



**Board of  
Commissioners**

**William M. Ellis  
Chairman**

**Thomas B. Hart**

**Sarah E. Larsen**

**George T. Mann,  
Jr.**

**Lawrence J.  
Murphy,**

**Richard H.  
Pritchett, III**

**Bruce C. Scott**

**Executive  
Director  
T. Wayne Gale**



Photo by Katie Heggemeier

**2011 Annual Report  
Lee County Mosquito Control District**

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## Board of Commissioners



**Mike Ellis  
Area 3**

Commissioner Ellis was first elected to the Board from Area 3 in 2004 and was then re-elected in the 2008 election.

**Dear Residents, Colleagues, and Friends,**

I have had the pleasure of serving as Chair of the Lee County Mosquito Control District for 2011, so on behalf of Board of Commissioners it is with great pleasure that we present to you our annual report. We are proud to be able to provide the opportunity for the District employees to highlight achievements during the past year.

Please feel free to contact me, any Board member or our helpful staff, should you have any questions or concerns about the District's programs or services.

**Sincerely,  
Mike Ellis, Chairman  
Board of Commissioners  
Lee County Mosquito Control District**

### **Front Row**

**S. Larsen,  
B. Scott,  
T.W. Gale  
M. Ellis  
G.T. Mann, Jr.  
L. Murphy**

### **Back Row**

**T. Hart  
R. Pritchett**





## Board of Commissioners

The Lee County Mosquito Control District board is comprised of seven commissioners representing seven areas, and the areas shall be nearly equal in population as possible. Commissioners are elected, at large, in the General Election, by qualified electors residing within the district. This is a 4-year term, non-partisan office. A vacancy on the board shall be filled, by appointment, by the Governor, for the remainder of the unexpired term. A Lee County Mosquito Control District and Lee County Hyacinth Control District commissioner takes office the 2nd Tuesday following the General Election. Commissioners receive a \$400 a month stipend for serving on the Board.

### Area 1

Lawrence J. Murphy was first elected to the Board in 2000, and has been re-elected since that time including the 2008 election and continues to serve as the Board Secretary/Treasurer.



### Area 2

Sarah E. Larsen was elected in 2010 and served as Vice Chair for 2011.



### Area 4

Richard H. Pritchett, III was first elected to the Board in 1994 and has been re-elected since that time including the 2010 election.

### Area 5

George T. "Pat" Mann, Jr. was first elected to the Board in 1992 and has been re-elected since that time including the 2008 Election.



### Area 6

Thomas B. Hart was first elected to the Board in 1998 and has been re-elected since that time including the 2010 election.



### Area 7

Bruce Scott was first elected in 2004 and was re-elected in 2008.



# Executive Director



## A Message from the Executive Director

The Lee County Mosquito Control District was established in 1958 by an act of the Florida Legislature as an independent district and has been providing uninterrupted mosquito control services to the citizens of Lee County for over fifty years. During those years the District has remained at the forefront of mosquito control, helping to develop control technologies that are effective and considerate of the natural Florida environment. Lee County's many acres of salt marsh and other wetlands are some of the most prolific mosquito breeding habitats in Florida. In order to provide a comfortable outdoor environment for Lee County citizens and reduce the threat of diseases that can be transmitted by mosquitoes, the District continually monitors these habitats and endeavors to control mosquitoes in the aquatic immature stages before they become flying and biting adult mosquitoes. Additionally, we monitor adult mosquito activity throughout Lee County each night from May through October and initiate adult-control operations when surveillance thresholds are met or a mosquito borne disease poses a threat to Lee County citizens.

Florida's development history is directly linked to success in controlling mosquitoes and abating the diseases they carry. Successfully controlling mosquitoes, while being sensitive to Florida's unique natural habitats and wildlife, is a demanding and important challenge. Today we work within a complex regulatory framework of federal, state and local regulations which govern to a great extent how, when and where we may conduct mosquito control operations. All of our employees are trained and certified in Public Health Pest Control and are committed to providing sound and effective mosquito control to the citizens of Lee County.

This year we have been busy with continued improvement of our infrastructure to meet future needs, streamlining and upgrading our aircraft fleet, improving application techniques for cost savings, efficacy and efficiency, educating the public and government officials on the challenges of mosquito control, and ensuring we maintain the ability to control mosquitoes in the face of significant regulatory challenges. We have also dealt with reduced revenues from the economic downturn and are continuing to seek ways to be more efficient without sacrificing our ability to provide effective service to the citizens of Lee County. We will continue to meet the challenges faced by mosquito control head on as we go forward into the future.

T. Wayne Gale,  
Executive Director





## Mission and Objectives

**Mission Statement:** Lee County Mosquito Control District is committed to improving the quality of life, facilitating outdoor activities and protecting the public health in our community by implementing environmentally sound practices that control mosquitoes throughout Lee County.



### District Headquarters

The objective of Lee County Mosquito Control District is to serve the residents and visitors of Lee County by controlling the mosquito populations through an integrated pest management approach consistent with applicable laws and justified by tenets of public health, vector control, environmental safety and fiscal responsibility. The District works to provide leadership, research, technical information, and education on mosquitoes and their control.



