



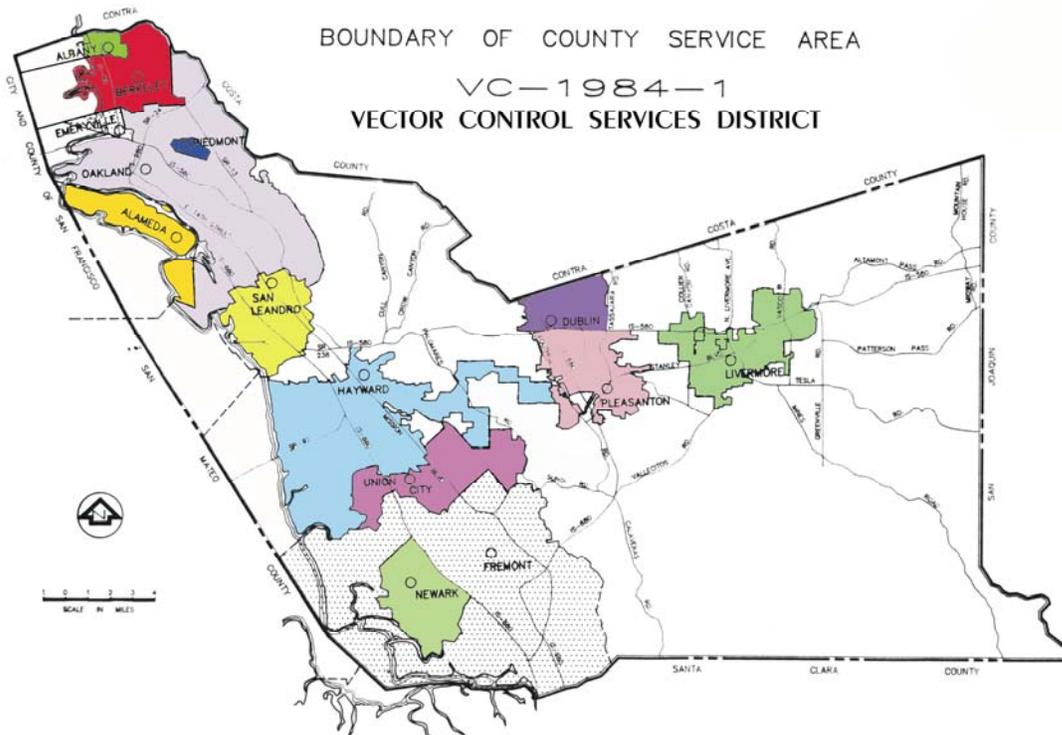
# Alameda County Vector Control Services District



Our Mission:  
Prevention of Vector Borne Disease in Alameda County

## ALAMEDA COUNTY VECTOR CONTROL SERVICES DISTRICT COUNTY SERVICE AREA VC 1984-1

### Annual Report FY 2006-2007



All Areas Within the Alameda County Boundaries are Served by ACVCSD, Except the Cities of Fremont and Emeryville

**ALAMEDA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT  
1131 HARBOR BAY PARKWAY, SUITE 166  
ALAMEDA, CA 94502**

# MISSION

The mission of the Vector Control Services District is to prevent human diseases, injury, and discomfort to the residents of the District by controlling insects, rodents and other vectors and eliminating causal environmental conditions through education, legal enforcement, and direct pesticide application.

**We use state of the art, IPM practices.**

*Integrated pest management (IPM) is an approach which first assesses the pest situation, evaluates the merits of pest management options and then implements a system of complementary management actions within a defined area. The goal of IPM is to mitigate pest damage while protecting human health, the environment and economic viability. Integrated Pest Management is a dynamic system that is adaptable to diverse management approaches. Pest management decisions are made by the individual, community, business entity or government agency but are influenced by the diversity of public and private values.*

## **DISTRICT SERVICES**

### **Request for Service Investigations**

- We conduct investigations pertaining to service requests relating to disease vectors, assess the extent of the problem, and take the appropriate action.
- We investigate reported public health and nuisance problems related to cockroaches, flies, fleas, lice, yellow jackets, as well as, ticks, mites, and spiders, and render the appropriate service.
- Provide insect, tick and spider identifications and recommend least-toxic control methods.
- Conduct yellow jacket and bee swarm control in public areas or by contract with other agencies.

### **Wildlife Management, Domestic Animals, and Rabies Control**

- The District oversees the administration of quarantine measures relating to animal bites, and suspect animal rabies testing.
- Our inspectors conduct investigations of nuisances related to bats, skunks, opossums, raccoons, dogs, cats, rabbits, pigeons, chickens, turkeys and fowl.
- When necessary our wildlife specialist will trap biting, or nuisance animals when preventative alternatives are not possible, or will be ineffective.
- We work cooperatively with local animal control agencies, and compile statistics for an annual rabies report for the State Health Department.

### **Rodent Control**

- Our inspectors provide recommendations for rodent proofing and suppression of rats and mice in homes and businesses.
- The District will conduct rodent suppression during disease outbreaks or emergencies.
- We conduct surveys of rat populations to assess species abundance, distribution, and disease carrying potentials.
- Our specialists conduct District-wide inspection, and baiting of sanitary sewers and waterfronts for rats.
- On-going inspections and testing of sewer laterals and mains to detect breaks, which may provide entry portals for sewer rats to adjacent neighborhoods.

## **Solid Waste Problems**

- We investigate complaints regarding solid waste handling and storage problems involving refuse, human or animal waste, and odors at residential properties and businesses.

## **Vectors, and Vector-Borne Disease Surveillance and Control**

- Our staff investigates reports of animal or human illness such as Lyme disease, psittacosis, scabies, head lice, reptilian salmonella, ehrlichiosis, and rabies to determine cause, and recommend preventative, or corrective measures.
- We assist the public in the submission of ticks to the public health laboratory for testing.
- Our specialists collect rat fleas to determine the potential risk of plague transmission.
- We conduct surveys of insects and arachnids of public health importance and maintain a reference collection.

