



Alameda County Vector Control Services

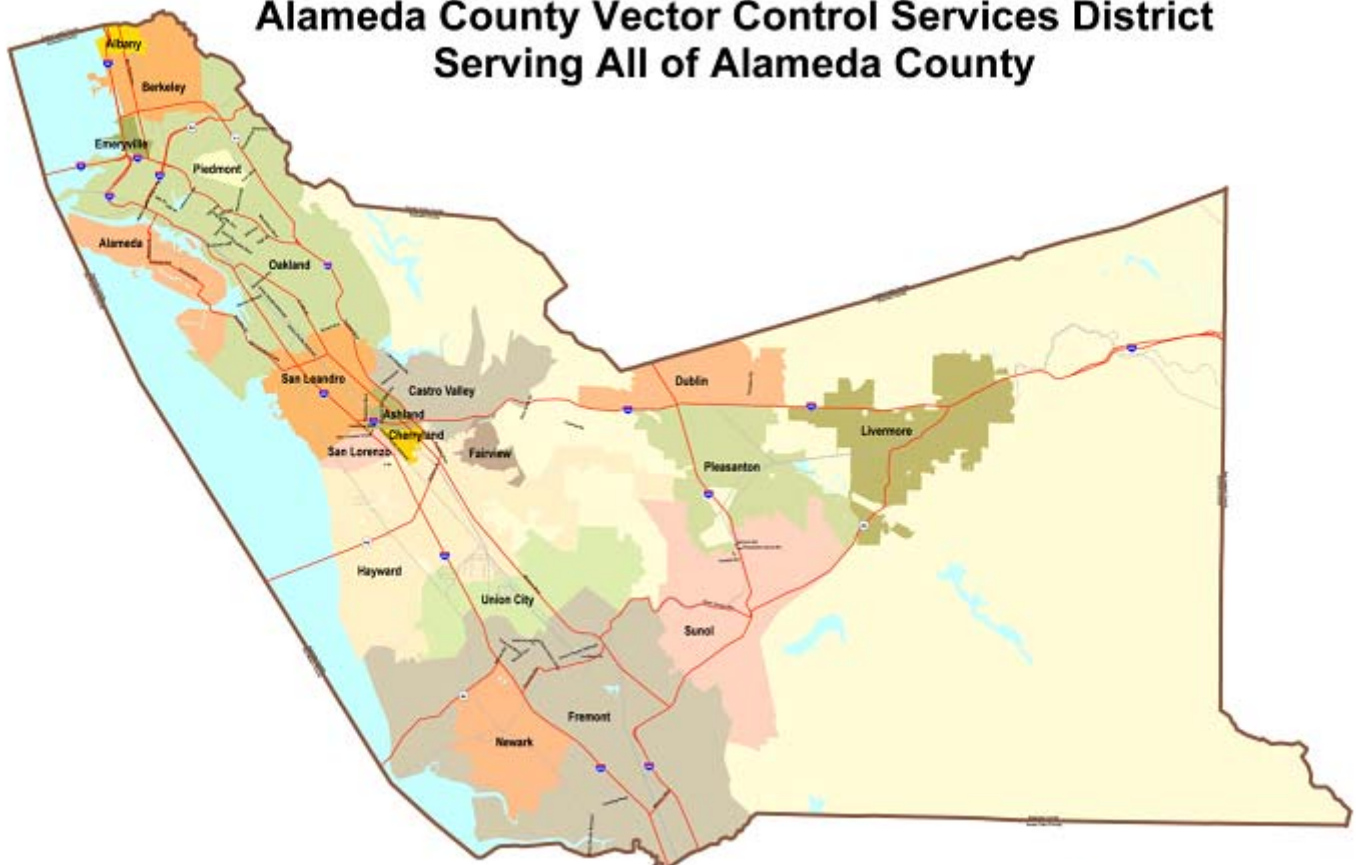


A Division of The Alameda County Environmental Health Department

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

Annual Report 2012

**Alameda County Vector Control Services District
Serving All of Alameda County**



MISSION

The mission of the Vector Control Services District is to prevent the spread of vector-borne diseases, injury, and discomfort to the residents of the District by controlling insects, rodents, and other vectors and eliminating causal environmental conditions through education and integrated pest management practices.

DISTRICT SERVICES

Request for Service Investigations

- Conduct investigations pertaining to service requests for disease vectors, assess the extent of the problem, and take the appropriate action.
- Investigate reported public health and vermin problems related to rodents, cockroaches, flies, fleas, lice, bed bugs, 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 tactics.
- Conduct surveys of rodents, insects and arthropods of public health importance, and maintain a reference collection.
- Survey and control cockroaches in public sewers, utility boxes, and storm drains.
- Conduct yellow jacket and bee swarm control in public areas or by contract with other agencies.

Wildlife Management, Domestic Animals, and Rabies Control

- Oversees the administration of rabies quarantine measures resulting from animal bites.
- Conduct investigations of nuisance wildlife problems relating to bats, skunks, opossums, raccoons, dogs, cats, rabbits, pigeons, and birds.
- Trap biting or nuisance animals when preventative alternatives are not possible or unlikely to be effective.
- Work in coordination with local animal control agencies, and submit annual statistical reports to the California Department of Public Health.

Rodent Control

- Provide recommendations for rodent proofing and suppression in homes, neighborhoods, open areas, and businesses.
- Conduct rodent suppression during disease outbreaks or emergencies.
- Conduct surveys of rat populations to assess species abundance, distribution, and disease carrying potentials.
- Conduct District-wide inspection and baiting of sanitary sewers and waterfronts for rats.
- Inspect and test sewer laterals and mains to detect breaks, which may provide entry portals for rodents to move into adjacent neighborhoods.

Solid Waste Problems

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

Vector-Borne Disease Surveillance and Control

- Investigate reports of animal or human cases of vector-borne disease, such as Lyme disease, psittacosis, plague, hantavirus (HPS), scabies, head lice, reptilian salmonellosis, ehrlichiosis, and rabies to determine cause, incidence, and recommend preventative, and remediation measures.
- Assist the public with tick identification, and submissions to laboratories for Lyme disease testing.
- Collect rodent fleas and determine plague, or other vector-borne disease transmission potentials.

Public Education and Information

- Provide vector control presentations to interested groups, and participate in public events.
- Disseminate educational information on vectors and vector-borne diseases to individuals and groups.
- Staff public display booths at health fairs, special events, and the County Fair.
- Post annual shellfish harvesting quarantine notices at the Alameda County bay shoreline.
- Maintain a current, informative and interactive web site.
- Provide timely and informative media releases on vector control issues.

Legal Enforcement

- Provide assistance to local enforcement agencies to enforce state laws, regulations, and local ordinances when necessary to protect the public from disease vectors and nuisance problems.

INTRODUCTION

This Annual Report for County Service Area (CSA) VC 1984-1 for Vector Control is presented to the Alameda County Board of Supervisors (BOS) in compliance with Sections 25214 and 25215.3 of the Government Code; County Service Area Law Chapter 13.20, and California Health and Safety Code Sections 116100-116180. The report, which includes the recommended benefit assessment for the fiscal year 2013-2014, is submitted for review and public hearing.

This report gives a history on 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 assessment tables since the CSA was formed in 1984, as well as the proposed 2013-14 assessments. This report is available for public review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502, and it is also posted on our website at <http://www.acvcsd.org>.

BACKGROUND & HISTORY

The County Service Area (CSA) 1984-1 for Vector Control was established in June 1984 to serve the public needs by providing a comprehensive vector control program. The Environmental Health Department was experiencing fiscal shortfalls, and had to reduce vector control services in Alameda County. In response, the Board of Supervisors (BOS) created the County Service Area after the passage of Measure A, which received over 70% voter's approval for the formation of the CSA. Initially, Dublin, Emeryville and Fremont were not included in the District and opted to seek alternative sources for providing vector program.