The District operates under Chapter 388 of the Florida Statutes. It is regulated by the Florida Department of Agriculture and Consumer Services and coordinates operations to comply with regulations established by the U.S. Environmental Protection Agency, Department of Transportation, and Federal Aviation Administration.



## District Responsibilities



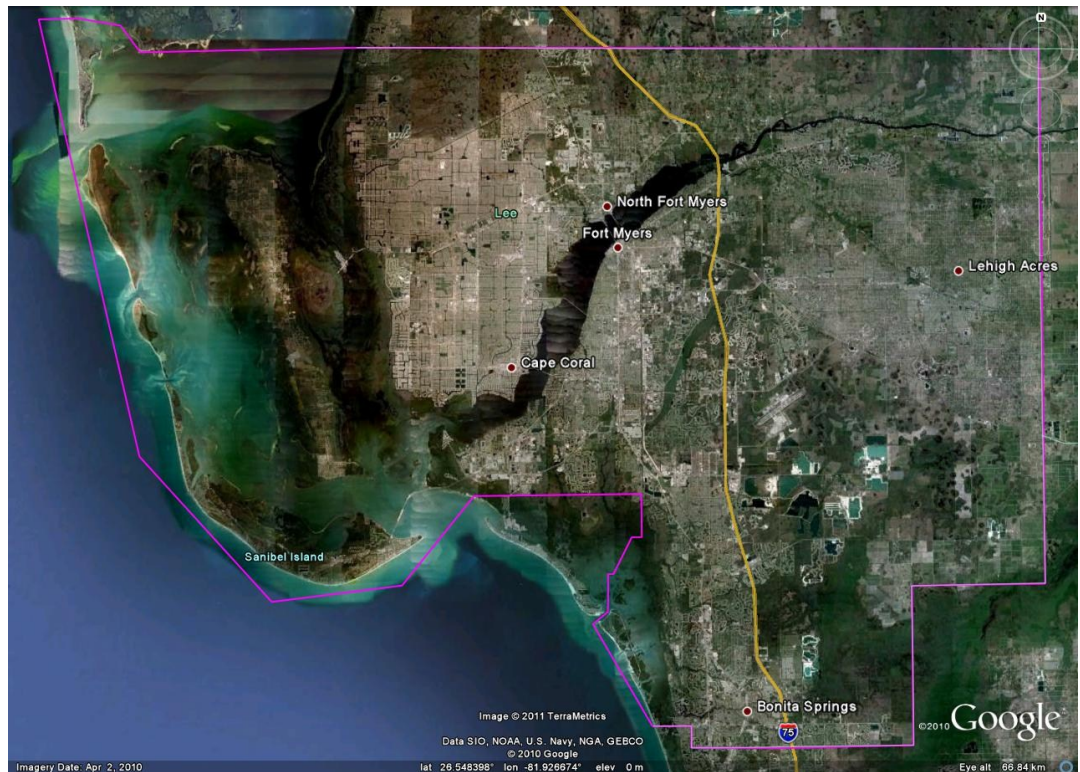
Over 56000 acres of salt marsh habitat with many developments within close proximity to be breeding sites.