## **Public Education and Information**

- We provide vector control related presentations to interested groups, and participate at public events.
- We provide and disseminate educational information on vectors and vector borne diseases for individuals and groups.
- We maintain an informative and up-to-date web page.
- Staff public displays at health fairs, special events, and the county fair.
- Posting of the annual mussel harvesting quarantine notices on the Alameda County bay shoreline.
- Provide timely press releases to inform the public of emerging vector-borne diseases, personal protection, and disease prevention methods.

## **Legal Enforcement**

- Enforcement of state laws, regulations, and local ordinances when necessary to protect the public from vectors and related problems.

## **INTRODUCTION**

The Alameda County Annual Report for County Service Area (CSA) VC 1984-1 for Vector Control is presented to the Alameda County Board of Supervisors in compliance with Section 25210.77a of the Government Code; County Service Area Law, and Chapters 5.24 and 6.32 et. Seq. of the Alameda County General Ordinance. The report, which includes the recommended benefit assessment for the fiscal year 2006-07, is submitted for review and public hearing.

This report gives the history of how and why the County Service Area (CSA) known as the Alameda County Vector Control Services District was formed, explains how the assessments are calculated, and includes tables of assessments since the CSA was formed in 1984 as well as the proposed 2006-07 assessments.

This report is also available for review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502. In addition, current reports will be posted on our website at: (<http://www.acvcسد.org>).

## **BACKGROUND & HISTORY**

The County Service Area (CSA) 1984-1 for Vector Control was established in June 1984 in order to meet the public needs by providing a comprehensive vector control program. Environmental Health Services was experiencing dwindling financial resources causing severe cutbacks in vector control in Alameda County. In response, the Board of Supervisors created the County Service Area following confirming election for Measure A, in which over 70% of the voters approved formation of the CSA. The CSA now includes 12 of the 14 cities of Alameda County and the unincorporated county areas. The CSA excludes the cities of Emeryville and Fremont, which opted to seek alternative sources for administering vector programs. The City of Dublin initially chose not to be included in the CSA, but was annexed by the Board of Supervisors in 1992 at the request of the City Council of Dublin, which voted to join the District.

## **CITY OF OAKLAND**

In 1987, the City of Oakland recognized that it had a severe rat problem, originating primarily from the sanitary sewers, which exceeded the fiscal capabilities of the district to mitigate the problem. The City of Oakland approved a supplemental assessment, which was first levied in fiscal year 1988-89, and provided for two additional vector control officers. Due to cost of living, over the years the available funding has become insufficient to cover the pay for the two employees in this project .

## **CSA ALAMEDA COUNTY VECTOR CONTROL** **2006 ANNUAL SUMMARY**

### **Introduction**

The County Service Area (CSA) VC 1984-1 is funded through benefit assessment charged to each property parcel. In 1997, the voters approved Proposition 218, which requires that all parcel owners receive a mailed ballot regarding any proposed change in an assessment, prior to imposing an increase. Since then, the District has not been able to increase revenues, the fees have remained the same while costs, and responsibilities have increased drastically. For the past five years, the District has operated at a deficit and experienced staffing shortages. Currently, the District has seven vacancies including two Vector Control Officers, and two Senior Vector Control Officers. The funding deficit required the District to contract with a consulting company to conduct a feasibility survey, and the outcome will determine the support for a benefit assessment increase ballot measure in 2007. In addition, surveys will be conducted in Emeryville and Fremont to determine the feasibility of their annexation to the District in 2008.

### **Urban Rodent Surveillance**

The urban rodent surveillance program focuses on monitoring and controlling rats (Norway and roof rats) and mice in residential, commercial, and business properties. Program objectives include giving recommendations on environmental and sanitary modifications to exclude, and prevent rodent settlement, and when necessary, suppressing rodent populations to reduce property damage, food contamination, and disease transmission. In 2006, the District received 1,810 requests for service from the public for domestic rodents, representing 33% of all requests. Additionally, staff performed 14,834 field services related to domestic rodents including dye testing of sanitary sewers, field surveys; follow up evaluations, and enforcement actions.

When evidence indicates rats are surfacing near sewer laterals, field staff conducts inspections to locate broken sewer lines, and notify the homeowners, or the Public Works Department to insure repairs are made. In 2005, due to privacy disclosure issues with home owners, and potential worker safety, the District temporarily discontinued using smoke emitting flares to locate sewer line breaks, and document locations where rats can exit the sewers and infest neighborhoods. The District has worked with the County Risk Management since 2005, and developed policy and procedures for sewer smoke testing in 2006. In 2006, staff found 28 broken sewer laterals using smoke test technology, and performed dye tests to verify the breaks. Our District advises Oakland Public Works supervisors and other municipalities to facilitate repair of broken sewer lines and laterals.

For countywide plague surveillance, the staff trapped 10 roof rats from various locations in Alameda County and submitted blood samples for plague testing. All tested negative (Table 3). Because some ectoparasitic species found on rodents are capable of vectoring disease organisms, 66 commensal rodents from urban, and peridomestic areas were trapped and examined for ectoparasites (fleas and mites) (Table 1). Moreover, we have summarized the data about flea assemblages on commensal and wild rodents between 1987-2005, and assessed flea-borne diseases in urban and peridomestic environments. The data and the disease implications were presented in a manuscript and have been submitted for review and publication.

