

The Pennsylvania Vector

Spreading News to the Vector Control Community

Volume 1, Issue 2

November 18, 2003

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Special points of interest:

- PVCA CONFERENCE November 19-21 State College, PA
- New theory about droughts and mosquito numbers
- Multi County Strategies: new look at being neighbors

From the Preface to Mosquito

"No animal on earth has touched so directly and profoundly the lives of so many human beings. For all of history, and all over the globe, she has been a nuisance, a pain, and an angel of death. The mosquito has killed great leaders, decimated armies, and decided the fates of nations. All this and she is roughly the size and weight of a grape seed."

NOAH Consulted for Surveillance Woes. Ark to be added in grant packages.

Submitted by: Editor

If this season is any indication of what we have to look forward to, West Nile County Coordinators and Regional DEP officials may have to start adding water craft to their grant packages in the coming years. Not only did the record rain falls cause farm fields and parks to become wetlands and marshes, some field technicians had to include swimmers safety training and scuba gear as part of their job description.

Pictured to the upper right, several Biologists are attempting to collect blood samples from a sentinel flock of chickens. As you can see, what was once a low level woodland site, became the "Black Lagoon" over night due to heavy rains.



Field techs teaching a sentinel flock to do the breast stroke. On the bank, the life-guard stands watch, rope in hand, as the back-up retriever waits for his command. I wonder if the car is still parked next to the creek?

Earlier this year, George Wojcik, told us of adulticiding operations in Portsmouth, Virginia. He pointed out that among the salt-water marshes and tidal areas, it was not uncommon to collect 1 to 2 thousand mosquitoes per night. Some of us chuckled because we'd never seen more than a few hundred adults per trap in nearly 3 years of research. It just doesn't get like that in PA.

Well, this year we found out what it's like to live in the "Skeeter Zone". Many of our county programs have reported record numbers of adult mosquitoes. Why not: the entire state was made into an mosquito incubator.

Fortunately, our state and county folks work hard and are committed to taking the lead in mosquito control. Great job

JUST GRIN AND BARE ITSmile!

When your job is catching mosquitoes, it can lead to some pretty interesting conversation. Usually it's our friends "buzzing" to share their wit. These normally don't sound very funny coming from them, but when you think about some of the things our rookies get into; Oh well.

How many techs does it take to collect a sample from a sewage treatment plant? 4 — 1 to collect the sample and 3 to pull him out.

How many techs does it take to handle dry ice? 3—1 to hold it and 2 to free his hands.

How many techs does it take to determine wind speed? 2—1 to throw the feather and 1 to drive the truck.

How many techs does it take to count mosquitoes? 1—as long as there are less than 20 in the trap.

Heard any of these before?

2003 Tyler Prize for Environmental Achievement.

Information submitted by Ben Russell

The 2003 Tyler Prize for Environmental Achievement has been awarded to Yoel Margalith to honor him for his contributions to the biological control of mosquitoes and black flies. His discovery in 1976 of the new microbial subspecies known as *Bacillus thuringiensis israelensis* (Bti) has had an enormous effect on human health and on environmental quality.

Bti is a naturally occurring microbial agent, which is lethal to most species of mosquitoes and black flies. Unlike chemical pesticides, Bti has little negative environmental impact, as it is specific to the larvae of mosquitoes and black flies, while other organisms are unaffected. This natural enemy to the mosquito and black fly is often far cheaper than chemical alternatives. No significant resistance to Bti has been reported in over twenty years of use. Bti has increasingly been chosen for controlling mosquito and black fly born diseases. Bti has been used very effectively against river blindness, along the Volta River in eleven African countries. The sight of millions has been saved and repopulation of deserted river valleys has been initiated. Additionally, malarial infections from pesticide resistant mosquitoes have dropped by 90% along the Yangtze River, China, which has a population of over 20 million people.

In addition to his discovery and research on Bti, Dr. Margalith has helped introduce the concept of Integrated Biological Control (IBC) against mosquitoes in the Middle East, Central Asia, Europe, and Africa. Integrated Biological Control includes not only production and introduction of Bti into mosquito and black fly infested areas but also involves ecological manipulation of the mosquito and black fly habitat as well as introduction of fish predators to the insects breeding areas.

Dr. Margalith was born in Yugoslavia on Feb 9, 1933. He was a prisoner from 1944-45 at the Bergen—Belzen and Terezienstadt Concentration Camps. He immigrated to Israel in 1948 and joined the Shaar Haamakin Kibbutz. He received his Bachelors' degree from the Department of Zoology at Hebrew University in Jerusalem in 1962, his MSc in Entomology in 1967 and a PhD degree in Parasitology in 1971 both from the Hebrew University. He was a visiting research associate at the Center for Biology and Natural Systems of Washington University in St. Louis, Missouri in 1972 and a visiting Associate Professor at Southern Illinois University from 1973—1975. In 1976, he returned to Israel as a Senior Scientist at the Israel Institute for Biological Research, Nez Ziona. He became a Senior lecturer in the Dept of Life Sciences at Ben Gurion Uni-

versity of the Negev in 1978 and was promoted to Associate Professor in 1988 where he currently is a Professor of Entomology and Director of the Center for Biological Control. He was also a visiting scholar of Tropical Public Health at Harvard School of Public Health from 1990-92.