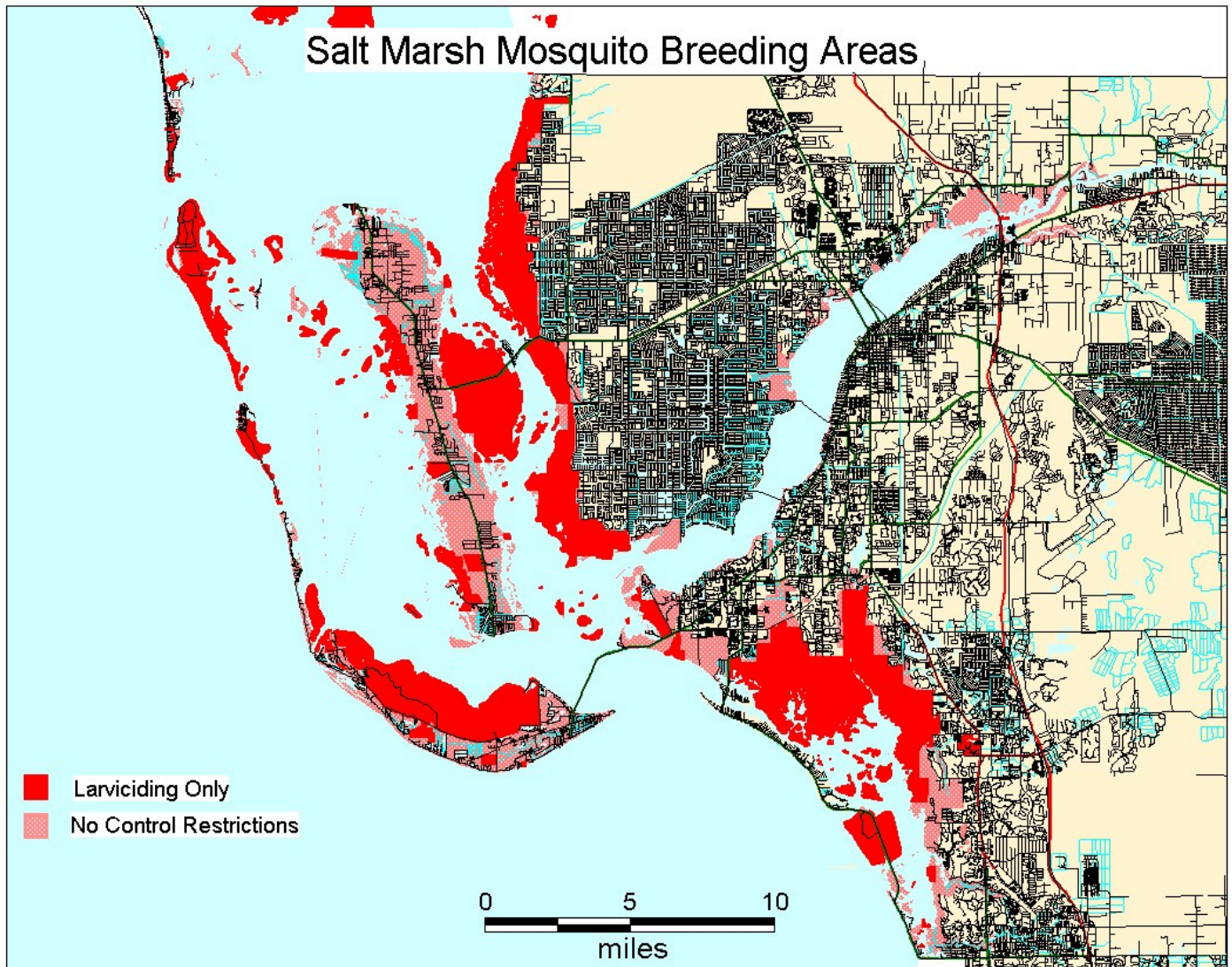


The Lee County Mosquito Control District is responsible for mosquito control in ninety-eight percent of Lee County or approximately 1000 square miles which includes over 56,000 acres of salt marsh mosquito breeding habitat. The District covers over 590 miles of shoreline and 100 plus miles of barrier islands. After high tides or rain these coastal habitats produce large numbers of aggressive salt marsh mosquitoes that can fly up to 50 miles and literally cover the County. Most of these coastal habitats are not accessible by vehicle and inspectors must use helicopters and boats to gain access to these areas for inspection and control of immature mosquito stages. In addition, there are numerous other mosquito species in Lee County that breed in both permanent and temporary fresh water habitats, including some that can transmit mosquito borne diseases such as Saint Louis Encephalitis, Eastern Equine Encephalitis, West Nile Virus, Dengue, Malaria or dog heartworm.

### Map of District

The map indicates the area Lee County Mosquito Control District provides mosquito control service. The area outside the pink boundary line is serviced by Ft. Myers Beach Mosquito Control District.





Lee County has over 56,000 acres of potential salt marsh breeding habitats, most of which can only be accessed by helicopter. All of the areas in the above map highlighted in red on the map are breeding areas, with the dark red color indicating those areas that cannot be sprayed for adult mosquitoes.

These lands are state or federal conservation areas that have mandated mosquito control restrictions. No other county in Florida has the extensive marsh along the coast, combined with the large outer island marshes of Pine Island, Little Pine Island, Sanibel, Captiva, Cayo Costa and Boca Grande as well as inland marshes of Estero Bay and even up the Caloosahatchee River. All this breeding ground is adjacent to or surrounding concentrated urban development. Without an all-out effort to do larviciding in these areas, huge numbers of mosquitoes would be allowed to emerge and move over the entire county after each high tide or rain event. The only way to cover the acreage in the short 5-day window of opportunity provided by the floodwater mosquito life cycle is with helicopters which are used to find and treat mosquitoes breeding in these areas. This is why Lee County Mosquito Control District sprays about one third of all aerial larvicide acreage in the entire state of Florida.





## Comparison of Treatment Demands

### Why is Lee County Mosquito Control District such a large program?

There are 61 Mosquito Control Programs in the State of Florida recognized and approved by the Florida Department of Agriculture. Of those 61 programs, only 20 programs have aerial larviciding programs found along the coast of Florida. Lee County Mosquito Control District treats 1/3 of the total aerial larviciding total acreage treated in State wide.