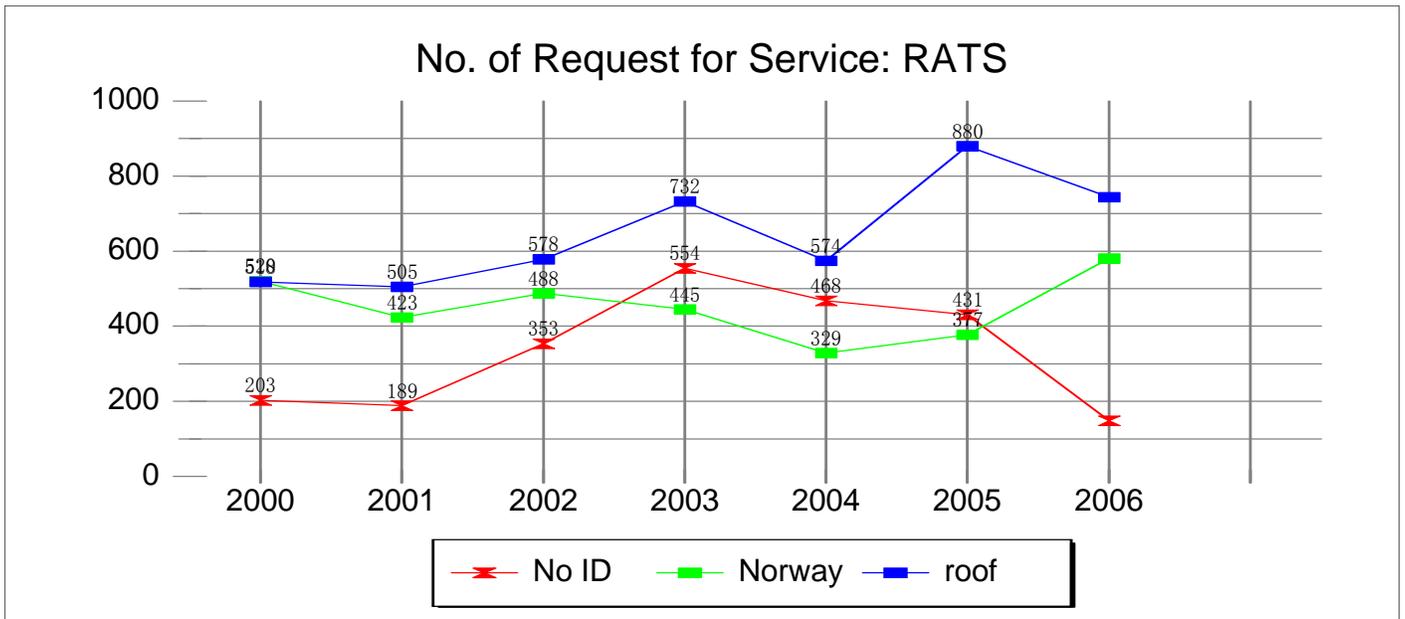
Due to aging, structural deterioration, and infrequent maintenance of sanitary sewers, Oakland has had a long history of Norway rats invading homes and neighborhoods. Our staff investigated 206 Norway rat service requests in 2006. Furthermore, the staff responded to an additional 772 rodent complaints, of which an estimated 50% may have been partially caused by Norway rats. In 1987, the property owners in Oakland voted an additional \$1.28 over the standard rate of \$5.92 per residence for sewer inspection and baiting, to control the rodent populations in the sewers. Our district staff conducts weekly inspections of designated census tracts. They pry open sewer covers, look for signs of rodent activities (live rats or their droppings), and apply a suspended anti-coagulant bait block when necessary to control the rodents. A total of 6,824 sewer inspections and 1,231 treatments were made in Alameda, Albany, Livermore, Piedmont, Oakland, and San Leandro in 2006. We also intensified our effort to evaluate neighborhoods with rat activity in the sewers based on clusters of complaints. Specifically, we targeted neighborhoods where residents were seeing rats roaming on surface streets. In 2006, staff worked closely with neighborhood associations in areas of Piedmont Avenue, San Pablo Avenue, E Street, and 94<sup>th</sup> Ave. and the Oakland Coliseum. They arranged community meetings with local residents and the Oakland City Council, and reached an agreement to improve environmental conditions in the affected neighborhoods.

2006 Commensal rodents - ectoparasite		<u>Flea species</u>	<i>Norway rats</i>	<i>Roof rats</i>
# of Norway rats	27	<i>Nosopsyllus fasciatus</i>	1	4
# w/ fleas	5	<i>Xenopsylla cheopis</i>	0	0
# of fleas	17	<i>Leptopsyllus segnis</i>	3	0
# of Roof rats	39	<i>Holopsylla anomalus</i>	1	1
# w/ fleas	8			
# of fleas	12	<i>Orchopeas. sexdentatus*</i>		2
<b>FLEA INDEX</b>		<i>Opisodasys keeni*</i>		2
Norway rats	0.63	<i>Malaraeus telchinis*</i>		1
Roof Rats	0.31			
<b>Total</b>	<b>0.29</b>	<b>Total</b>	<b>5</b>	<b>10</b>

TABLE 1: Fleas collected from commensal rodents \* Rodent trapped from non-urban areas

*Roof rats* have become established throughout the suburban and semi urban areas of Alameda County. Vector control officers responded to 744 service requests for roof rats from homeowners, business, and municipalities. Although our field surveys have found low flea numbers on roof rats-however, because this species is highly adaptable, and Alameda County has many diverse ecological habitats, a relatively rich flea fauna could conceivably be found from rodents inhabiting these areas. The Oriental rat flea, *Xenopsylla cheopis* is of primary concern because it is the vector for bubonic plague in urban cities. The District has set a high priority to ensure that these rodents do not enter homes, and expose occupants and their pets to the rodent fleas. Staff responding to a rodent service request will conduct an extensive survey of the exterior and interior premises looking for conditions conducive to rodents, and advise the homeowner on structural modifications to prevent rodent entry to their home. They will also hand out brochures (or fact sheets), and when necessary, enforce Environmental Health Laws to seek owner compliance to mitigate the problem. If evidence is found suggesting an infestation over a larger area than a single-family residence, neighborhood surveys are conducted.

During our rodent surveillance in the past few years, we have trapped several rats that appeared morphologically similar to the roof rat, but we were unable to make a positive identification. Two specimens were sent to University of California, Berkeley (UC) for species confirmation. In turn, they shipped the specimens to Australia for additional DNA analysis. Finally, based on biochemical and DNA analysis, they were determined to be the Asian house rat, *Rattus tanezumi*. This is the first detection of this species in North America. While this species was once considered a roof rat subspecies, but has now been elevated to its species status. Presently, its biology, range, and pest status are unknown in the County. Twenty-eight *Rattus* spp. were collected from eight urban, suburban, peridomestic (transition zone between native habitat and residential area), and rural locations and submitted to the Museum of Vertebrate Zoology, UC for identification. The results are pending.