In 1992, at the request of the Dublin City Council, which voted to join the District and subsequently Dublin was annexed by the BOS. In 2009, both Emeryville and Fremont were annexed to the District by the BOS after a successful Proposition 218 mail-out balloting process. Currently, the CSA is a countywide District; it provides vector control services to all 14 cities in Alameda County, and the unincorporated county areas.

The City of Berkeley already had an existing vector control program when the CSA was formed in 1984, which is currently funded by a formal contract between the City of Berkeley and the CSA.

CITY OF OAKLAND

In 1987, the City of Oakland recognized that it had a severe rat problem emanating from the sanitary sewers which exceeded the District's staff capabilities to control the problem. Subsequently, Oakland voters approved a supplemental assessment, which was first levied in fiscal year 1988-89, and provided additional funding to control rodents in the sewers.

2012 ANNUAL SUMMARY

Introduction

The County Service Area (CSA) VC 1984-1 is solely funded through benefit assessment (BA) charged to each property parcel. In 1997, the voters approved Proposition 218, 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 (CSA 1984-1) had not been able to increase revenues without conducting a Proposition 218 Ballot Measure, and revenue only increased in accordance with the growth of new properties. Since 2005, the CSA was operating on reserves and savings, while costs and responsibilities had drastically increased. From 2005 to 2008, the District had reduced expenditures by not replacing staff vacancies and cutting back on purchasing equipment and supplies. The CSA had been able to keep up with services demand, but had cut back on District initiated work.

In 2007, the SCI Consulting Group was awarded the contract to conduct a survey among the property owners to gauge their support for a new benefit assessment. The result was an overwhelming support for a BA of \$ 4.08 to boost the existing annual assessment rate to \$10 per single-family residence. Assessment ballots were mailed to all property owners within the District boundary areas in May 2007. The ballot measure received 67.7% voter support and the Board of Supervisors approved the new assessment of \$4.08 in July of that same year.

In May of 1995, the Alameda County Department of Public Health contracted with a private consultant to prepare a Strategic Market-

ing Plan. The recommendation for the CSA was to work with the Cities of Emeryville and Fremont toward incorporation into the CSA. The City of Emeryville contracted for services with the District in the late 1980's, but discontinued the contract for financial reasons. The City of Fremont attempted to create its own Vector Control program, but was not able to secure the necessary funding to develop an effective program. In 2006, the Alameda County Local Agency Formation Commission (LAFCO) contracted with Burr Consulting to review all of the County Service Areas for possible consolidation. Burr Consulting recommended that the Vector Control District and the Mosquito Abatement Districts conduct balloting to provide countywide services and work toward consolidation. In January of 2008, SCI Consulting surveyed a sample of residents in Emeryville and Fremont, the results from both cities were favorable to a new benefit assessment to have the CSA provide vector control services.

In March, 2008, the Alameda County Board of Supervisors (BOS) authorized the CSA to proceed with an application to the LAFCO to obtain an approval of Annexation process to annex Emeryville and Fremont. The CSA submitted the application which included environmental documents (Initial Study, negative Declaration) pursuant to the California Environmental Quality ACT (CEQA). In July of 2008, the LAFCO approved the CSA application of annexation and issued a Certified LAFCO Resolution. On September 9, 2008 the LAFCO adopted a Resolution and ordered the Annexation.

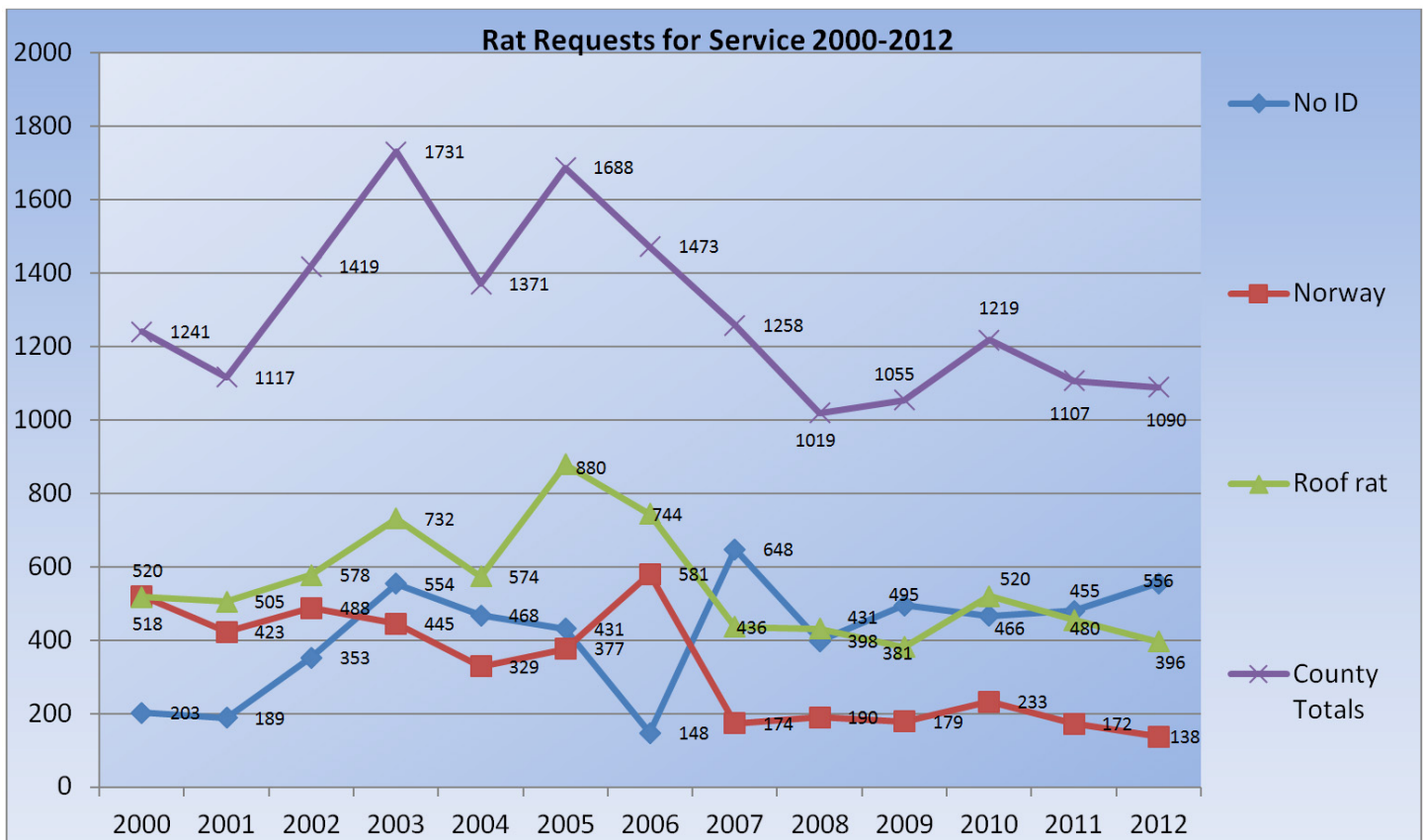
In compliance with Proposition 218, the CSA mailed out ballots to all parcel owners in Emeryville and Fremont regarding the proposed

new Vector and Disease Control Assessment of \$10 for single-family residence. The results were favorable (Emeryville-70.23% and Fremont- 66.36%) to support the new assessment in providing the vector services in both cities. In response, subsequently, the BOS approved newly proposed Vector and Disease Control Assessment of \$10 for single-family residence. As of July 1, 2009, the CSA has extended the vector control services to Emeryville and Fremont and became a countywide service District.

VECTOR CONTROL SERVICES in 2012 - Detail

Urban Rodent Surveillance

The urban rodent surveillance program focuses on monitoring and controlling commensal rats (Norway and roof rats) and mice in residential, commercial and business properties. Program objectives include giving recommendations on environmental manipulation and sanitation methods to exclude and prevent rodent settlement, and when necessary, suppressing rodent populations to reduce property damage, food contamination, and disease transmission. In 2012, the District received 1,090



requests for service from the public on domestic rats, representing 19% of all requests. Additionally, staff performed 9,352 field services related to domestic rodents including smoke and dye tests of sewer lines, field surveys, follow-up evaluations, and enforcement actions.