Dr. Margalith has been an active researcher, teacher, and author. He has published some 60 scientific articles, the author of 2 books and co-editor of several collective volumes on Bacterial control of insect pests. He served as President of the Zoological Society of Israel from 1979-1981. Internationally recognized as a leader in his field, Margalith has won numerous awards, including an Honorary Doctorate from the Universidad Autonoma de Neuvo Leon in Monerrey, Mexico; the Presidential Citation Award from the American Mosquito Control Association (AMCA) and a Special Citation Award by the Greek Mosquito Abatement Organization. He was awarded the first honorary membership in the Hungarian Mosquito Control Association. The Society of Invertebrate Pathology bestowed upon him a special award for his achievements in Integrated Biological Control. He was also made the first honorary member of the European Mosquito Control Association. Margalith is popularly known as Israel's "Mr. Mosquito" and his effort saved millions of lives world-

Cougar VS Mosquitoes

Submitted by Christian Boyer

This season Union County purchased a Cougar ULV truck mounted sprayer. By doing this, we greatly increased our ability to kill large adult mosquito populations in the county that could spread West Nile Virus. This also became a valuable tool not only for this county, but also for the surrounding counties who chose to take advantage of the opportunity to use the

new sprayer. The Cougar was used several times during the peak of the season, including 3 times in Snyder County. Everyone who saw this unit in action was very impressed by its knock down power. Both counties saw, on average, a ten-fold decrease in mosquito populations after a treatment. It proved to be a powerful tool for our Integrated Mosquito Management program.

This was a great opportunity to increase our control efforts and also build stronger relationships with surrounding counties by sharing ideas, strategies, and developing team concepts for major mosquito control operations. This has proved to be cost effective and timely for state and county partners. No more waiting or paying for contract services.

STATE ENVIROTHON: Today's kids-tomorrows future.

Submitted by: Greg Molter

Last year the Danville High School, in Montour County, was host to the Pennsylvania Envirothon. I had the opportunity to observe and meet some very interesting young people. Although our West Nile Team didn't have a testable part in the competition, we did set up a display booth and talked to most of the students and faculty members present. I think it was informative for all of us.

The competition started with 53 of 65 teams giving oral presentations; a first in PA state competition. The teams did surprisingly well. (Of course, maybe I was the only one surprised.)

On the following morning, all 65 teams took to the field at PPL Montour Preserve for the second phase of the competition: field evaluations. Imagine, 65 teams (4-5 students per team), as many as 325 teenagers, in fatigues, jeans, t-shirts, multi col-

ored hair with ear, nose, lip, eye brow and tongue piercing wandering around in the great outdoors. Are you starting to see a horror story unfolding? Flashbacks to Woodstock!

Remain calm and take a deep breath; these students were all of the highest caliber. Like many of you, I had never been exposed to multi colored hair, body piercing, pants worn at the mid-groin area when I was in school. Kids that were on special teams or clubs, had good grades and were straight-laced, prim and proper.

On a normal day, in conversation around town, you might hear teenagers of today referred to as "Brats, Punks, and Delinquents". And if all teenagers were directly related to the actions of some, or even more obvious, their appearance, then those labels would probably fit. But they aren't all the same and to put these students in that grouping would be **ABSOLUTELY wrong**.

At every station, their enthusiastic attitude was evident. Competition directors tested the team members for attention to detail and information on the topics of forestry, aquatics, wildlife, soil, and water conservation practices. All students and teams were commended for their contributions. When all was said and done, Delaware County's team won with a score of 466 of a possible 500. Good Show!

Just a thought, but maybe these "Brats, Punks and Delinquents" are just what tomorrow needs. If memory serves me well, some of us were referred to as "Brats, Punks and Delinquents" in our day. I think we'll be in pretty good hands after all.

What's Happening in Region I:

Submitted by Raymond Delaney

As we wrap up the season here in the region, allow me to reacquaint you with our programs. The SE 5 county region includes Bucks, Chester, Delaware, Montgomery, and Philadelphia counties. Our combined WNV program's duties are the work of over 155 people employed by local & county health departments, the DEP, the PA Health Department, and PDA. Six of us work on the state's black fly program and close to thirty people work on rodent control issues.