#### Aerial Larviciding Average # of acres for 2005-2009

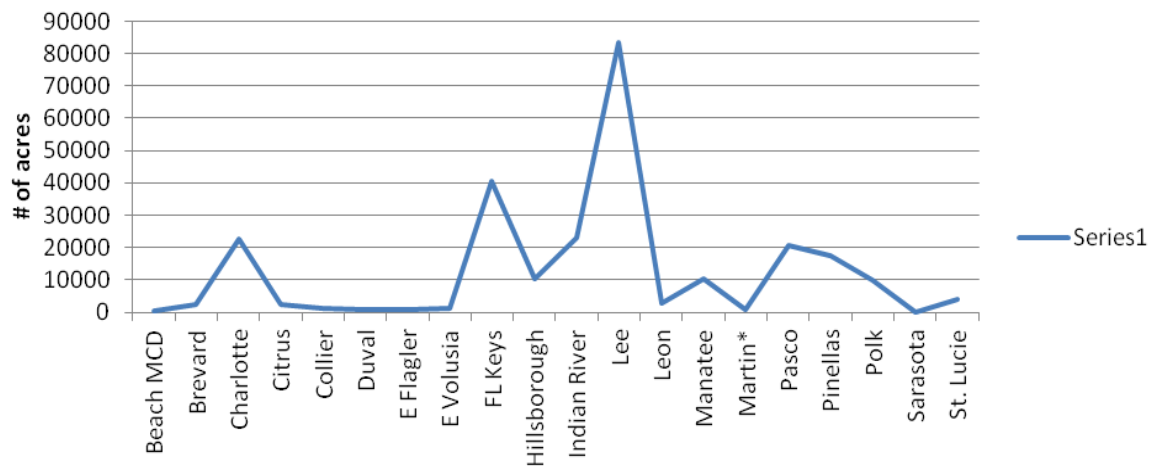
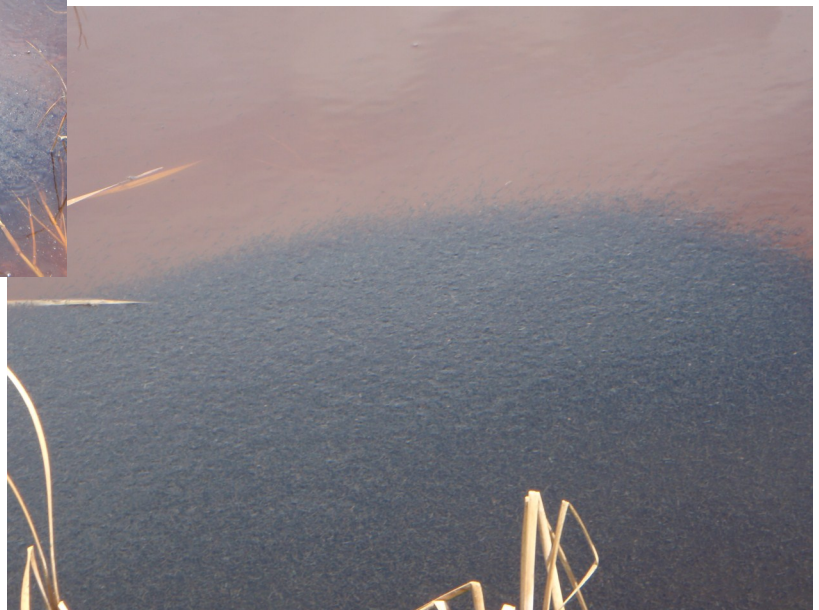


Chart information based on AES/FDACS reports.



Aggregates of mosquito larvae demonstrate the highly productive potential coastal marshes in Lee County.