When evidence indicates rats are surfacing near sewer laterals, our field staff conducts inspections to locate broken sewer lines, and notify the homeowners or the Public Works Department to ensure repairs are made. In 2012 staff found 16 broken sewer laterals and performed dye tests or smoke tests to verify the breaks. Our District notified Oakland Public Works supervisors and other municipalities to facilitate repair of broken sewer lines and laterals.

As part of the supplemental assessment in the City of Oakland to enhance sewer rodent surveys, District staff conducts weekly inspections of designated census tract blocks. Underground sanitary sewer access structures (manholes) were inspected for signs of rodent activities (live rats or their droppings); to control the rodents, anticoagulant bait blocks are suspended in sewers to allow feeding. A total of 8,764 sewer inspections and 1,884 treatments were made in Alameda, Emeryville, Oakland, and Piedmont. We also continued our effort to evaluate neighborhoods with rat activity in the sewers based on clusters of complaints, and take remedial action when possible. Specifically, we targeted neighborhoods where residents were seeing rats roaming on surface streets.

Roof rats are established throughout the suburban and semi-urban areas in Alameda County. Vector control officers responded to 396 roof rat service requests from homeowners, businesses, and municipalities. The Oriental rat flea, *Xenopsylla cheopis* is of primary

concern because it is the vector for urban bubonic plague. This flea species primarily found on Norway rats is also found in our local roof rat populations. Despite the low number of fleas found on roof rats in the County and because roof rats are highly adaptable to diverse ecological habitats, a relatively rich flea fauna could potentially be a public health concern. The District sets a high priority to ensure that these rats do not enter homes, and potentially expose occupants and their pets to the 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 hand out brochures, and when necessary, the District will work with the local Code Enforcement Agencies to seek compliance to mediate the problem. If evidence is found suggesting an infestation over a larger area than a single-family residence, neighborhood surveys are conducted.

Additionally, ectoparasites attached on rodents are capable of vectoring a number of disease organisms, 27 commensal rodents (Norway and roof rats) from urban and peridomestic areas were trapped and examined for ectoparasites (fleas and ticks) (Table 1).

Sylvatic Rodent Surveillance

Sylvatic rodents such as deer mice, woodrats, squirrels, and meadow voles are commonly found in rural and semi-rural areas. Many of these animals serve as reservoir hosts to zoonotic diseases such as plague, Hantavirus Pulmonary Syndrome (HPS), ehrlichiosis, tularemia, Lyme disease, and babesiosis. A reservoir host is an animal that can support parasite development, remains infected for an extended time, and serves as a source of vector infection. The reservoir hosts are not affected by the pathogens.

2012	N	# w/ fleas	# of fleas	Flea Species	Flea Index	Ticks Species
SYLVATIC RODENTS						
Pinon mouse <i>Peromyscus truei</i>	2	0	0		0	
Deer mouse <i>P. maniculatus</i>	5	1	1	<i>N. fasciatus</i>	0.2	
<i>P. californicus</i>	2	1	2	<i>Not identified</i>	1	<i>Ixodes woodii</i>
Wood Rat <i>Neotoma fuscipes</i>	2	1	2	<i>Not identified</i>	1	
Roof Rat <i>Rattus rattus</i> Sylvatic	12	6	25	<i>Atyphloceras longipalpus</i> <i>Opisodasys keeni</i> <i>Orchopeas sexdentatus</i> <i>Leptosylla segnis</i>	2.1	18 <i>Ixodes pacificus</i> (larva,nymphs), 8 <i>Der-</i> <i>macentor occidentalis</i> (larva), 2 <i>I. spinipalpus</i> (larva,nymph)
COMMENSAL RODENTS						
Norway rat <i>Rattus norvegicus</i>	8	0	0		0	
Roof Rat <i>Rattus rattus</i>	7	0	0		0	
WILDLIFE						
Feral Pig	1	0	0			4 <i>D. variabilis</i>

Table 1. Ectoparasites (fleas and ticks) collected from wildlife, commensal and sylvatic rodents in urban and peridomestic areas.

Hantavirus Pulmonary Syndrome (HPS) was first recognized in 1993; it is a respiratory illness associated with breathing air containing rodent urine and feces contaminated with the Sin Nombre virus (SNV) particles. Deer mice are the principal reservoir host. Occasionally, deer mice will enter buildings and potentially expose the occupants to the virus. Past surveillance conducted at various localities, detected 6-18% of the deer mice are infected with SNV. In collaboration with the California Department of Public Health (CDPH), the District conducts HPS surveys in the East Bay Regional Parks to increase public awareness of the disease and to reduce exposure to

deer mice inhabited structures.

In 2012, District staff surveyed four parks in the East Bay Regional Park District: Anthony Chabot, Del Valle, Mission Peak, and Sunol. Only Anthony Chabot and Sunol yielded rodents for serological testing. Six deer mice from Anthony Chabot and seven rodents from Sunol were trapped, respectively. They tested negative for SNV.

In early August, the CA Department of Public Health (CDPH) informed the District that an Alameda County resident had contacted and

Died from a hantavirus infection Based on the travel history, the patient had camped at Yosemite National Park in June. District staff and CA DPH biologist were dispatched to the patient's residence to assess for potential exposure sites and trap rodents to test for antibodies to *Sin Nombre* virus. Rodent droppings were found inside kitchen cabinets, the water heaters, and an exterior air condition unit. Traps were placed inside the house, in the backyard, and an adjacent walking trail in the back of the residence's property. No rodents were caught. It was later confirmed by CDPH and CDC that the patient was infected with hantavirus in Yosemite National Park. A second human case of another camper at Yosemite from Alameda County was confirmed on September 5. The patient survived.

Rabies Surveillance

The authority for the Rabies Program is the responsibility of the County Health Officer at the Department of Public Health, which provides laboratory support for the program, and performs human case investigations. The CSA manages the statistical data, and works cooperatively with the 13 local animal control agencies to administrate the rabies surveillance program in Alameda County. 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, their heads removed and 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 CDPH. Bats and skunks are the primary rabies-infected animals in California. The CSA submitted 127 animal heads, including dogs, cats, raccoons, skunks and bats to the ACPHL for rabies testing in 2012. Four Bats collected from Berkeley (1), Sunol (1), and Fremont (2) tested positive for the rabies virus. Of the animals sub-

mitted for testing, 63 were reported to have human contact; 33 had no human contact; 30 were reported as wildlife and domestic animal contacts; and 1 with unknown contact information.

Wildlife Management

In 2012, the District responded to 1,616 service requests concerning wildlife, and provided almost 4,760 hours of field support within or near residential areas. A majority of the service calls involved raccoons, skunks, opossums, wild turkeys, and feral pigs. We advised homeowners to implement exclusion, sanitation, and modification of habitats to eliminate or prevent recurrence of the wildlife problem. Our Vector Control Officers assist property owners by coordinating with the USDA Wildlife Specialist (WS) who deploys integrated pest management (IPM) techniques and offered a wide range of preventive (indirect control) and population reduction (direct control) methods. Here is a breakdown of the common wildlife nuisance species that comprised of most service requests.