This season our region encountered 62 West Nile Cases with 2 deaths, a marked change from 2002's 14 cases and three deaths. We responded to over 160 cases of WNV in horses, which is up from 13 last year and countless pools of positive mosquitoes. 5,414 birds fell out of the air on our watch and 89 of those tested positive

for the spread of WNV. Yearly we respond to approximately 10 rat bites and over 9,000 rodent complaints. In addition to responding to these complaints; the Philadelphia Department of Public Health is in the midst of a Urban Commensal Rodent Grant that covers a fifty block area of North Philadelphia. This area is being surveyed for rodent infestations and safety concerns with the goal to reduce these infestations and provide the residents with safety items such as non-slip bath mats, night-lights, handrails and smoke detectors. It also gives our Rat-Proofing Crew an opportunity to show off their handiwork. During this summer, some of us also had a chance to work with staff from the USDA who was in our region to trap and study the spread of WNV in live birds and small mammals. The USDA staff took blood and tissue samples from several different

species of animals and will process these samples this fall for WNV. The information from this study will be available to us in the future and would be a great PVCA presentation for the next conference.

To say that this region is busy would be understatement, but we did find some time this season, as I hope we all did, to take ourselves a little less seriously. Was it the time when our larviciding crews were questioned like terrorists accused of putting toxins into our sewer system? Was it the time when the mist off our dry ice was confused with an incendiary device? Maybe it was the time that the neighborhood gossip had you answer a pool complaint just to get back at her ex-brother-in-law? In any event working in Vector Control can be almost as much fun as it is rewarding; if only it paid well. And how was your season????

Drought Portends Mosquito Misery

Story by Jocelyn Kaiser, Savannah, Georgia

A rainy year means more mosquitoes, right? Not quite, suggests a study reported here on August 5th at the meeting of the Ecological Society of America. The research found that because dry weather knocks out key mosquito predators and competitors, last year's drought—not this year's rainfall—may best predict mosquito outbreaks in wetlands.

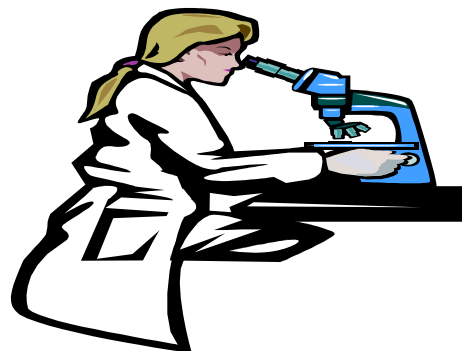
The idea for the research came to Jonathan Chase of Washington University in St. Louis, Missouri, and his wife Tiffany Knight, now a postdoctoral researcher at the University of Florida in Gainesville, after a pond they were studying in Pennsylvania dried up during a drought. The next year when the pond filled again, the number of mosquito larvae skyrocketed. To explore what was happening, the two ecologists surveyed about 30 ponds of three types: permanent, semi permanent, and temporary. In



permanent ponds, they found few mosquito larvae but plenty of fish, water beetles and other critters that feed on mosquito larvae. Mosquitoes were also scarce in ponds that dried up every year, in this case because they were rife with competition: zooplankton, snails, and tadpoles that compete with mosquito larvae for algae and other food.



But in ponds that were usually full but dried out after a drought in 1999, mosquito larvae burgeoned the next year, Chase reported. The reason, he and Knight suspect, is that drought killed both predators and competitors, which in these ponds aren't adapted to dry spells. The team found the same pattern when they created artificial wetlands: 1.5 meter wide tanks filled with soil and water that they stocked with mosquito larvae and other organisms found in the



natural ponds. After waiting 3 years to allow the communities to stabilize, the researchers slowly drained some tanks to create a drought. Mosquito larvae numbers the next year boomed compared with the tanks that were drained each year or kept full.

The team has found that drought the previous year correlates much better than the current year's rainfall with mosquito abundance in some cities, such as Winnipeg, Canada. Although Chase and Knight studied only two species of mosquitoes (*Anopheles quadrimaculatus* and *Culex pipiens*) that breed in wetlands, others have suggested that drought also plays a role in outbreaks of mosquitoes that breed in tree holes, such as the Asian tiger mosquito, notes Steven Juliano of Illinois State University, Normal. "A few people have thought about it, but nobody's done [this] systematic effort," he says.

Mosquito-killing virus may help slow West Nile spread

Taken from CNN.com/HEALTH April 24, 2003

The Agriculture Department says a disease that kills mosquitoes could be one way to slow the spread of West Nile virus. Jim Becnel, a scientist with the department's Agriculture Research Service, said that he and a team of researchers have come up with a new method to kill mosquitoes by infecting them with an illness called baculovirus. It only works on mosquitoes. "It's

kind of a killer for a killer," he said. The department wants companies to make mosquito-killing sprays from baculovirus and put it on the market. The agency got a patent on baculovirus, but it's up to manufacturers to make commercial sprays because federal law prohibits the government from doing so. Becnel said scientists discovered baculovirus in 1997 but took years to understand how it is

transmitted. They've found it infects a particular species of mosquito, *Culex*—a major carrier of West Nile virus. Researchers also noticed it works especially well on young *Culex* living in polluted wet areas. To kill larvae, they add magnesium to baculovirus and spray it on the larvae. The insects are dead within 2-3 days. It will be interesting to see which direction this product takes. More to come.