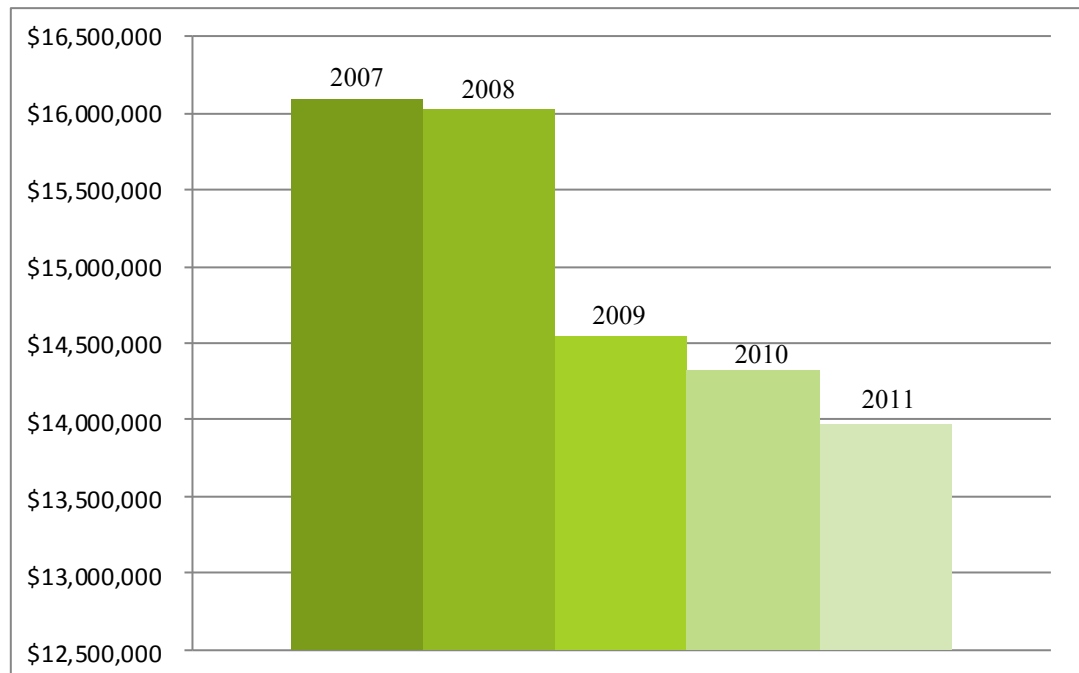


## Property Taxes

Property taxes are the primary source of revenue for Lee County Mosquito Control District. General revenues come from property taxes, interest income and miscellaneous. Property taxes are levied each year, and are payable beginning November 1. The Lee County Tax Collector's office bills and collects property taxes on behalf of the Lee County Mosquito Control District. The tax rate levied upon the taxable property within the District boundaries for mosquito control for the fiscal year that ended September 30, 2011 was \$.2388 per \$1000 of assessed taxable property value. For example, a taxable property with an assessed value of \$235,000 would pay \$56.12 in taxes for mosquito control services or approximately 15 cents per day. This cost is also approximately the same as having a yard treated once for insect control.

Mosquito control's area of responsibility does not change with fluctuations in property values or on the population of Lee County. The cost of doing mosquito control is not going down but up with fuel and pesticide costs continuing to rise. The District strives to continue to provide county-wide mosquito control services and continues to reduce costs as well.

### Tax Revenue

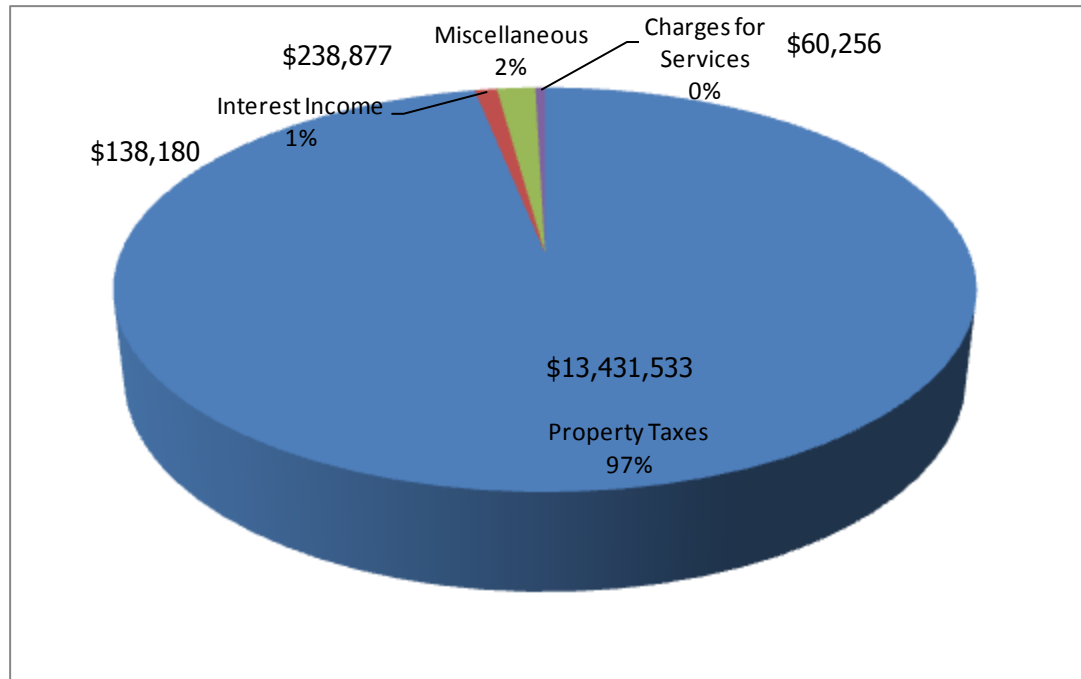


Tax revenue for the Lee County Mosquito Control District has been declining. In 2007, property taxes provided \$16,094,570. By 2011, property taxes yielded \$13,431,533 challenging the District to continue to provide service with a 13% reduction in revenues.