Raccoons

In 2012, the District responded to 616 service requests related to raccoon problems. Raccoons often den in backyards, beneath decks, under homes, or attics, and they feed on backyard fruits, vegetables; pet foods left overnight and dig for beetle grubs in lawns. A raccoon "grubbing" in lawns and the subsequent damage, was the leading reason for raccoon related requests for service. Moreover, young raccoons are generally born in April or May, and the mother's preference to nest and care for her young in attics is the second most common service request for trapping and exclusion. In the attic, the raccoons may urinate and defecate in a specific

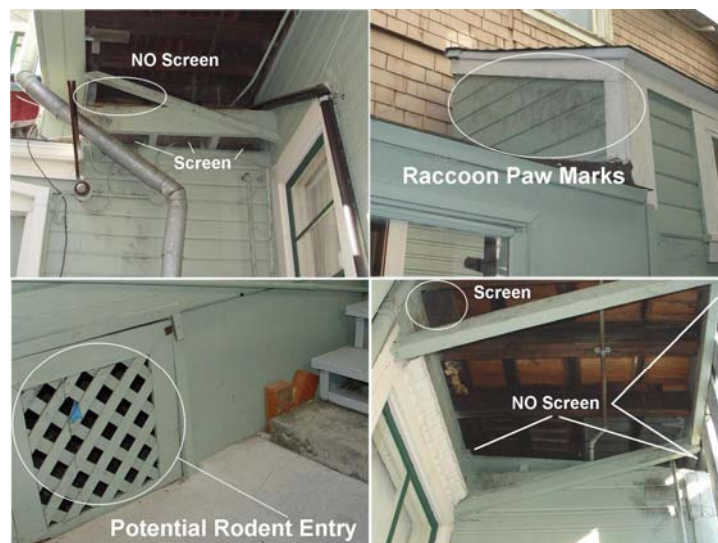
Type of Animal Tested	Rabies Negative	Rabies Positive	Total Tested
Bat	34	4	38
Cat (domestic + feral)	40	0	40
Dog	20	0	20
Fox	2	0	2
Opossum	2	0	2
Bobcat	1	0	1
Raccoon	8	0	8
Skunk	14	0	14
Squirrel	2	0	2
Total Animals Tested			127

Animals tested for Rabies by the Alameda County Public Health Laboratory during 2012.

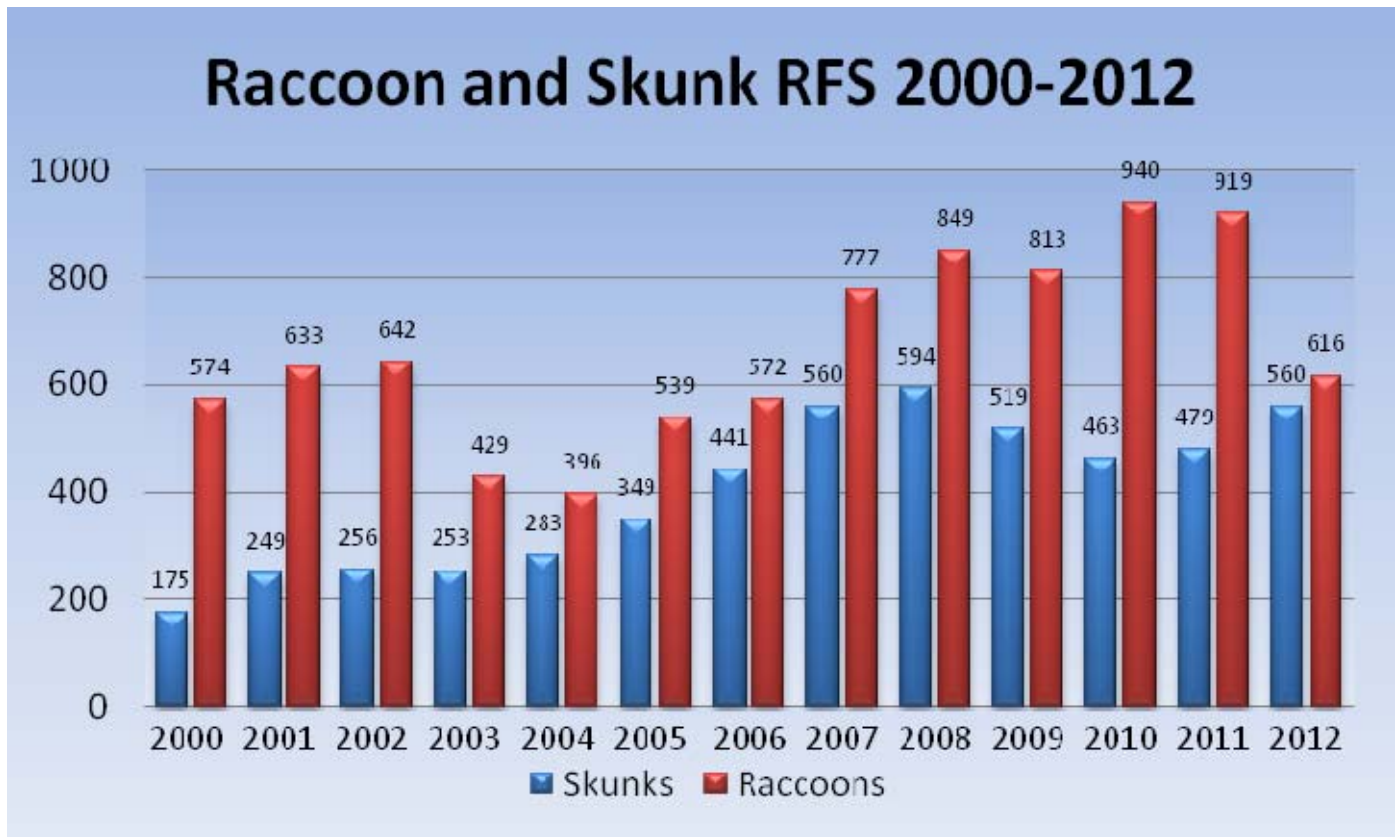
spot that can cause staining of the ceiling below and create an objectionable odor. To prevent damage to lawns, the WS suggests applying commercial grub killer products, repellents, and cutting back on watering the lawn. Exclusion is the key to eliminating den sites in structures. Repairing cracks and crevices, installing galvanized hardware mesh on openings can deny raccoon's access to homes, and using raccoon eviction fluid can expel raccoons that have gained access to structures.

Skunk problems were the second most common service request after raccoons, totaling 560 calls in 2012. Skunks invade residential areas due to the availability of food, water, and shelter. Skunk problems peak during the animal's mating season around February and March, with litters born about 9 weeks later. They become a nuisance problem when the mother, in defending her litter, will spray when she perceives threats from the homeowners. Additionally, skunks can be a carrier of rabies in California and are a potential public health problem. Skunk control methods focus on making the garden, yard, and residences less attractive to skunks; trapping may be used if

these methods are not sufficient. Habitat modification include cut back on overgrown shrubbery and tightly stack firewood to reduce potential den sites. Exclusion involves denying access through screening and using ¼-inch mesh hardware cloth. Homeowners can spray the lawn with an approved insecticide to control grubs and other insects, thus reducing the food for skunks and discourage them from digging.



Typical inspection report images documenting animal entry access points.



Other wildlife nuisance animals

Our WS received 14 reports of feral pigs, 31 for wild turkeys, 24 for coyotes, and 7 for mountain lions. Depredation permits were issued for 2 mountain lions, 10 feral pig, and 24 for wild turkeys.



Allowing wildlife access to our pets' food is a leading cause of wildlife population growth, and results in an increase of conflicts between people, our pets and wildlife.