Palmerton area man issues warning

By Karen Cimms, Carbon County News

Warren Siegmond has a giant shell in his yard, left over from someone who moved away years ago. Thinking he could salvage it and make something attractive for the front yard of his Palmerton area home, he turned it into a birdbath. What he didn't know was that his birdbath had become a breeding ground for mosquitoes.

"This whole business about larva and mosquitoes, that happens to somebody else, in somebody else's back yard. We treat it very nonchalantly. It happens to very young people and very old people. There's nothing to be afraid of. Years ago, we just slapped at mosquitoes and never thought something else could happen to us. Mosquitoes were an annoyance and nothing else. That

was the way we grew up."

Siegmond listened to all the attention West Nile Virus was getting, and he worried about areas that looked like they might be breeding mosquitoes. "I remember looking at one place and thinking 'Boy, that has to be a breeding place,' not thinking that something in my front yard was breeding."

Siegmond has other containers around his yard to feed wildlife. He would check on them occasionally and dump out any water that would accumulate. "I thought that I had everything clean, and then I saw this giant clam shell, and saw black things and they were moving. I thought they looked like little tadpoles." The tadpoles were quite tiny, and Siegmond

also notices several dead mosquitoes in and around the water in the shell. He got a spoon and dipped the tiny swimmers into a jar with more water from the birdbath. He sealed the jar tightly. Within a few days, adult mosquitoes appeared inside. Once he realized his birdbath was a mosquito breeding ground, Siegmond scrubbed it out. He watches it carefully and replaces the water every couple days.

"I don't know whether or not we were breeding a harmful disease, but the fact is that they were there." "I would advise anyone to be more careful, especially after a light rain. Check anywhere there is just enough water, warmth and no disturbance, even a cover on the pool.." Sounds like Warrens working for us. Reduction starts at home: every home.

DID YOU KNOW? A Taste of Mosquito Trivia.

Did you know....9 out of 10 *Aedes aegypti* blood meals will be taken from human hosts.

Did you know....although an adult mosquito will only ingest 3 milligrams of blood, that amount greatly exceeds its own body weight.

Did you know....*Toxorhynchites brevipalpis* is a voracious cannibal. During the larvae phase, it will consume other mosquito larvae within

its reach, including its own.

Did you know..... *Toxorhynchites brevipalpis* never takes a blood meal. It depends on nectar for sustenance. It's also very shy; almost never observed in nature.

Did you know..... *Anopheles darlingi* feeds almost exclusively on humans and is perhaps the most dangerous vector in the Americas.

Did you know.....Adults mosquitoes have been caught at altitudes in excess of 5,000 ft.

"The largest of all mosquito larvae is the *Toxorhynchites brevipalpis*."

New Tool for Mosquito Surveillance:

By Louise Bugbee, Lehigh Co.

Lehigh County WNV Staff utilized a Collection Bottle Rotator Trap this season in their mosquito surveillance. The Rotator allows a catch up to a 24-hour period to be segregated into 8 separate containers. The intervals are determined by the collector and set using a programmable timer. The trap was set four times from late July through early October. It was programmed

to rotate every three hours. Results were fairly consistent. *Ochlerotatus trivittatus* dominated the hours from just before dusk until About two hours after dark but were caught in every time period. *Culex salinarius*, were present in consistent numbers from just after dark until early morning. *Ades vexans* were present in small numbers throughout the day and night. Other genuses repre-

sented in nominal numbers included *Psorophora*, *Anopheles* and *Coquillettidia*.

The Rotator is a valuable device to learn which species are most active during a given time of the day or night. It can provide valuable data from a particular site for the planning and timing of adulticiding operations. (See picture pg 6, Region 2.)

What's Happening in Region 2:

Submitted by Len Forte

In the Northeast Region, an unusually large amount of precipitation produced a bumper crop of mosquitoes in 2003. From June to September rainfall amounts recorded were 12.91 inches above normal, creating numerous breeding habitats for container breeders and flood pool mosquitoes. Some areas actually received more precipitation in localized heavy downpours.

In June and July, *Culex restuans* numbers were extremely high. Gravid trap collections often contained greater than 100 mosquitoes per trap. The first mosquito pool that tested positive for WNV was a pool of *Culex restuans* adults collected on July 16, 2003 in Carbon Co. On July 30, 2003 a WNV positive *Ochlerotatus triseriatus* adult was collected in Luzerne Co. This was the first non-*Culex* mosquito testing positive in the region.