Recent studies conducted by Dr. Bo Niklasson at the University of Uppsala and at Apodemus in Sweden found a connection between a novel *Picornia* virus (Ljungan virus), found in Bank voles, as a possible causal agent for insulin-dependent-diabetes mellitus, myocarditis, and *Guillain-Barre* syndrome in humans. This virus was also isolated from laboratory mice and rats as well. In laboratory experiments, previously healthy mice infected with the virus later developed diabetes. Our District submitted organ tissues (heart, brain, and pancreas) and blood samples from 13 commensal rodents (12 *R. norvegicus*, 1 *R. rattus*) collected from 10 sites in Oakland to University California, Berkeley (UCB) for testing. Seven samples tested had high viral titers (Table 3). The human disease implications of these findings may be significant, and the District plans to collaborate with UCB in testing commensal rodents for Ljungan virus in 2007.

### Sylvatic Rodent Surveillance

Sylvatic rodents, such as deer mice, wood rats, squirrels, and meadow voles are commonly found in rural and semi-rural areas of Alameda County. We collected fleas from three sylvatic rodents and one fox that are potential reservoir hosts for Plague (Table 2). Many of these animals serve as reservoir hosts to zoonotic diseases such as Plague, Hantavirus pulmonary syndrome, Ehrlichiosis, Lyme disease, and Babesiosis. A reservoir host is an animal that can; support parasite

development, remains infected for a long time, and serves as a source of vector infection. The reservoir hosts are not affected by the pathogens. Plague is a flea-borne disease caused by infection with the bacterium, *Yersinia pestis*. Plague positive rodents have been detected in Alameda County on occasions in the past. The District maintains on going plague surveillance to monitor the circulation of this pathogen among sylvatic rodents. In 2006, 25 sylvatic rodents (deer mice, wood rats) collected from rural locations were tested for the plague pathogen. All tested negative. Additionally, 29 carnivore blood samples tested negative for plague infection (Table 3). The United State Department of Agriculture (USDA), Wildlife Services submitted 27 of the 29 carnivore blood samples.

2006	N=	# w/ fleas	# of fleas	Flea species	Flea Index
<i>R. megalotis</i>	4	0	0		
<i>Neotoma fuscipes</i> (wood rat)	2	2	5	<i>O. sexdentatus, Atyphloceras longipalpus</i>	0.4
<i>Peromyscus maniculatus</i> (deer mice)	23	8	13	<i>O. keeni, M. telchinis, O. sexdentatus</i>	0.57
<i>Spermophilus beecheyi</i> (CA ground squirrel)	4	3	46	<i>Oropsylla montanus, H. anomalus</i>	11.25
Grey fox	1	1	8	<i>C. felis, Pulex simulans</i>	8

TABLE 2: Fleas collected from sylvatic rodents and one fox

Hantavirus pulmonary syndrome was first recognized in 1993 when an outbreak of acute illness of unknown etiology occurred among residents of the Four Corners area in the southwestern United States. Since then, the disease agent was identified as a previously unrecognized member of the Hantavirus genus: *Sin Nombre* virus (SNV). Rodents, particularly deer mice were identified as the principal reservoir of the virus, which they shed in urine and feces. Occasionally, deer mice will enter buildings and potentially expose the occupants to the virus. Past surveillance, activities at various localities indicated 6-18% of the deer mice population was infected with the SNV antibody. The District conducts rodent surveys, usually in collaboration with the CA Department of Health Services (CDHS), in an effort to minimize the transmission of this disease. Rodent surveys also provide opportunities to inform the public on the potential exposures and risks to deer mice and preventive measures to avoid contacts with these animals. We conducted a risk assessment for a concerned citizen in Oakland. Thirteen traps were placed. A single Norway rat, *R. norvegicus* was captured. Additionally traps were placed in five other locations, which included agricultural and peridomestic sites. Twenty-three deer mice, (*Peromyscus maniculatus*) were collected from four of the five locations. All 23 samples tested negative for SNV (Table 3).

Tularemia is caused by the bacterium *Francisella tularensis* that infects a variety of arthropods and vertebrates. Symptoms of human tularemia may include fever, chills, malaise, and fatigue. The disease is commonly transmitted by contacts with rabbits, insects, or tick bites. In Alameda County, a confirmed human case, transmitted by an American dog tick, *Dermacentor variabilis* was reported by CDHS in 2004. Since tularemia is classified as a bio-terrorism agent, the CDHS requested blood samples from various animals for testing. In 2006, 12 rodent samples were submitted; results are still pending.

<b>Animal</b>	<b>Hantavirus (Sin Nombre)</b>	<b>Plague</b>	<b>Tularemia</b>
<i>Peromyscus maniculatus</i> (deer mice)	0/23	0/23	pending
<i>P. californicus</i>	N/A	0/1	
<i>Mus musculus</i> (house mice)	N/A	0/1	
<i>Neotoma fuscipes</i> (wood rat)	N/A	0/1	
Raccoon	N/A	0/4	
Feral cat	N/A	0/8	
Striped skunk	N/A	0/13	
Coyote	N/A	0/1	
Grey fox	N/A	0/1	
Red fox	N/A	0/2	
<b>Commensal rodents</b>			
			<b>Ljungan virus</b>
<i>Rattus norvegicus</i> (Norway rat)		0	6/12
<i>Rattus rattus</i> (roof rat)		0/10	1/1

TABLE 3: Zoonotic disease testing summary (# Infected/# tested)

### Rabies Surveillance

The District and the animal control agencies administrate the rabies surveillance programs in Alameda County. The Alameda County Animal Control and 13 municipal animal control agencies are responsible for monitoring rabies incidences in cats and dogs. Moreover, the District responds to service requests and conducts surveillance on skunks, bats, and other wildlife. Suspected animals involved in biting, or exposure incidents are euthanized and their heads submitted to the Alameda County Public Health Laboratory (ACPHL) for rabies testing. The District also

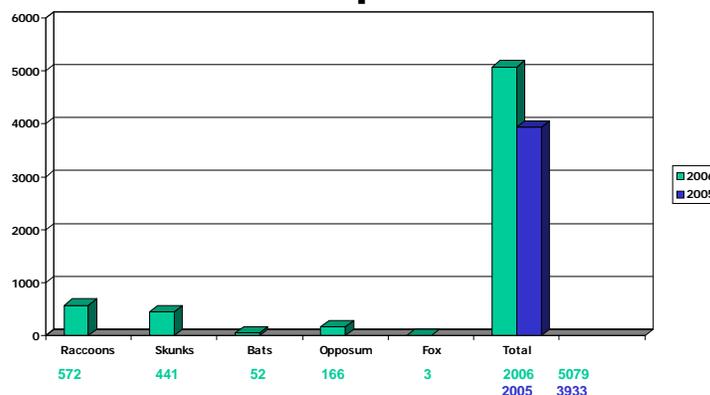
investigates animal bite incidents, and prepares an annual report for the CDHS. The predominant rabies-infected animals in California are bats and skunks. Rabies is almost never found in squirrels, rabbits, rats, or mice. In 2006, 159 animals including dogs, cats, raccoons, skunks and bats were submitted to the ACPHL for rabies testing. A bat collected in Hayward tested positive for the rabies virus.