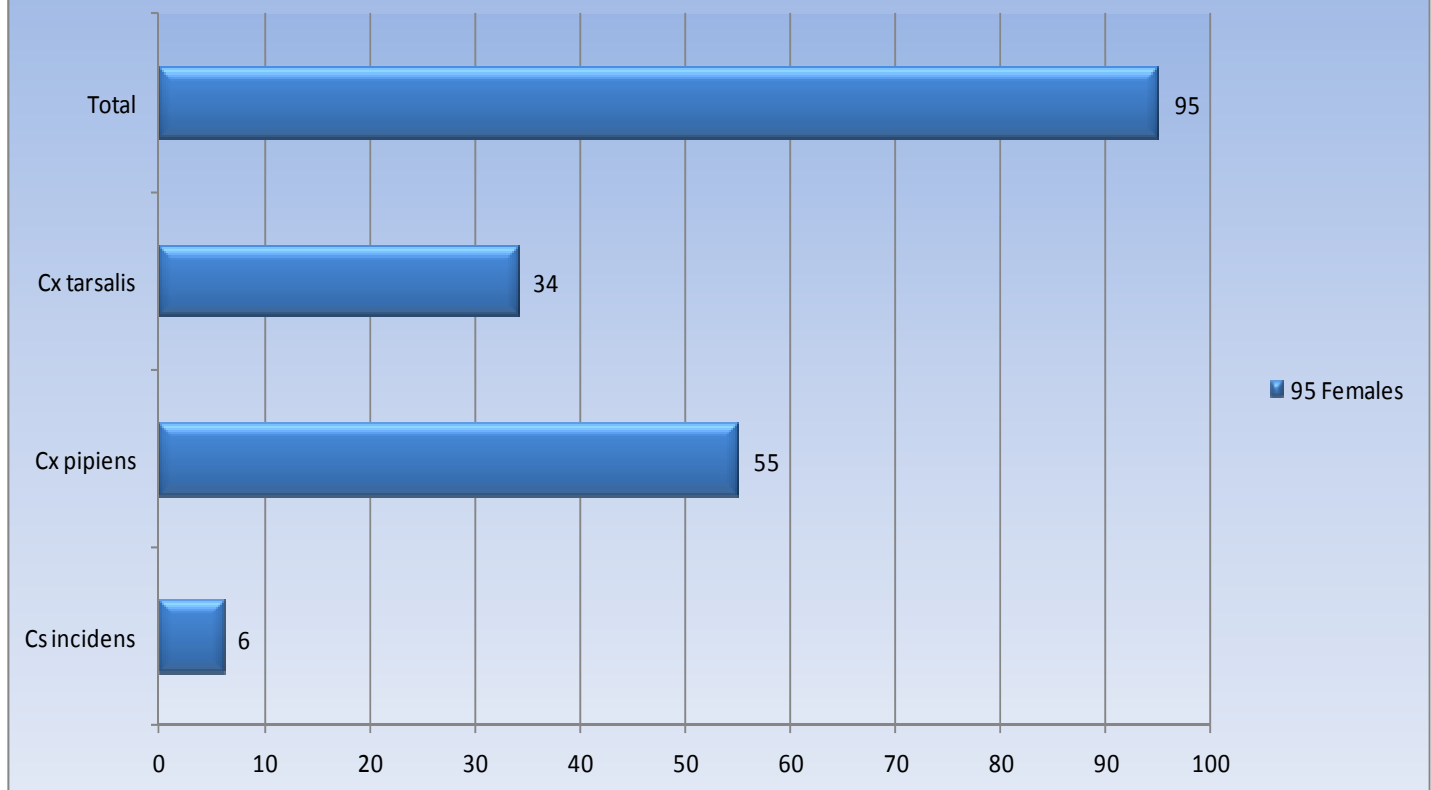


Mosquito Surveillance

In Alameda County, the District conducts mosquito surveillance and control only in the City of Albany, while the Alameda Mosquito Abatement District has the jurisdiction for the rest of the County. Carbon

dioxide baited traps (EVS trap) were set overnight (every two weeks) from April through October to selectively trap female mosquitoes seeking a blood-meal and to test for West Nile Virus WNV virus. A total of 53 trap nights were performed, and 95 female mosquitoes were captured in 2012. Due to the low mosquito catches, no mosquito pools were submitted to U.C. Davis for WNV, virus isolation. In 2012, positive WNV activities detected in Alameda County included two human cases, 15 dead birds, and one tree squirrel. None of these in Albany.

2012 Mosquito Surveillance Abundance in Albany



Left: Placing CO₂ baited mosquito surveillance trap. Center: "Dipping" for mosquito larvae. Right: "Gravid" mosquito trap to catch female egg-laying mosquitoes.



Venomous Arthropods

Venomous arthropods include insects, mites, ticks, and spiders that can sting, bite, secrete venoms, and cause allergic reactions in humans and domestic pets. The District provides identification on stinging insects and arachnids. Exclusion and least-toxic control recommendations are given to residents to avoid being bitten or stung by venomous arthropods. With yellow jackets nests and honey bee swarms, the risk of stinging increases the urgency for timely response. The District will destroy wasp 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 nests within the county parks. In 2012, the District responded to 289 venomous wasp and 309 honeybee related requests for service.

Miscellaneous Arthropods

The District responds to service requests on a variety of nuisance pests such as ants, cockroaches, flies, or fleas that infest homes and commercial facilities. Bed bugs continue to be a nuisance pest problem in Alameda County. The District responded to 203 bed bug service requests in 2012.

Although bed bugs are blood feeders, they have not been implicated as a disease vector. A bed bug bite affects each person differently. Bite responses can range from an absence of any physical signs of the bite, to a small bite mark, to a serious allergic reaction. Bed bugs are not considered to be dangerous; however, an allergic reaction to several bites may need medical attention. Nevertheless, bed bugs are serious nuisance pests and may affect the mental health of people living in infested homes. Bed bugs are difficult and challenging

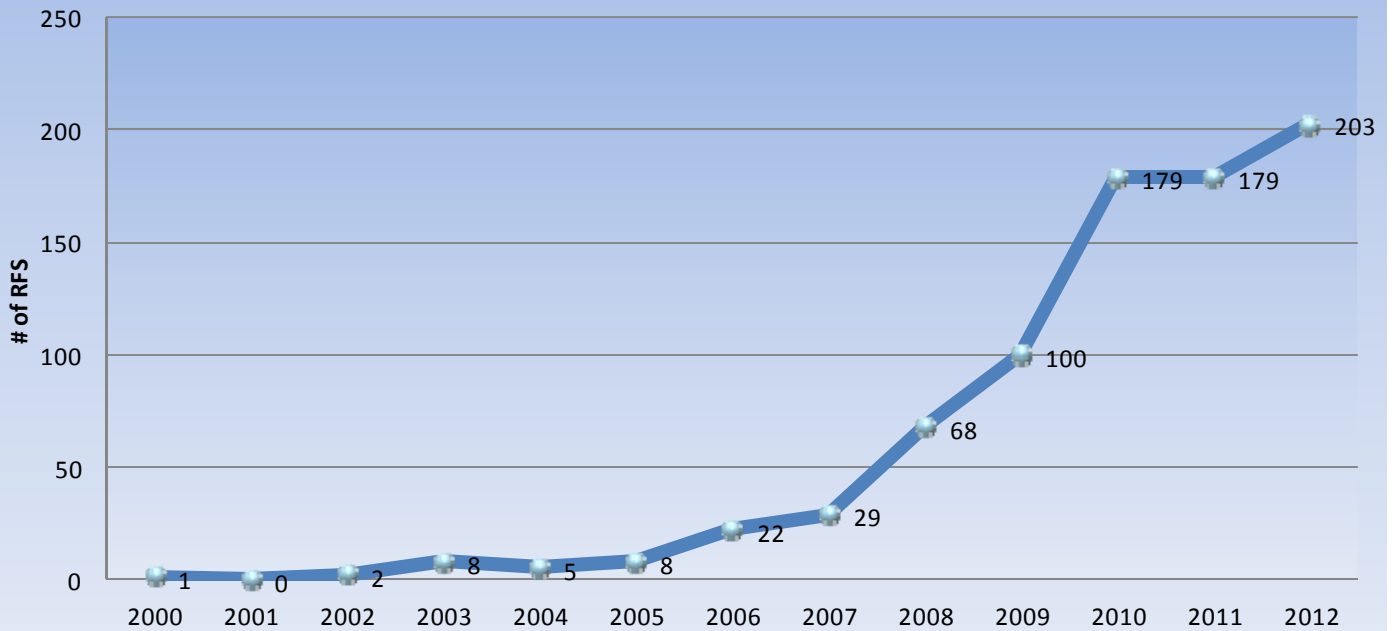
to control. Currently, there are no proven and cost effective bed bug control products and strategies. It takes a team effort (Vector Control Officers, residents, landlords, and pest control operators) to manage bed bug infestations. However, successful interventions can be attained through early detection and increased public awareness of the bed bug epidemic.