In August and September large

flood pools created by heavy rains produced extremely large numbers of flood pool mosquitoes. Light trap collections often contained greater than 1000 adult mosquitoes. Flood pool species, *Ochlerotatus trivittatus*, *Aedes vexans*, and *Psophora ferox* predominated in these collections. The first *Oc. Trivittatus* adult tested positive on September 9th from Lehigh Co. *Ae. vexans* went positive from a trap collected on September 4th in Luzerne Co.

Several other species have tested positive for WNV in the region. *Anopheles punctipennis*, *Oc. japonicus*, *Cu. Pipiens* and *Cu. salinarius* also tested positive. An interesting development was reported of two species that previously had not tested positive in Pennsylvania. *Culiseta melanura* adults from two collections reported on September 3rd and October 7th from Pike and Wayne Counties, and *Coquillettidia perturbans* reported on September 3rd from

Wayne Co. were WNV positive.

In the summer of 2003 the Northeast Region experienced the most viral activity ever previously reported. This year there were 105 WNV positive birds, 11 WNV positive horses, 61 WNV positive mosquito pools, and 7 sentinel chickens reported as of October 21st. There were also 14 human cases that sought medical attention for West Nile Virus



Check out Lehigh Co.'s Rotor Trap. Another tool of the trade. (story pg 5)

What's Happening in Region 3

Submitted by Sven-Erik Spichiger

Region three was a hotbed for West Nile Virus activity this past vector season. Listed below are results as compiled by **Kristen Bardell (South Central Regional WNV Coordinator)**, with the aid of **James Haefner (WNV-Central Office)**. This listing indicates the date each county had its first positive in individual categories. **Adams Co.**— 7/25 mosquito; 8/4 bird; 9/8 veterinary; 9/18 human. **Bedford Co.**— 6/30 bird; 8/20 mosquito; 9/12 human. **Berks Co.**— 7/28 mosquito; 8/13 bird; 9/1 veterinary; 9/8 sentinel; 9/9 human. **Blair Co.**— 7/14 mosquito; 8/29 bird; 8/29 sentinel. **Cumberland Co.**— 7/22 bird; 7/28 mosquito; 8/21 human; 9/11 veterinary. **Dauphin Co.**— 7/25 mosquito; 8/4 sentinel; 8/13 bird; 9/5 human; 9/24 veterinary. **Franklin Co.**— 7/11 mosquito; 8/13 bird; 9/2 human; 9/4 veterinary. **Fulton Co.**— 7/23 mos-

quito. **Huntingdon Co.**— 7/23 mosquito; 8/29 bird. **Juniata Co.**— 6/24 mosquito; 8/14 bird; 9/26 veterinary. **Lancaster Co.**— 7/21 mosquito; 7/22 bird; 7/22 veterinary; 7/30 human; 8/14 sentinel. **Lebanon Co.**— 7/15 mosquito; 7/30 human; 8/14 sentinel; 8/18 bird; 9/9 veterinary. **Mifflin Co.**— 7/28 mosquito; 9/3 bird; 9/9 veterinary. **Perry Co.**— 7/28 mosquito; 8/21 bird; 10/3 veterinary; 10/9 human. **York Co.**— 7/4 mosquito; 7/15 bird; 7/30 human; 8/15 sentinel; 9/8 veterinary. **State VS South Central** totals: Human cases: 212-SC 92 = 43%. Mosquito pos: 1187-SC 629=53%. Bird pos: 544-SC 210=39%. Sentinel pos: 537-SC335= 62%. Veterinary pos: 86-SC 50= 58%.

Kristen Waller (DOH) provided the following on Lyme Disease cases for the region. Adams 86; Bedford 6; Berks 189; Blair 5; Cumberland 47; Dauphin

52; Franklin 19; Huntingdon & Juniata <5 each; Lancaster 86; Lebanon 35; Mifflin 5; Perry 8; York 508.

Black fly programs were conducted in 8 of the 15 region three counties this past season. Participating counties included Adams, Berks, Cumberland, Dauphin, Huntingdon, Juniata, Perry, and York. Frequent rains throughout the season led to near constant high water levels, which hampered both surveillance and treatments throughout the region. Conditions for treatment of the Susquehanna River were only suitable on two occasions, but were not optimal. The less than optimal conditions resulted in limited effectiveness for the two events. The loss of key counties to the overall program also helped to contribute to higher than normal adult populations in the region this season. **-Dave Rebeck (DEP-Black Fly Program)**

Region 4: “Hand-Shake Coalition”

The military is not the only organization that can use the COALITION FORMULA.