## Wildlife Management

The District responded to 1,438 service requests concerning wildlife, and provided 2,743 hours of field support within or near residential areas. This represents a 33.5% increase in the number of service requests compared to 2005, which indicated that the current USDA Wildlife Services Specialist (WSS) played a greater role in urban wildlife problems than in previous years. The increased number of hours spent on each request, reflected enhanced efforts on complaint follow ups; working with homeowners to make sure structural improvements were made to minimize infestation reoccurrence. The majority of these activities involved service calls on raccoons, skunks, squirrels, and opossums, as well as advising homeowners on animal exclusion method and making their property unattractive to wildlife. When circumstances dictate direct action, Vector Control Officers assist property owners by coordinating with the USDA Wildlife Services Specialist (WSS) to set traps, pick up, and remove the animal. On occasions, especially with the poor or elderly residents, the staff will seek assistance from local service agencies to make the structural repairs.

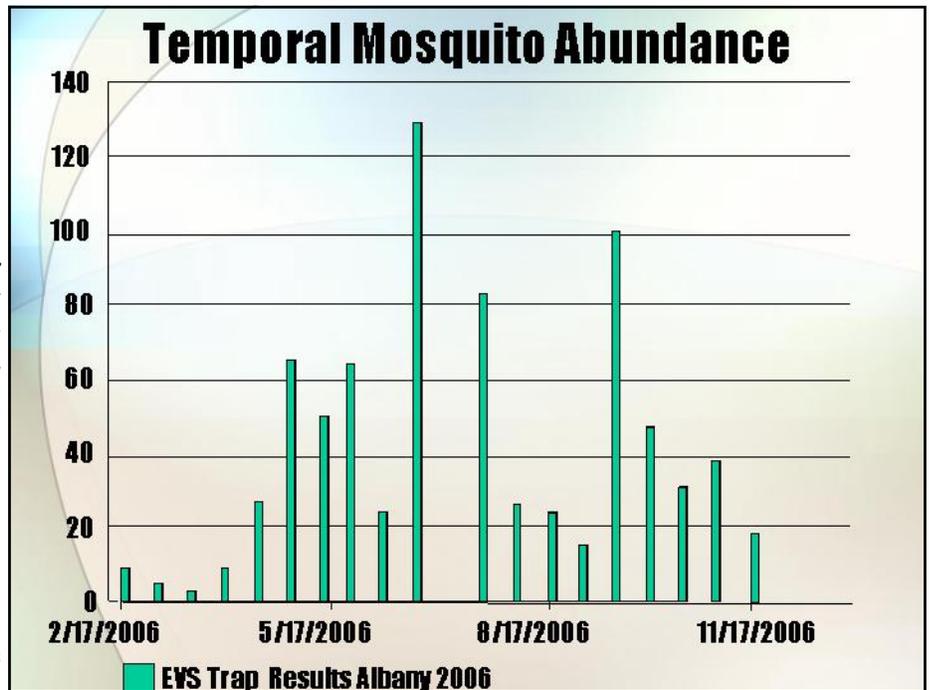
In 2006, the USDA WSS documented an 8% increase in raccoon problems associated with damaged landscape and lawns. Most homeowners were able to solve the problems by applying “grub killer” onto the lawns to stop raccoons from digging. The skunk activity was about the same as the previous year. Several female skunks were reported spraying under homes. Since rabid skunks have been detected in the County, some female skunks having contact with humans were removed and euthanized. In Livermore, three coyotes spotted killing six calves at three different ranches were removed. In Pleasanton, 25 sheep were confirmed killed by mountain lions. The Department of Fish and Game (DFG) issued the depredation permits on three different properties across the County. The WSS removed two mountain lions. There was an increase in calls reporting wild turkeys digging in yards, and causing severe damage to homeowner’s property. All complaints were referred to DFG.

### Wildlife Services Coded to Initial Service Request With Follow-ups 2006



## Mosquito Surveillance

The District enhanced surveillance efforts to detect West Nile virus (WNV) activity in the City of Albany. Carbon dioxide baited traps (EVS traps) were set overnight from April to November to attract and capture adult mosquitoes to test for WNV. A total of 231 trap nights were recorded and 767 female mosquitoes were collected in 2006. Five mosquito pools were submitted to the Center for Vector-borne Disease (CVEC), University of California, Davis; all tested negative. Our District technicians collaborated with the Golden Gate Field staff to identify existing and new mosquito larval breeding sources and implemented source reductions to reduce the infection threat to people and horses. We also worked with adjacent Contra Costa County technicians. We stocked two Albany ponds with mosquito fish to facilitate delivery. In Albany, we identified four species: *Culex tarsalis*, *Cx. pipiens*, *Cx. erythrothorax*, and *Cx. stigmatosoma* as competent WNV vector species. In 2007, we will monitor and eliminate breeding sites for these mosquitoes, in addition to the EVS traps; we may use gravid traps to increase captures of egg-laying female mosquitoes. Testing the gravid females that have taken a blood meal will enable us to increase chances of isolating the virus if present.



Additionally, we will try to increase awareness and encourage Albany residents to call the West Nile virus dead bird hotline, and report dead birds. WNV positive birds have proven to be a reliable early indicator of West Nile virus activity in a region.