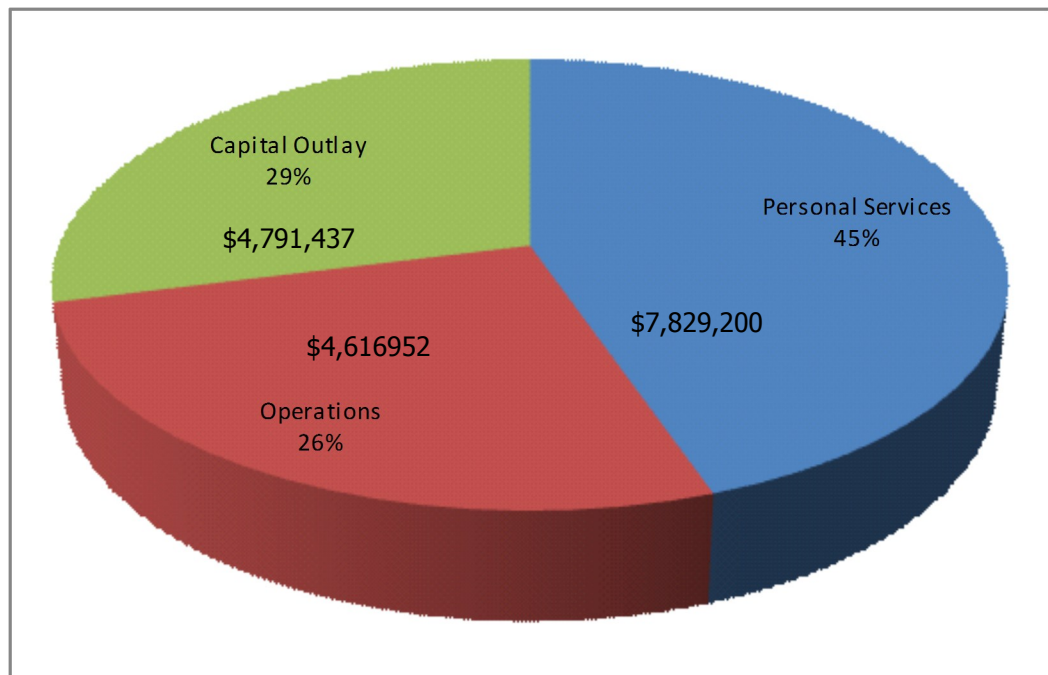




**2010-11 Receipts Total \$13,868,846**



**2010-11 Expenditures Total \$17,237,589**

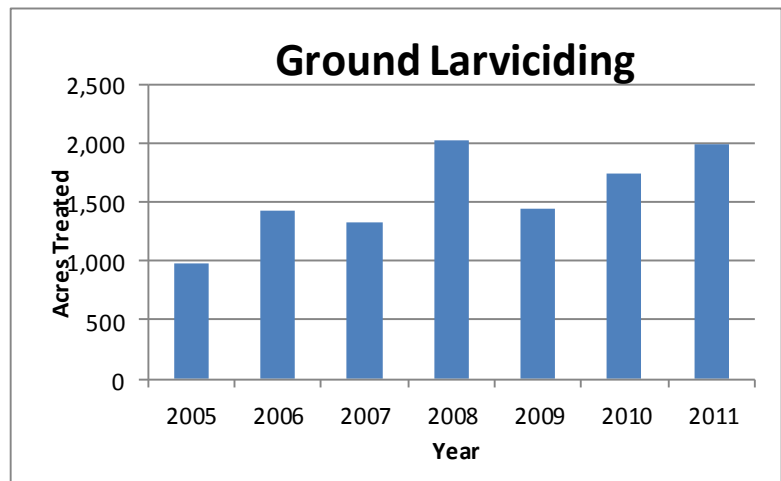


## Ground Larvicide

The Ground Larviciding Program focuses on inspecting the roadside ditches, fields and retention ponds for the presence of mosquito larvae using a standard pint-sized dipper. When mosquito larvae are found, appropriate control measures are taken to insure that the larvae or pupae do not become adults. Each of the 5 inspectors has an assigned geographic area of the county for which they are responsible to check on a regular basis.

### Total Acres Treated by Ground Larvicide by Month

Month	2004	2005	2006	2007	2008	2009	2010	2011
Jan	7	5	3	3	1	1	5	7
Feb	0	3	4	2	29	0	10	16
Mar	0	45	0	3	36	1	50	20
Apr	4	67	1	8	59	7	178	30
May	29	42	6	27	34	67	56	36
Jun	111	165	170	73	198	193	152	116
Jul	209	249	464	329	540	257	360	427
Aug	187	150	310	443	471	339	518	530
Sep	63	113	452	332	494	399	378	414
Oct	2	97	6	115	161	76	26	313
Nov	11	28	8	1	3	5	17	78
Dec	0	12	0	1	12	103	0	4
<b>Y-T-D Total</b>	<b>623</b>	<b>976</b>	<b>1424</b>	<b>1337</b>	<b>2038</b>	<b>1448</b>	<b>1750</b>	<b>1991</b>