Several counties in our region have formed a “Hand-Shake” Coalition to combat the ever growing Bio Terror group know as Mosquitoes. Columbia, Montour, Snyder, and Union County WNV coordinators have agreed that working together to fight adult mosquitoes would not only be more effective, but also less costly to the program.

Early in the season, this group discussed the grant proposals and how mosquito control in each area might best be achieved. It became evident that to provide the total control package in each area, would require additional equipment for each county and would still require the use of contract services to get the desired effect. With that in mind, the topic soon focused on “sharing the wealth” so to speak. By each of us gathering portions of

the total equipment requirement, we would still be able to provide general protection and control to our specific counties as needed, but could also attack the larger problem areas as a team. After all, we are receiving the same training, we’re working under the same leadership (DEP), and we all want to provide assistance to our counties, without draining our budgets.

Here’s a little example of how our team reacts. A coordinator discovers large numbers of mosquitoes that have been identified as potential WNV vectors. It’s decided that to best handle the area, a combination of barrier treatments, hand-held ULV, and a mobile ULV unit will be needed. With the local coordinator taking the lead, the regional office is contacted, as well as other team players who can assist with applying pesticides: Union Co. has a truck mounted ULV spray unit while Columbia, Montour, and Snyder have various back-pack units and experi-

enced applicators. A meeting date and time is set, we review the plan of action, ensure all agencies have been contacted, then it’s “charge”. It’s a little more drawn out than that, but you get the idea. Working together allows us to brainstorm our ideas and to provide the very best control measures available from the home team.

Not every location requires the full “Normandy Invasion” response. It may only need the assistance of one or two additional personnel. But no matter what the situation, it’s nice to know help is just a phone call away.

We are already looking to 2004 and enhancing our coalition force. By researching new and improved equipment options now, we can plan for adding new tools to our regional arsenal and have them on hand before a major outbreak takes place

So bring on the mosquitoes—the “Coalition” is ready. Relax; we’ve got your back (at least each other’s)!

Region 5: Health Department Throws Money Down the Sewer

Submitted by **Bill Todaro**

In order to prevent another outbreak of West Nile Virus in the Pittsburgh area, the County Health department focused its efforts on public education, code enforcement and timely treatment of known Culex mosquito breeding sites. Our Public information office kept the local media well informed about West Nile and they produced an excellent public service announcement that played on radio stations all season. Starting in March, we trained over 100 County and Municipal staff about mosquitoes, disease and pesticides. About 75 of these staff were then either certified or registered as pesticide technicians by the Pennsylvania Department of Agriculture. One team responded to public complaints about abandoned swimming pools, scrap auto tires, while the other team focused on treating catch basins. The

plan was to treat all of the mosquito breeding sites that could be found in the City and the surrounding municipal areas.

The pesticides chosen for the job were Vectolex WSP and Altosid XR ingots. Both formulations had no impact on non-target fish, amphibians, birds or animals and so were considered safe enough for the city streets. However, based on cost and relative ease of use, three pallets (sixty cases) of Vectolex were used to less than ten cases of the Altosid ingots.

The combined effort resulted in thousands of complaint responses and over 50,000 breeding site treatments in the City of Pittsburgh and participating municipalities. In response to rising Culex mosquito populations, based on gravid trap catches, the first round of catch basin treatments began in late June with a second round in late August.

At least \$60,000 of the state grant was spent just on pesticides alone, but there was only one human case of West Nile Virus in the City and 9 cases in the rest of the County, most being from municipal areas that had not treated their catch basins.



Pictured are personnel from region 3 doing similar catch basin treatments in Lancaster County. *Peddling Pesticides*: I wonder if they printed their license number on the back of their tee shirts?

PVCA ANNUAL CONFERENCE LINE UP

Editor

The Pennsylvania Vector Control Association Annual Conference is about to begin. We hope you enjoy your time with us. Here is a list of conference speakers and subject matter.

WEDNESDAY

REGISTRATION: 11:00-12:00
 WELCOMING REMARKS—**Gary Jones PVCA President**
 SUMMARY OF THE PA WNV PROGRAM—**Dan Arbegast**
 VECTORS AND BIOTERRORISM -
Michael Turell
 IPM of RODENT CONTROL—
Mark Lacey
 BIRD CONTROL—
Kim Lewis
 LYME DISEASE—Rodent & Deer
Jacquelyn Hakims
 VECTEST & RAMP—WNV TEST

Mike Hutchinson
 MEET THE MEDIA— (banquet)
Mark Newberg
 THURSDAY
 RODENT CONTROL IN PHILADEL-
 PHIA—**Randy Clever**
 PA BLACK FLY SUPPRESSION
 HISTORY— **Jon Raemore**
 VECTOR COMPETANCE—
Michael Turell
 MOSQUITO GENETICS & SUR-
 VEILLANCE— **Dina Fonseca**
 DELAWARE/ MARYLAND WNV
 PROGRAMS—**Chris Lesser**
 AERIAL LARVICIDING NEW JER-
 SEY—**John Holick**
 PVCA OUTSTANDING STUDENT—
Brad Lovet
 FORMULAS & MORE- **Bill German**
 CALIBRATION OF ULV EQUIP-
 MENT—**William Zawicki**