In February, the District, in partnership with the CA Department of Public Health, co-sponsored a full day bed bug workshop in Tilden Park, Berkeley. Over 100 attendees heard presentations from bed bug researchers, a legal expert, and industry representatives. The attendees came away with a greater appreciation of the monitoring and control challenges and legal implications of this pest as it continues to spread.



Adult bed bug: about 6 MM length (un-fed)

Requests For Service for Bedbugs 2000-2012



Bee and Wasp Requests for Service 2000 to 2012

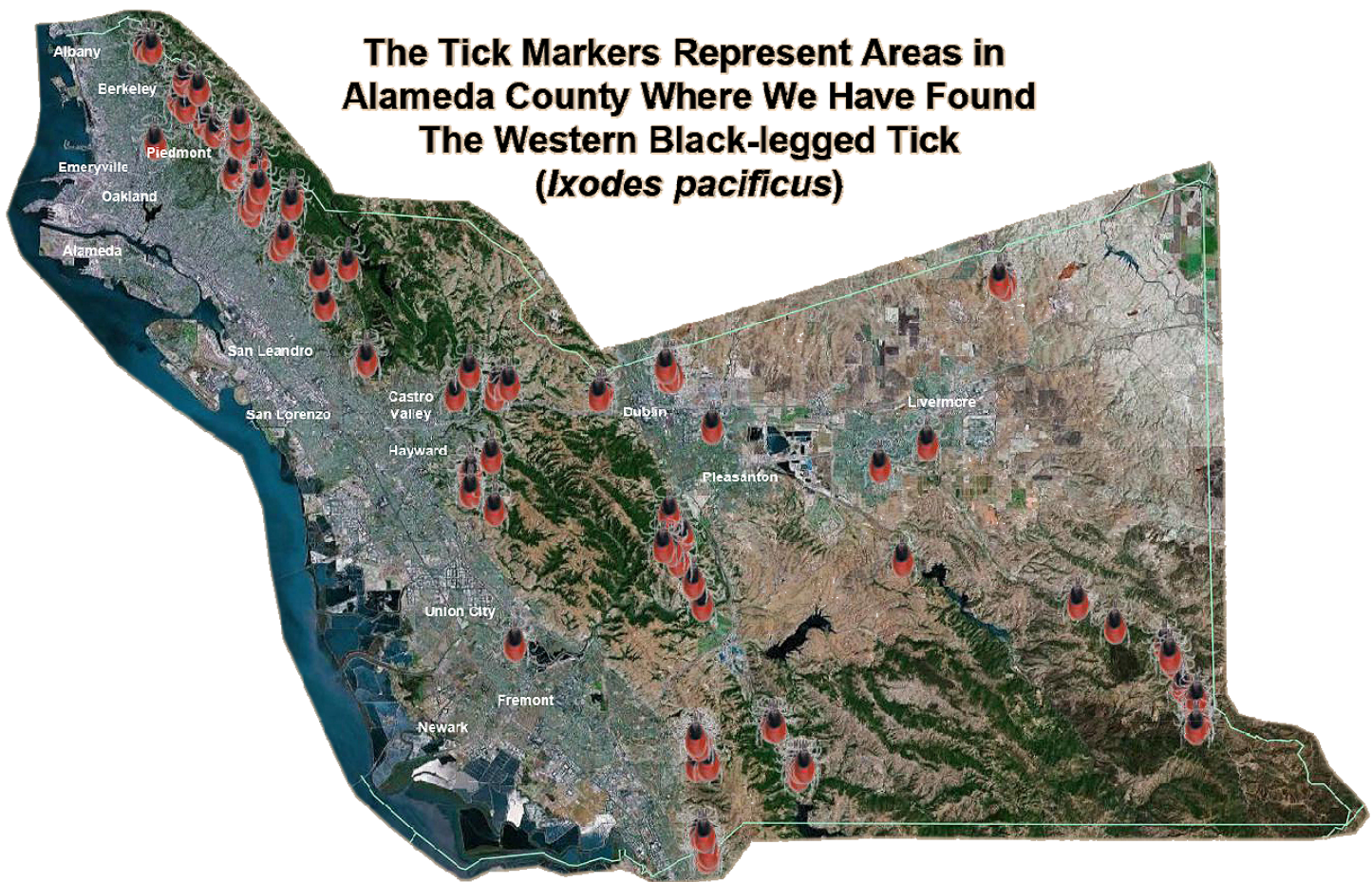


Lyme Disease

Lyme disease the most reported vector-borne disease in the United States. The District provides consultations, educational resources, and tick identification to the public. Moreover, the District has hired an experienced consultant to collect ticks from various habitats, to identify the ecological habitats in association with climate and plant communities, and to culture and isolate bacteria (*Borrelia*) for infection studies; and collaborated with University of California to conduct the molecular epidemiological studies of Lyme disease since 2009. The preliminary results and find-

ings from over 5,000 adults and nymphs of *Ixodes pacificus* ticks were being analyzed. The countywide *Borrelia* infection was 1.9%. Of these, *B. burgdorferi*, the causative agent of Lyme disease was found in 1.0% of adult ticks and 7.3% in nymphal ticks. *B. bissetti*, a rodent-borne *Borrelia*, was found in 0.1% of adult ticks and 2.8% of nymphal ticks. *B. miyamotoi*, a recently identified relapsing fever *Borrelia* which causes Lyme-like symptoms, infected 0.7% of adult ticks and 0.7% of nymphal ticks.

Results of this study will be written up, and two manuscripts will be submitted to scientific journals for publication in 2013.



Lyme Disease Cases in Alameda County 2001-2011

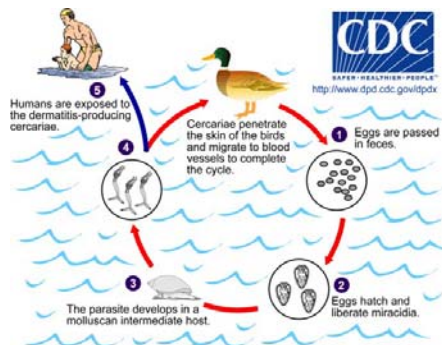
Cases	3	7	1	1	4	4	2	6	1	2	2	4
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Swimmer's Itch

For the second year in a row, no cases of swimmer's itch were reported at Robert W. Crown Memorial State Beach in Alameda, 2012. 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. 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 occurs when several factors converge at the optimal time of the summer: 1) the water temperature reaches the appropriate level for snails to reproduce and grow rapidly, 2) migrating aquatic birds infected with the parasite return from their winter habitats and 3) the frequency of swimmers and bathers peak during this period.



Skin Rash on Arm



Swimmers Itch Transmission Cycle



Skin Rash on Foot

City of Berkeley

The City of Berkeley is one of four cities in California with its own environmental health jurisdiction. In 1976, the City adopted several environmental health ordinances that provide a mechanism to protect public health from vectors. The voters of Berkeley approved Measure A in 1984 and became part of the CSA. Since the Berkeley Division of Environmental Health already had a vector control program that contains enforceable regulations for controlling rodents and other vectors, the CSA authorized a contract each fiscal year to fund the City vector program through the benefit assessment. In the years since 1984, the Berkeley vector program was not able to perform all of the Duties expected of the CSA, and CSA staff continued to provide field services to enhance their program. In 2006 the City added new staff and expanded the services to provide all vector programs within the City.

In 2012, the City responded to and investigated a total of 616 service requests and complaints in the following categories--rodents (273), vegetation overgrowth (35), sewer inspections and baiting (35), wildlife (38), arthropods (141), nuisance abatement (64), sewage (19) and general survey (11). The City participated in two community events: Solano Stroll, and Himalayan Fair.

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 the inspections.