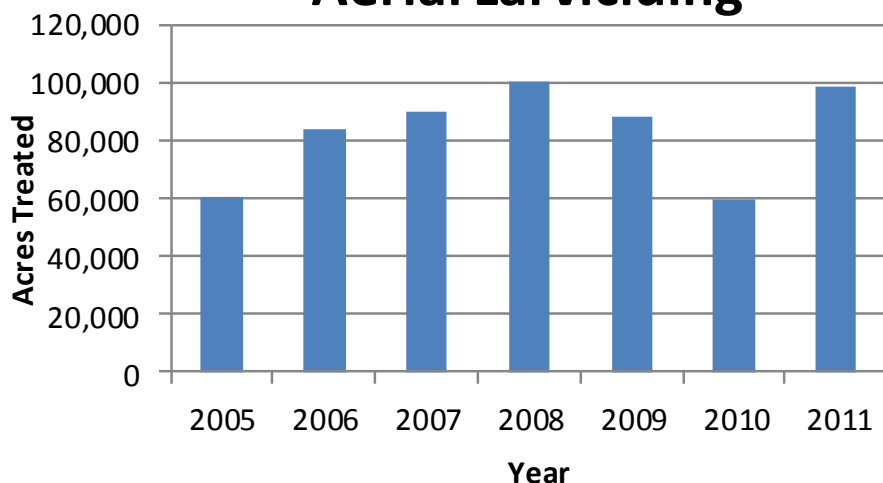
## Aerial Larvicide

The Aerial Larviciding Program focuses on inspecting the coastal areas of the County that flood from either rainfall or tide and are not accessible by ground vehicles. Aerial Inspectors use helicopters to search these areas for the presence of mosquito larvae and treat them appropriately. Each the District's five aerial inspectors are assigned specific geographical areas which allows them to become familiar with the mosquito breeding sites and the environment's response to rainfall and tide. Each inspector has an assistant which loads the helicopter with larvicide and fuel. They will also assist by inspecting areas accessible by vehicle.

### Total Acres Treated by Aerial Larvicide by Month

Month	2005	2006	2007	2008	2009	2010	2011
January	450	0	64	469	0	0	85
February	2,526	557	698	5,880	0	667	1,447
March	3,752	0	120	1,069	388	1,136	2,931
April	7,106	0	666	5,513	900	4,938	1,668
May	5,658	179	4,647	4,732	7,012	835	5,712
June	11,276	18,404	20,281	19,488	20,667	8,566	12,952
July	11,795	35,554	26,884	33,287	8,519	18,470	32,730
August	6,872	14,982	20,983	11,592	28,612	17,327	23,039
September	3,615	13,200	11,813	13,458	18,662	6,464	10,880
October	6,639	456	2,800	3,959	376	697	5,068
November	132	208	58	0	55	387	1,648
December	752	0	566	846	2,781	0	46
<b>Y-T-D Totals</b>	<b>60,573</b>	<b>83,540</b>	<b>89,580</b>	<b>100,293</b>	<b>87,972</b>	<b>59,487</b>	<b>98,206</b>

### Aerial Larviciding



Inspecting for larvae



Bell 206 larviciding coastal marsh



## Aerial Larvicide



Isolated salt marsh breeding site on Sanibel.



Close up view of mosquito aggregates found in above site.



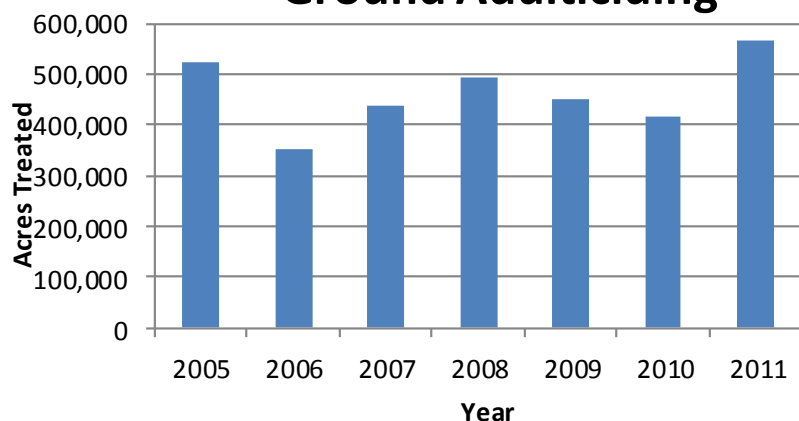
## Ground Adulicide

A small area of infestation can be treated with Ground Adulciding Trucks. These trucks use ULV (Ultra-Low-Volume) technology. The equipment atomizes or creates many tiny droplets which drift through the air and contact the mosquito in flight. The Ground Adulciding Trucks achieve excellent results in areas with a good network of roads. These trucks usually begin just after sunset and treat an average of 2,000 acres per night. Lee County Mosquito Control fleet consists of 12 Ground Adulciding Trucks with additional units ready to be put into service on the beds of any truck in response to an emergency.

### Total Acres Treated by

Month	2004	2005	2006	2007	2008	2009	2010	2011
Jan	8228	14411	4404	11560	5155	0	973	0
Feb	16034	6105	77	0	3696	0	0	11010
Mar	47117	38963	1322	1167	17801	117	27107	6272
Apr	37629	9696	3035	5262	34961	4287	51420	44440
May	85656	49211	778	32472	46362	34232	30292	28161
Jun	98318	106212	21445	78709	79490	57689	43245	64207
Jul	135183	75814	147265	88284	153682	92689	78877	119423
Aug	211939	34753	78540	92232	80443	86887	60381	104895
Sep	107992	20428	76376	81565	47836	104692	52772	78870
Oct	34902	62576	14518	34136	21984	48969	45136	63540
Nov	33099	88009	2362	7140	2813	7198	24420	35022
Dec	20038	18030	0	3891	0	12079	0	12267
<b>Y-T-D Total</b>	<b>836135</b>	<b>524208</b>	<b>350122</b>	<b>436418</b>	<b>494223</b>	<b>448839</b>	<b>414623</b>	<b>568107</b>

### Ground Adulciding



Trucks conduct ground adulticide treatments between the hours of sundown and 3 AM.



