episcopal Church 1222 Dorgenois St.
08-26-07-Household of Faith 9300 I-10 Service Rd.
09-01-07-St Rita's Catholic Church-2729 Lowerline St.
09-02-07-St Rita's Catholic Church-2729 Lowerline St.
09-09-07-Household of Faith. 6300 Jackson Ave.
09-16-07-Trinity Episcopal Church-1329 Jackson Ave.
09-23-07-St.Paul Baptist Church- 1625 Annett St.