WOODLAND POOL MOSQUITO
 CONTROL—**Chris Lesser**
 BEES AND MOSQUITO CONTROL—
Dennis Van Englesdorp
 IMOSQUITO CONTROL EQUIP-
 MENT—(in parking lot)
 FRIDAY
 STINGING INSECTS—**Joe Fitz-
 patrick**
 PA LYME AND TICK/BED BUGS
 UPDATE—**Steve Jacobs**
 INVASIVE FOREST INSECTS IN
 PA—**Shahla Werner DCNR**
 UNDERSTANDING PESTICIDE
 EXPOSURE AND INCREASING AP-
 PICATOR PROTECTION—**Monte
 Furry**
 PVCA BUSINESS MEETING

COMING EVENTS

Items listed here have been submitted by the PVCA Staff, general membership, or vendors. We encourage you to take advantage of this option. It is recommended that if you have scheduled events that would involve county or regional offices, placement in this news letter may assist in reaching affected and interested parties.

NOV 19-21—PVCA Annual Conference, State College

NOV 25— Region 4 Year End Wrap-up, DEP Regional Offices, Williamsport

DEC 5—2004 WNV Grant Package Drafts to DEP Regional Coordinators by close of business.

DEC 3—Region 6 Year End Wrap-up, DEP Mercer Co CO-OP Ext.

DEC 8—Region 5 Year End Wrap-up, DEP Pittsburg

DEC 9—Region 2 Year End Wrap-up, DOH Wilkes-Barre

DEC 11—Region 1 Year End Wrap-up, DEP Regional Offices, Conshohocken

DEC 15—Region 3 Year End Wrap-up, DEP Harrisburg

JAN 15— News letter items due.

What's Happening in Region 6:

Information from Scott Dudzic

This summer, the northwest region experienced heavy rainfalls and few days of sunshine. Our longest dry period in the region lasted five or six days. The extreme weather created many floodwater habitats for mosquitoes to breed in.

County and DEP WNV program offices were overwhelmed with incoming calls from individuals and community leaders. The bulk of

these were to report standing water and major adult mosquito problem areas. With the amount of standing water present, WNV staff could not get to all problem areas before adult mosquitoes started to hatch off. Due to the large number of mosquitoes, county WNV staff quickly became experts in ULV adult mosquito control.

Relief came to the region October

2nd, with the first snowfall. After that, the region had several hard frosts with only a few warm days. Adult mosquito catches have been very low or nonexistent for the past several weeks.

This summer provided a busy and stressful environment for county WNV staff. The long hours of larvaciding and ULV application experiences gained, will only help to en-

Black Fly Program Experiences Difficult Season

Submitted by David Rebeck

The PA-DEP Black Fly Suppression Program experienced heavy rainfall and very high stream and river flows during the 2003 treatment season. This summer was the second wettest in Pennsylvania history, with 16.90 inches of precipitation. Only during the flood year of 1972, has our state received more summer rainfall, when 16.94 inches were recorded. The continuous precipitation created high and turbulent waterways and resulted in numerous missed black fly treatments in participating counties. As a result of missed treatments, and an early end to the treatment season, adult black fly pest populations were unusually high in some areas of the state during mid-summer through fall.

Thirty-three Pennsylvania counties participated in the 2003 PA-DEP program. Fifty-three streams and rivers were monitored and treated, if necessary, for black fly populations. Human pest black fly species in the *Simulium jenningsi* complex were most abundant in the Allegheny, Delaware, Schuylkill, Susquehanna, and Youghiogheny river drainages. Elevated river levels and unsafe wading conditions resulted in a reduced number of larval and pupal samples collected during the year. PA-DEP biologists and summer interns collected 2,521 larval and pupal samples from April 3rd to October 3rd. In contrast, the number of adult samples increased slightly in 2003, with 4,924 samples collected from April 2nd to November 4th. A total of 7,445 black fly samples were collected and identified in 2003 to determine the need for, timing of,



and effectiveness of black fly treatments.

Statewide black fly treatments began in late April and early May. All black fly applications used *Bacillus thuringiensis* var. *israelensis*, or *Bti*, a naturally occurring soil bacterium. Vectobac 12AS™, manufactured by Valent Biosciences Corporation, was the only *Bti* control product used this season. Helicopter Applicators Inc. and AgRotors Inc. completed all helicopter applications. A few small streams were treated with backpack sprayers by PA-DEP biologists.