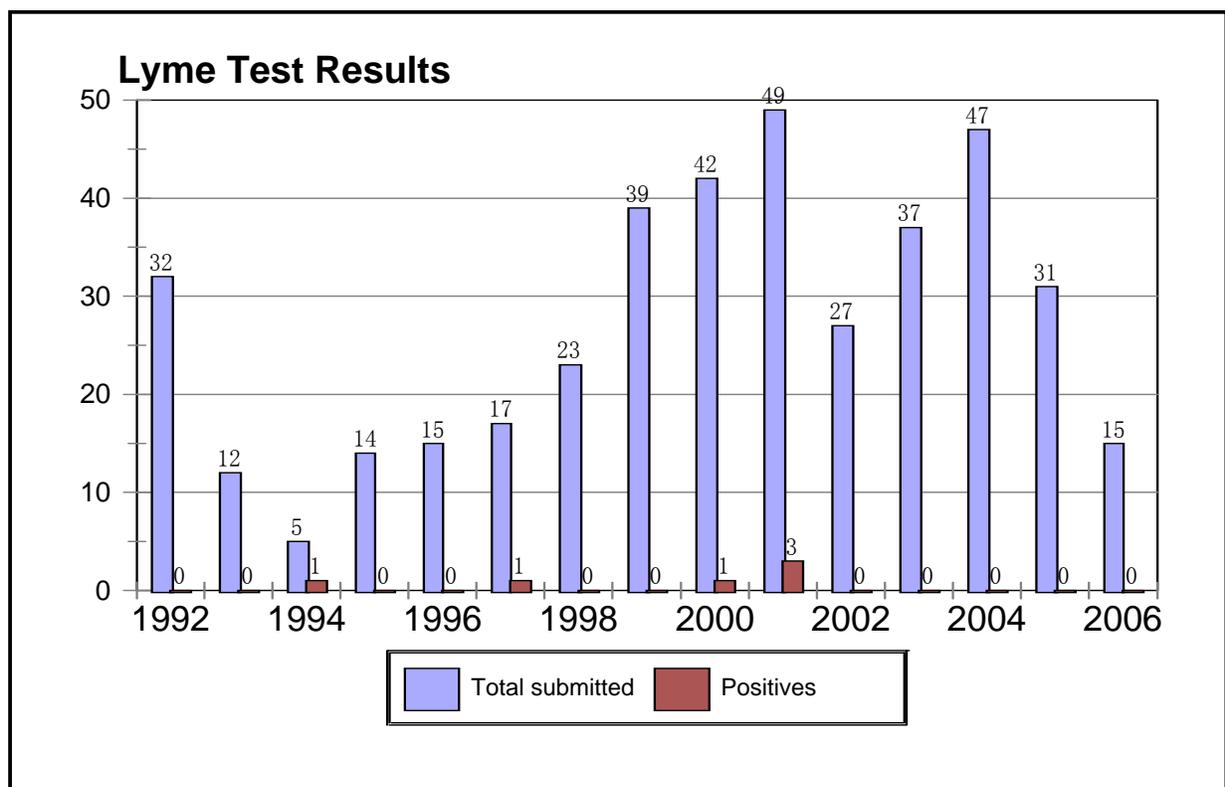
## Venomous Arthropods

Venomous arthropods include insects, mites, ticks, and spiders that can; sting, bite, secrete venoms, and cause allergic reactions in humans and pets. The District provides identification of spiders, scorpions, bees, and a wide variety of wasps, including yellow jackets wasps. Recommendations are given on exclusion and control of these pests to help property owners avoid being bitten or stung. With yellow jacket wasps, and honey bee swarms, the risk of stinging increases the urgency for timely response. The District will destroy these nests when they are located in close proximity to people. In addition, the District has a contract with the East Bay Regional Park District (EBRPD), to control ground nesting wasps within the county parks. In 2006, the District responded to 317 venomous wasp and 378 honeybee complaints. An additional three yellow jacket wasp nests were controlled within the EBRPD. Since the District is not licensed to make structural repairs to buildings, bee and wasp nest control inside buildings are referred to structural pest control operators for abatement.

## Miscellaneous Arthropods

The District responds to service requests on a variety of arthropods (tick, mites, and spiders), and insect pests such as head lice, cockroaches, flies, fleas, or ants that infest homes and commercial facilities. There were 345 service requests for pest identifications, consultations, and inspections were investigated. Frequently, the District receives service requests related to biting arthropods and insects other than mosquitoes. Bed bugs have become an emerging nuisance pest problem in Alameda County. Our Vector Ecologist responded to 21 bed bug infestation cases. We had 100 service requests including; fleas (41), mites (32), lice (12), and ticks (15), were also investigated. In 16 of the cases, tropical rat mites were identified as the offending agent. Tropical rat mite infestations may cause severe emotional distress to humans. Our Vector Ecologist provided suggestions on eliminating the mites and the rodent hosts. Incidence of this mite infestation has steadily increased over the past several years. In three cases, mites were not found on the premise and it is possible that the victims were exposed at offsite locations or the victims may be suffering from delusory parasitosis. Delusory parasitosis does not imply that the victims do not experience the biting sensation. Some people with skin conditions or allergic reactions to drugs may experience biting sensations by minute arthropods. In these instances, they should be referred to physicians for further evaluations.

As part of the Lyme disease surveillance program, our staff collects and identifies ticks, and recommends testing for tick borne disease when deemed appropriate. Our District provides consultations, educational resources, tick identification, and testing facilities for Lyme disease. Fifteen *Ixodes pacificus* ticks were submitted to the Sonoma County Public Health Laboratory for Lyme disease testing; all tested negative. The District now has the capability to perform Lyme disease indirect fluorescent antibody (IFA) tests. We hope to expand this capability when new staff is hired.



## Swimmer's Itch

Swimmer's itch, also called cercarial dermatitis, appears as a skin rash caused by an allergic reaction to certain parasites found in specific birds and mammals, and lifecycle includes development in some aquatic snails. When these microscopic parasites are released from infected snails, they can burrow into the nearby swimmer's skin, causing an allergic reaction and rash. Swimmer's itch is most frequent during summer months. In 2006, nine cases from Crown Beach in Alameda were reported to the Department of Environmental Health in late August and early September. Signs were posted along the shoreline to warn swimmers. The District staff conducted field surveillance and collected three batches of *Haminoea* bubble snails (200 snails per batch) and shipped them to the University of New Mexico for extracting cercariae. Unfortunately, due to delivery problems, two batches arrived at the laboratory decomposed and un-testable. The last batch did not yield cercariae. The District will continue to collaborate with the University of New Mexico to conduct DNA sequence of the cercariae in 2007.