Nuisance Abatement

Garbage, rubbish, junk cars and animal manure stockpiles 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 disease transmission to humans. The District responded to 777 service requests concerning nuisances, primarily garbage and rubbish (199, 251), resulting in 3,489 field services including investigations, progress assessments, correspondence, and compliance inspections.

Public Information and Education Activities

The District's rebuilt website received 812,261 hits in 2012; this is an increase of almost 35% over 2011! The web site provides useful information to the visitors, and provides a conduit for requests for service from the public. The staff spent many hours revising this new user-friendly interactive page and receives regular updates.

Fifty-eight days of events and presentations were provided to the public at schools and organizations, among them were at the MVCAC Coastal Region training on bed bugs, the Alameda County Public Health Department, Boys and Girls Club of Alameda, American Federation of State, County and Municipal Employees (AFSCME), Shelter-Plus Program, several schools and the Boy Scouts of America. Our County-wide Head Lice Prevention Month mailing was sent to 228 elementary schools with revised head lice policy guidance. The annual Mussel Quarantine was posted along the Alameda County shoreline—to prevent paralytic shellfish poisoning (PSP), as well as “Bay Caught Fish” advisory signage.

Community Events

The District participated in County information fairs and public venues including the Alameda County Fair, Fremont Festival of the Arts, Hayward Zucchini Festival, Tres Ranchos Boy Scout Ranch-O-Rama, Fremont and Oakland Earth Days, Dublin's St. Patrick's Day, Solano Stroll, India Festival in Fremont, Black Business Expo, Northern Alameda County Rental Property Association Expo as well as the Oakland Chinatown Lunar New Year Festival and StreetFest. Our District continues to expand outreach to the public and our ethnically diversified populations. We had several media contacts/press releases/interviews—on ticks, rabies, and bed bugs.

Public Education and Information Disclosure

The most effective way in reaching a large audience is through our web site, media contacts and event participation in events such as the Alameda County Fair and Public Health fairs. At special events, our staff interacts directly with the public through hands-on demonstrations and answer questions on pests and vector-related matters. Our Program Manager started a major push towards school presentations, and several staff are working on and giving presentations at elementary schools in Fremont. At the District office, our Vector Ecologist, Community Relations Coordinator, and management provide phone consultations on vector-related questions and onsite identifications of insects, ticks, and others.



Fremont Festival of the Arts Informational Booth 2012

Pesticide Use Summary 2012

The District participates in a countywide *Integrated Pest Management* policy set by the Board of Supervisors. The majority of pesticides applications were used to suppress Norway rats in the sewers or to destroy yellow jacket nests. Mosquito larvicides totaled less than a quarter pound of active ingredient. The total pesticide usage is listed below and is reviewed by the Alameda County Agricultural Commissioner, the Department of Pesticide Regulation and the California Department of Public Health.

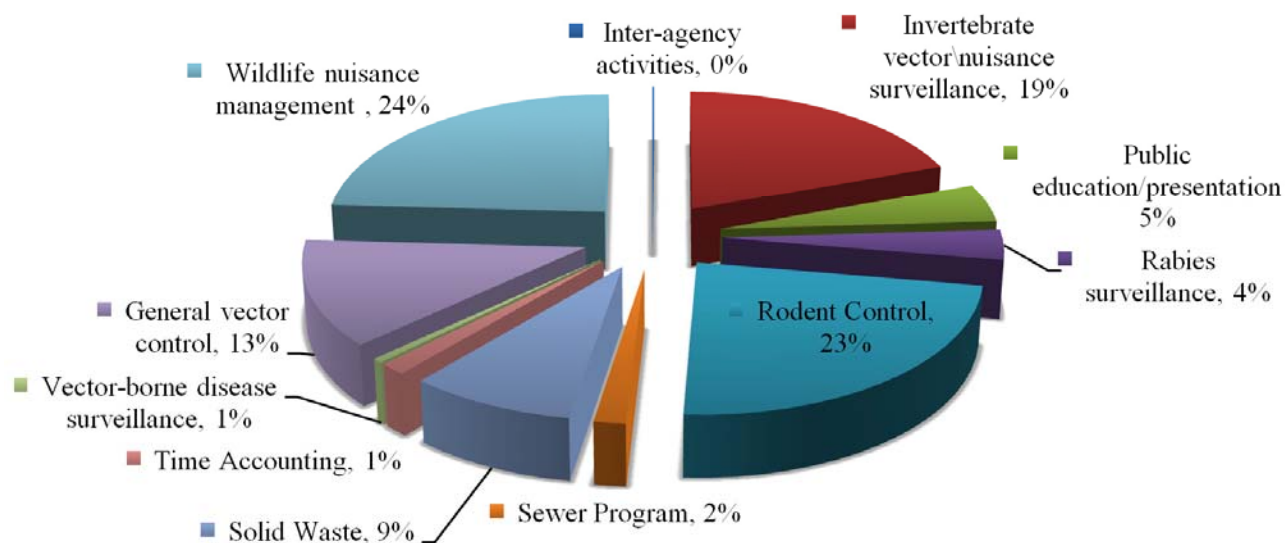
Pesticide Use ACVCSD 2012					
Pesticide	Manufacturer	Formulation	Target Pest	Amount Used	Applications
Contrac Super Blox	Bell Labs	8 oz block	Domestic Rodents	934.25 lbs	164 ¹
Maxforce Bait Station	Bayer Environmental Science	Bait Stations	Cockroaches	0.5244 lbs	8
Contrac Pellets	Bell Labs	Pellets	Domestic Rodents	0.2813 lbs	1
Ditrac Tracking Powder	Bell Labs	Rodenticidal Dust	Domestic Rodents	4.1875 lbs	11
Drione Dust	Bayer Environmental Science	Insecticidal Dust	Yellowjacket Wasps	24.0938 lbs	127
Delta Dust	Bayer Environmental Science	Insecticidal Dust	Fleas/Yellow-jacket Wasps	0.375 lbs	4
Prescription Treatment Brand P. I.	Whitmire	Aerosol Spray	Yellowjacket Wasps	12.5375 lbs	23
Wasp Freeze	Whitmire	Aerosol Spray	Yellowjacket Wasps	29.5938 lbs	25
Victor Poison-free Wasp & Hornet Killer	Woodstream	Aerosol Spray	Yellowjacket Wasps	6.25 lbs	8
Maxforce Roach Gel Bait	Bayer Environmental Science	Gel	Cockroaches	2.1672 lbs	27
Altosid XR Briquets	Wellmark International	Briquets	Mosquito Larvae	0.75 lbs	1
Contrac Blox	Bell Labs	1 oz Block	Domestic Rodents	1.5625 lbs	5

Pesticide Use by Berkeley Vector Control 2011					
Pesticide	Manufacturer	Formulation	Target Pest	Amount Used (oz.)	Applications
Talon	Syngenta	8 oz. Wax Block	Norway Rats	2,560	320 ²
Drione Dust	Bayer	Dust	Yellowjackets	5.5	11