## Aerial Adulticide

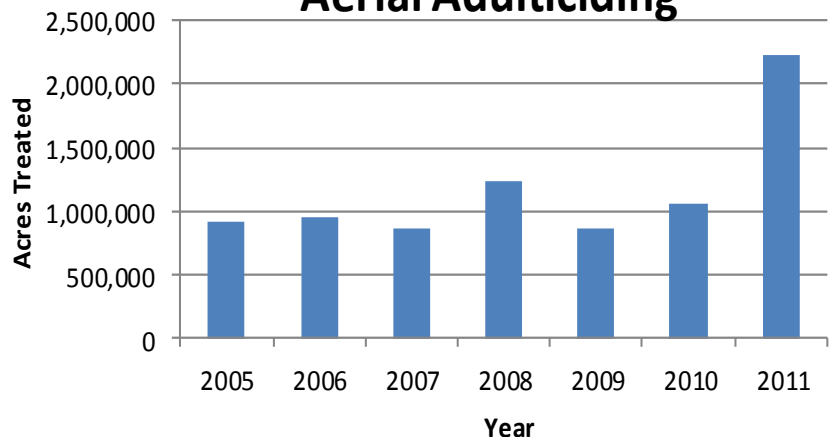


Photo courtesy of Peter Connolly

For the last eight years, the average acres treated by aerial adulticide was 1,154,601.

In 2011, the District nearly doubled the average acreage treated by treating 2,228,791 acres by aerial adulticide methods.

### Aerial Adulticiding



Aerial adulticide treatments utilizing the DC-3 are conducted between 9 PM and 2 AM. This is when the adult mosquitoes are most active.

### Total Acres Treated by Aerial Adulticiding by Month

Month	2004	2005	2006	2007	2008	2009	2010	2011
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	307	0	0	0	0	0	14784
Apr	13167	0	0	0	35553	0	116440	36860
May	17303	2072	0	0	71591	12698	0	134648
Jun	49879	357753	0	92363	138707	7336	11481	173968
Jul	282740	203982	415238	118692	531803	237874	239074	721915
Aug	640472	57450	150010	139231	360226	320934	261104	422007
Sep	124002	0	393937	270246	91764	247388	315731	294449
Oct	0	57354	0	239581	0	33802	87826	315782
Nov	0	200893	0	0	0	0	25123	114378
Dec	0	34896	0	0	0	0	0	0
<b>Y-T-D Total</b>	<b>1127563</b>	<b>914707</b>	<b>959185</b>	<b>860113</b>	<b>1229644</b>	<b>860032</b>	<b>1056779</b>	<b>2228791</b>



## Employee Training

Every employee of the District, from the receptionist to the Director, must obtain and maintain a license in General Standards and Public Health Pest Control through the State of Florida, Department of Agriculture and Consumer Services (FDACS). This insures every District employee has a basic knowledge of pesticides and the biology of mosquitoes. The Director and pilots have additional licensing requirements. To maintain a Public Health Pest Control license each employee must renew their license by earning 16 continuing educational units through classes approved by FDACS within a 4-year period. There are additional mandated training requirements outside of the licensing for pesticide application, such as Right-to-Know and Hazardous Communication. The District strives to have knowledgeable employees that utilize the best management practices for the mosquito control industry.



Hazardous  
Materials Spill  
Training

Jan. 11-13	Aerial Fly-In/Helicopter Egress
Jan 24-28	Dodd Plenary Classes
Feb. 4	Hazardous Material Spill /OSHA level II
Feb. 14	Right-to Know Hazardous Communication
Feb. 21	First Aid, CPR and AED
March 11	Clarke Workshop
March 14	First Aid, CPR, AED
April 29	Right-to Know Hazardous Communication
May 4	Right-to Know Hazardous Communication
May 12	Right-to Know Hazardous Communication
Aug. 2-4	Incident Commander Training/OSHA level V
Oct. 6	Right-to Know Hazardous Communication
Oct. 21	Right-to Know Hazardous Communication





## Employee Training



The Lee County Mosquito Control District pilots maintain comprehensive training to ensure safety and skills. During 2011, two pilots attended SimCom Training for Multi Engine Fixed Wing Training using a simulator. Six pilots attended the Bell Training Academy for UH1H emergency training. All full-time pilots conducted re-current flight training in the DC3TP (DC-3 turbo prop). Part-time pilots were trained in flight in the DC3TP for second in command responsibilities and procedures. Each helicopter pilot received in-flight emergency training in the Bell 206 Jet Ranger. Pilots conduct flight spray training in the Bell 407 to include areas required by 14 CFR Part 137.19(e), FAA training. Joint Inspector and pilot training is conducted on creating spray missions, from the formulation of the mission to the loading and execution of the mission, to posting the completed mission or data on the server. Pilot's train on the use of Guida and Google Earth review and re-currency. Guida is a precision navigation system designed for guidance in aerial application. Pilots also train with Night Vision goggles in helicopters and DC3TP along with basic night re-currency training.



Helicopter  
Egress  
Training at  
Florida  
Gulf Coast  
University Pool  
In January