Treatment costs increased substantially in 2003 as a result of the high river and stream flows. The increased costs resulted in budget shortages that brought an early end to the 2003 treatment season in the Susquehanna, Juniata, Delaware, and Schuylkill river systems. Treatments ended on the Susquehanna and Juniata in mid to late July. The last *Bti* applications on the Delaware and Schuylkill rivers occurred in mid August. The western half of Pennsylvania fared a bit better, with Allegheny and Youghiogheny River treatments continuing until late August.

With treatments ending early, adult black fly populations increased throughout the summer, peaked in mid September, and continued above normal through the end of October. Sample results varied greatly from region to region. Good larval control from April through July in some areas of the state, continued to suppress adult numbers through late summer. However, other areas of Pennsylvania experienced adult black fly populations 1 to 25 times above established pest levels. This contributed to numerous citizen complaints, legislator concerns, and increased economic impact on recreational and outdoor activities. The PA-DEP Black Fly Program regrets not being able to do a better job controlling black flies due to uncontrollable weather circumstances. Our only wish for Christmas this year is normal precipitation and a successful treatment season in 2004!

Space reserved for vendors: 1/8 page free to sustaining members, otherwise 1/8 page \$50, 1/4 page \$75, 1/2 page \$100 and full page \$200. Contact Andy Kyle for more information regarding advertising in our newsletter.

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Information sources: DEP, DoH, & the Department of Agriculture

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Scott Sikora
503 Sunset Road, West Reading, PA 19611
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sickora@belllabs.com

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Dan Alarcon
100 Willowbrook Lane
Suite 105
West Chester, PA 19382
(610) 431-7658
Fax (610) 431-7837
daniel.alarcon@JCEhrlich.com



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Mosquito Control
Jeff Hottenstein
Control Consultant

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www.valentbiosciences.com

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Montour County
Dept. of Vector Management
30 Woodbine Lane
Danville, PA 17821

Questions/Submissions:
Phone: 570-271-3021
Fax: 570-271-3078
Email: montourwvnc@chilitech.net



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The Pennsylvania Vector is an informational news letter, written and produced for the purpose of providing the members of the PVCA with updates on activities conducted by this group and to highlight innovations made in the field of vector control. Articles herein have been reviewed for content and to the best of my knowledge contain the most current information available. The Pennsylvania Vector will be mailed to organization members and placed on the PVCA web site.

Items posted in "Coming Events" are submitted by the general membership and staff. Posting herein allows for the widest dissemination to all members of the organization. Should the event need to be cancelled or rescheduled (after publication), revisions will not be printed or mailed to the membership as part of the News Letter process. These revisions should be submitted as soon as possible by email or fax to the PVCA web site.

Organizations are encouraged to submit News Letter articles and can do so by contacting this office. Cut-off dates : Jan 15th, May 15th, and Sep 15th. Publications will be issued Feb, Jun, and Oct.

PRESIDENT'S Corner:

Gary Jones



The following information was provided by CDC as of November 5, and passed along to all WNV Coordinators and staff by Dan Arbegast. It's worth repeating. During 2003, a total of 8,219 human cases of WNV infection have been reported. Of 8,087 (98%) cases for which demographic data were available, 4,253 (53%) occurred among males; the median age was 47 years (range: 1 month--99 years), and the dates of illness onset ranged from March 28 to October 22. Of the 8,087 cases, 182 cases were fatal. A total of 713 presumptive West Nile viremic blood donors have been reported to ArboNET, including 621 (87%) from the following nine western and mid-western states: CO, KS, NE, NM, ND, OK, SD, TX, and WY. Of the 583 donors for whom data are completely reported, six (1 %) subsequently had neuro-invasive disease (median age: 45 years [range: 28 – 76 years) and 89 (15 %) had West Nile fever.

EDITOR'S Corner:

Greg Molter



It's been one full year since we started "The Pennsylvania Vector" and I couldn't be happier with the support we've received from staff and members alike. You have made this newsletter possible.

The first edition proved to be the test by fire: deadlines, financial restraints, establishing paid advertising, and collecting stories. Ok; so we missed our first deadline—and the second, but we did finally produce. What was a 4 to 6 page publication, quickly spread to 14 pages. You did get to meet the staff, and even a little back ground about themselves. We found vendor's willing to place ads and we had our first edition professionally printed (a financial learning experience, at the least). This edition. Which looked like we would only have 1 or 2 articles. But then the articles began flowing in: information that just HAD to be in this edition. Talk about a sigh of relief; wow! I got feeling so good I even added a section for humorous stories and jokes (Grin and Bare it). Maybe you have something for next edition? Anyway, all well that ends well

In closing, I wish to thank you the support articles and information needed to keep the "Vector" alive and well. Working together, we can continue providing a newsletter with informational content and that's enjoyable to read.