Swimmers Itch Red Bumps on Foot of Crown Beach Swimmer



Bubble Snail at Crown Beach



Collecting Bubble Snails

## City of Berkeley

The City of Berkeley is within the ACVCSD, but entered into a contractual agreement with the Environmental Health Division within the City of Berkeley Health Department, for vector control responsibilities in 1984. Since the inception, Berkeley has never had the resources or expertise to provide full vector services to its residents, and as a result, the District has continued to provide the services primarily with venomous wasps, rodent surveillance, and rodent ectoparasites. In 2006, our District staff responded to 38 service requests relating to; bees, Lyme disease, mites, rodent problems, mosquitoes, ticks and yellowjacket wasps in Berkeley.

\* City of Berkeley did not provide the total service requests report for 2006.

## Inventoried Sources

The District maintains an inventory of stables and kennels, and inspects them regularly to prevent nuisance problems such as odors, insects, or rodents. Upon request by the Alameda County Animal Control, animal hobbyist facilities are inspected during annual permit renewal. Currently, there is no statutory requirement or authority to inspect pet shops, animal grooming salons or livestock holding facilities however, when there are nuisance complaints, we will perform inspections. Twenty-eight facilities inspections were conducted; either in response to a use permits renewal or resident service requests.

## Nuisance Abatement

Garbage, rubbish, junk cars and animal wastes can become public nuisances when left unattended prior to disposal. In addition, these nuisance piles provide harborage and food sources for rodents, flies, and other pests that might result in human disease transmission. The District responds to complaints about these conditions and we follow-up to assure nuisance abatement complies with applicable laws and regulations. The District responded to 404 service requests concerning nuisances, primarily garbage, resulting in 1,054 field services including investigations, progress assessments, correspondence, and compliance inspections.

## Public Education

To increase public awareness of West Nile virus (WNV), the disease, transmission, prevention, and who is at risk, the District distributed a WNV video produced by CDC to six public access cable/broadcast channels (English and Spanish), and to each school in Albany, in 2005. We developed and sent out a questionnaire to Albany residents (in 2006) to gauge their awareness and knowledge of WNV. The information will guide us to target those residents that need additional outreach in 2007.

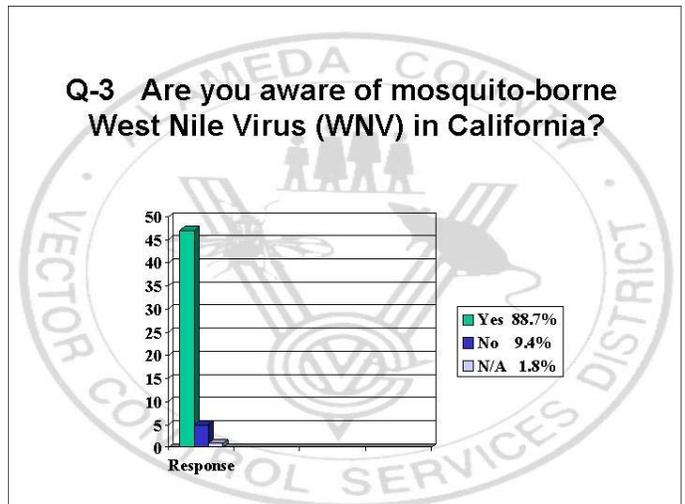
During 2006 several new brochures were created and posted at our web site: Lesser House Fly, Rabies, Ant Control, Chinese language District Brochure, Spanish language House Mouse Brochure, Spider Brochure, PowerPoint Presentations on General Vector Control and 2006 Mosquito Control Summary for Albany. We produced and posted our Annual Report, and Newsletter on the web site and distributed copies to the Cities, and Board of Supervisors.

Community Events: Staff participated in 16 health fairs, gave 19 presentations in communities throughout the County. West Nile Virus and Vector Control Awareness Week was introduced with press releases. Presentations were given to community organizations on arthropod vectors and zoonotic diseases.

Additional public outreach methods include one-on-one consultations, distributing educational materials, promoting visits to our web site, as well as staffing exhibits at health fairs and public events such as the Alameda County Fair. A major goal in 2006 was to update all informational brochures, website, posters, and translate brochures to other languages such as Spanish and Chinese to better serve our diverse ethnic communities.

## Website Services Requests

Four years ago, the District provided the electronic service request under [Contact Us](#) on our web site (<http://www.acvcsd.org>). In 2006, we had a total of 166 inquiries posted on our web site for services.