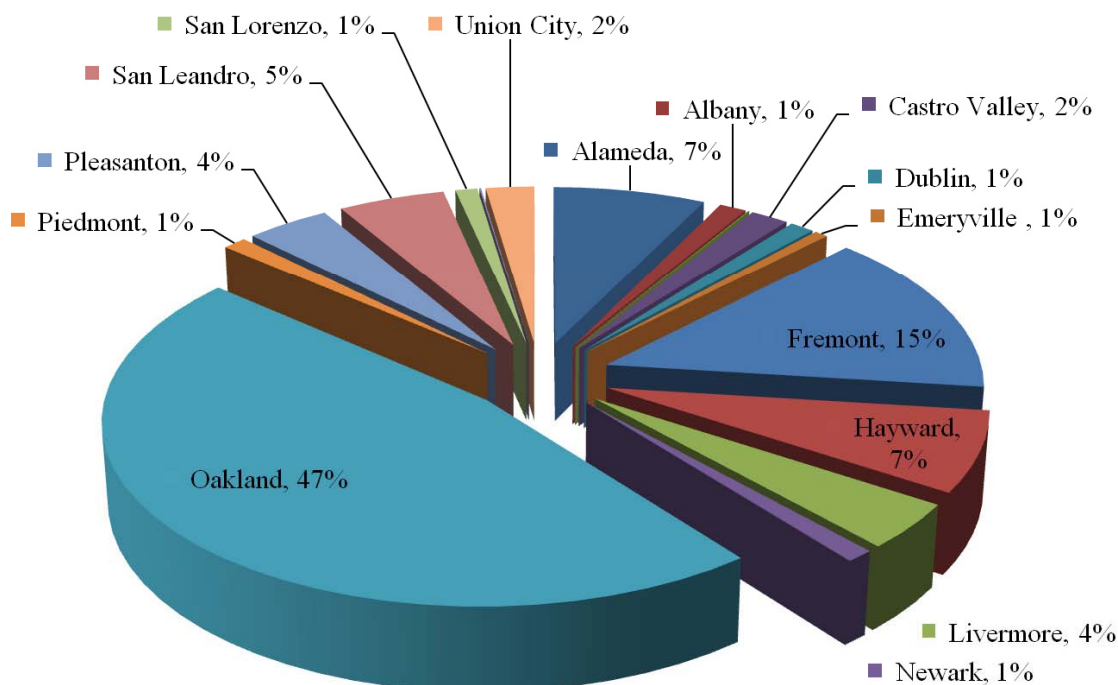
1. Applications based on cumulative per census tract

2. Applications based on each individual application

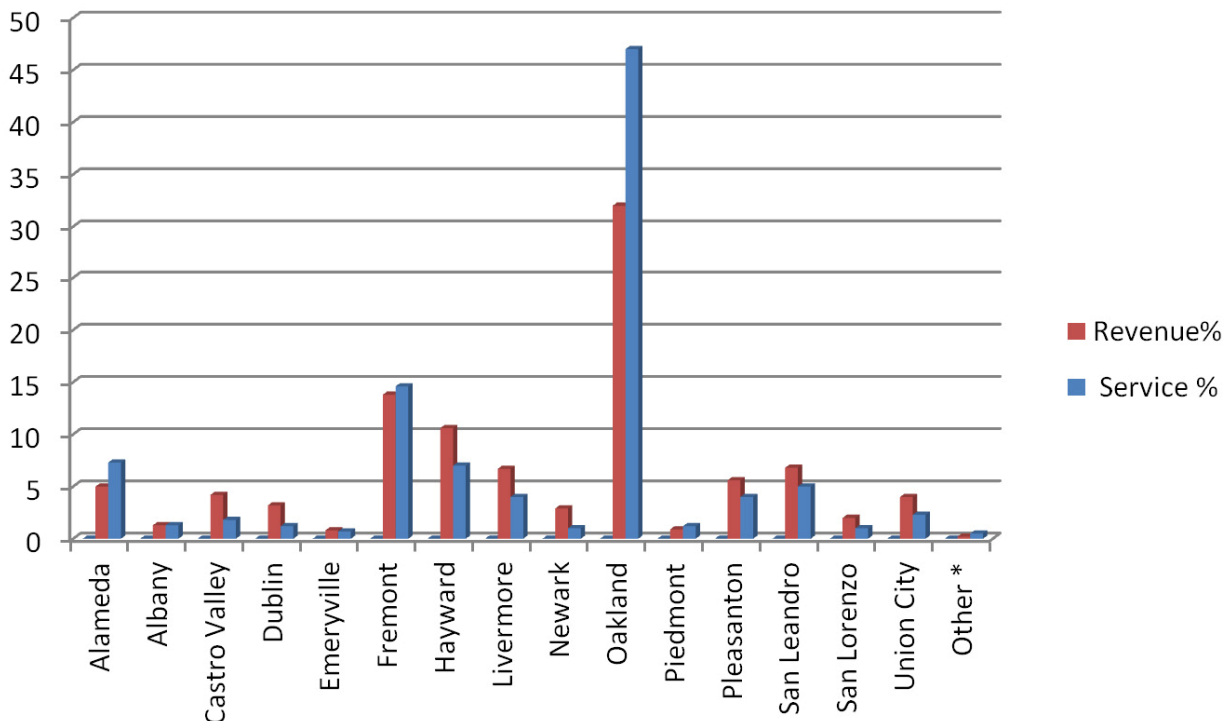
Alameda County Vector Control Services District Services by Program, 2012



Alameda County Vector Control Services District Total Services Provided to Cities, 2012



Alameda County Vector Control Services District Percentage of Service Requests and Benefit Assessment per City 2012



BENEFIT ASSESSMENT

The Board of Supervisors reviews annually 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 general county property taxes. They are subject to the same fines, penalties, and forfeiture as property taxes. The assessment charge levied against each parcel is available for review at the Vector Control Services District Office.

From 1984 to 2007, the CSA Vector Control Benefit Assessment (Initial Benefit Assessment) was based on land/property use as classified by the Assessor's Office. A basic assessment rate was established as a single benefit unit (BU), which was applied to the schedule for assessments according to land/property use.

In the Post Proposition 218 (Secondary Benefit Assessment) formulas (approved by voters in 1997), the BU rates was established on the number of people who potentially live on or work at the various types of property. The methodology determined by the ratio of population density factors in relation to the usage density for different types of property. In general larger properties such as parking lot, self storage, industrial property and golf course will be assessed in a lower BU under the Post Proposition 218 rate. The following table depicts some of the differences between the two rate calculation methods.

LAND/PROPERTY USE CATEGORIES

Property Use Categories	CSA Vector Control Benefit Units/per property type (Initial Benefit Assessment)	CSA Vector Control Benefit Units/per property type (Secondary Benefit Assessment)
Single Family Residence/Condominium	1BU	1BU/0.61BU
Vacant Land Parcel	1BU	0.25 BU
Multiple Residential Small (2-4 units)	2 BUs	0.46 BUs
Commercial, Industrial	2 BUs	0.5 BUs
Large Rural Property	2 BUs	0.08 Bus (per 10 acres)
Multiple Residential (5units +)	5 BUs	0.32 BUs
Large Commercial (Hotels, Mobile Home Parks)	5 BUs	0.5 BUs (per ¼ acre increments)

CSA VECTOR CONTROL SERVICES BENEFIT ASSESSMENTS FY 2012-2013

Use/Size	CSA Vector Control Initial Benefit Assessment	Oakland (Residence only) + Supplement Assess- ment (\$1.28)	CSA Vector Control Secondary Benefit Assess- ment
Single Family Residence/ Condominiums	\$5.92	\$7.20	\$4.08/2.49
Vacant Land	5.92	7.20	1.02
Multiple Residential Small (2-4 units)	11.84	14.40	1.88 ¹
Commercial, Industrial	11.84	14.40	2.04 ⁴
Large Rural Property (More than 10 Acres)	11.84	14.40	0.34 ³
Multiple Residential (5 units +)	29.60	36.00	1.30 ²
Large Commercial (Hotels, Mobile Home Parks)	29.60	36.00	2.04 ⁴

Notes:

1. This rate is per unit. There would be a minimum of 2 units for this category.
2. This rate is per unit. There would be a minimum of 5 units for this category.
3. A property would be charged this minimum. It would be \$.34 for 10 acres.
4. These estimates are based on per ¼ acre increments.

ASSESSMENT FOR ONE BENEFIT UNIT (BU)
(Single Family Residence - CSA Basic Rate and Oakland)
1984-2012

FISCAL	CSA	OAKLAND	OAKLAND
Year	Basic Rate	Supplemental Rate	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
07-08**	10.00	1.28	11.28
08-09	10.00	1.28	11.28
09-10***	10.00	1.28	11.28
10-11	10.00	1.28	11.28
11-12	10.00	1.28	11.28
*Includes Oakland Supplemental—Initiated 1988-1989; **Includes Initial Secondary Benefit Assessment; ***Includes Emeryville and Fremont—Annexed 2009-2010			



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