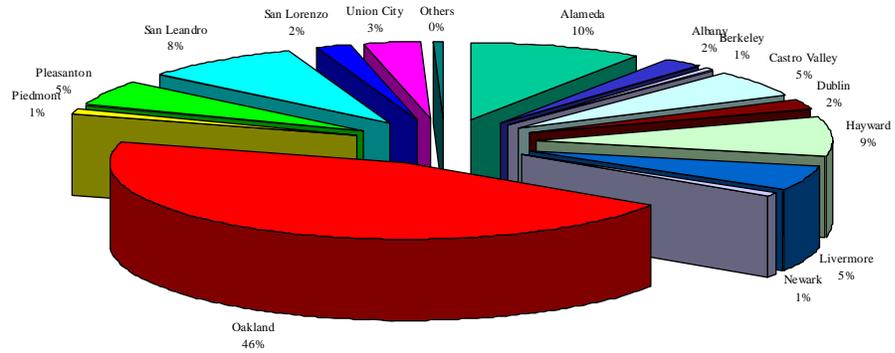


## Pesticide Use Summary 2006

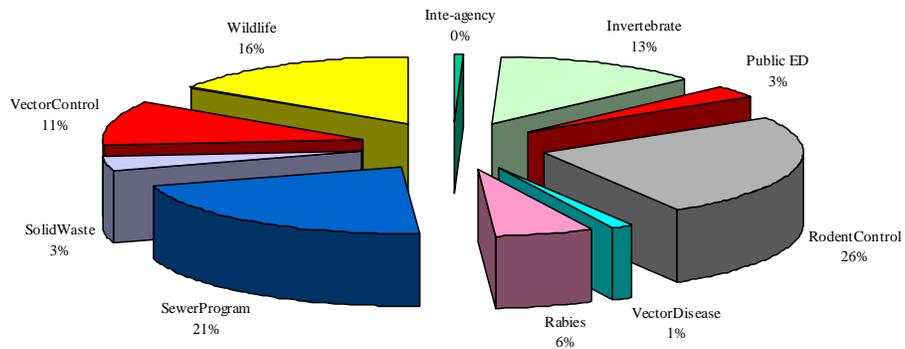
Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Delta Dust	AgrEvo	Dust	Yellow Jacket/ Wasp nests		
Conrac Super Blox	Bell Labs	8oz or 1 lb blocks	Domestic Rodents	612.5 lbs.	77
Ditrac Tracking Powder	Bell Labs	Dust	Domestic Rodents	3.06 lbs	11
Quintox Meal	Bell Labs	Meal	Domestic Rodents		
Conrac Pellets	Bell Labs	Pellets	Domestic Rodents	8.81 lbs	9
Conrac Blox	Bell Labs	1 ounce	Domestic Rodents	2 lbs	2
M-Pede	Mycogen	Liquid	Bees		
Maxforce	Clorox	Large Bait Stations	Cockroaches	12.23 lbs	86
Wasp Freeze PT515	Whitmire	Aerosol Spray	Wasps	6.08 gals	55
PT565	Whitmire	Aerosol Spray	Wasps		
Drione Dust	Aventis	Dust	Yellow Jackets	23.16 lbs	93
Rozel	Lipha Tech	Tracking Powder	Domestic Rodents		
Poison Free	Victor	Aerosol	Yellow Jackets	0.66 lbs	6
BTI Briquette	Summit	10.0%	Mosquitoes		
BTI Liquid*	Valent	VectoBac 12-AS	Mosquitoes		
Methoprene*	Wellmark	ALL SR-20	Mosquitoes		
Altosid XR .	Wellmark	XR Briquette	Mosquitoes	0.86 lbs	13
Altosid XR-G	Wellmark	XR-G granules	Mosquitoes	3.14 Lbs	20

The District complies with the countywide Integrated Pest management policy set by the Board of Supervisors. The largest amount of pesticides were applied to suppress rats in the sewers or to destroy yellow jacket nests. Mosquito larvicides totaled less than a quarter pound of active ingredient. The (\*) for BTI liquid and methoprene liquid refer to a field formulation called Duplex, which is a mixture of the two biorational insecticides—a bacterium and an insect growth regulator.

### Alameda County Vector Control Services Request by Incorporated and Unincorporated Cities, 2006



### Alameda County Vector Control Services Requests by Program, 2006



## **BENEFIT ASSESSMENT**

The Board of Supervisors annually reviews the proposed rate of assessment, holds public hearings, and then establishes the assessment for the fiscal year. Assessments are levied and collected at the same time and in the same manner as the county property taxes. They are subject to the same fines, penalties, and forfeiture as other property taxes. The assessment charge levied against each parcel is available for review at the Vector Control Services District Office, and at the Clerk of the Board of Supervisors Office at: 1221 Oak Street, Oakland, on the 5th floor.

Assessments are based on land use as classified by the Assessor's Office. A basic assessment rate is established as a single benefit unit (BU), which is applied to the schedule for assessments according to land use as follows:

### **LAND USE CATEGORIES**

1. Single Family Residence/Condominium	1 BU
2. Vacant Land Parcel	1 BU
3. 2-4 Residential Units	2 BU's
4. Commercial and Industrial Property	2 BU's
5. Large Agricultural Rural Properties	2 BU's
6. 5 Residential Apartments or more	5 BU's
7. Improved Commercial Property	5 BU's

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**ASSESSMENT FOR ONE BENEFIT UNIT (BU)  
(Single Family Residential and Vacant Land)  
CSA Basic Rate and Oakland  
1984-2006**

FISCAL Year	CSA Basic Rate	OAKLAND Supplemental Rate	OAKLAND Total Rate*
84-85	\$3.15	\$0.00	\$3.15
85-86	2.66	0.00	2.66
86-87	2.66	0.00	2.66
87-88	3.24	0.00	3.24
88-89	3.30	0.70	4.00
89-90	3.58	0.66	3.84
90-91	3.80	0.70	4.50
91-92	3.96	0.70	4.66
92-93	3.96	0.70	4.66
93-94	4.72	1.04	5.76
94-95	4.82	1.06	5.88
95-96	5.82	1.26	7.08
96-97	5.92	1.28	7.20
97-98	5.92	1.28	7.20
98-99	5.92	1.28	7.20
99-00	5.92	1.28	7.20
00-01	5.92	1.28	7.20
01-02	5.92	1.28	7.20
02-03	5.92	1.28	7.20
03-04	5.92	1.28	7.20
04-05	5.92	1.28	7.20
05-06	5.92	1.28	7.20
06-07	5.92	1.28	7.20

\*Includes Oakland Supplemental initiated 1988-89

**CSA VECTOR CONTROL SERVICES  
RECOMMENDED ASSESSMENTS  
FY 2006-2007**

**Benefit Unit Assessment**

<b>Use/Size</b>	<b>Basic</b>	<b>Oakland</b>
1. Single Family Residence/ Condominiums	\$ 5.92	\$ 7.20
2. Vacant land	\$ 5.92	\$ 7.20
3. Multiple Residence Small (2-4 Units)	\$ 11.84	\$ 14.40
4. Commercial, Industrial	\$ 11.84	\$ 14.40
5. Large Rural Property (More than 10 Acres)	\$ 11.84	\$ 14.40
6. Multiple Residential	\$ 29.60	\$ 36.00
7. Large Commercial (Hotels, Motels, Mobile Home Parks)	\$ 29.60	\$ 36.00



**Alameda County Vector Control Services District**  
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Alameda, CA 94502  
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Web: <http://www.acvcgsd.org> E-Mail: [ehvector1@acgov.org](mailto:ehvector1@acgov.org)

