

Urban Wildlife: We are Not Going Away! (continued from page 2)

documenting this problematic perception. This is the situation; California Fish and Game does not want wildlife relocated and their position puts the kibosh on relocation. But you just want the animals gone, and don't care how? There are private companies that trap wildlife and are supposed to humanely euthanize their captures. Most city operated animal control departments do not want to have anything to do with wildlife, though there is the rare exception. We do provide technical advice to Alameda County District residents to assist them with excluding and dissuading animals from frequenting their property. When the District was voted in in 1984, wildlife control was not one of the services we agreed to provide, and we know from other organizations; the more you get involved, the more the demands are on your resources.

We give technical advice to residents at their homes, or property because of the potential for transmission of zoonotic disease, rabies being the disease of most concern, due to the fatal consequences if

exposed and not treated.

When we as a community limit the resources available to wildlife, we produce a healthier community for them as well. Just look at the negative affects of junk food consumption on humans! The food we provide is not good for the animals, and causes unhealthy crowding of animals, and raises the potential for disease outbreaks. From bird feeders, exposed garbage, handouts at fast food establishments, pet food left out at night, fruit and nut trees; with our benevolent provisioning, life is easy around humans, unless you get on our bad side by damaging our artifacts or posing a threat to ourselves and families.

By the way the stuff in skunk spray that stinks is a series of odorous compounds called thiols. Bonded sulfur and hydrogen atoms in thiols attach to the same nose receptors that sniff out hydrogen sulfide ("swamp gas"). Human noses are highly sensitive to thiols and can detect the smell at just 10 parts per billion. Skunk spray also contains compounds called



Skunks are just too cute!

thioacetates, which slowly break down into thiols. When a skunk sprays a terrier, thioacetates in the spray (and absorbed into the skin of the terrier) break down and replace the old thiols, resulting in the skunk odor reappearing on the dog. Water seems to rapidly speed the process of thioacetates breaking down into thiols, but part of the release seems to be time-sensitive. Getting a dog wet repeatedly over several days will not "drain off" all the thioacetates. (Skunk information from: <http://www.terrierman.com/skunk.htm>)

Rats: You Have to Love Them, Hate Them, and Honor Them! (continued from page 3)

rats living in the sewer systems. In ideal circumstances, this would not be a problem, but our old and aging infrastructure and sewer systems allow these rats to exit and bedevil our neighborhoods, and businesses. The billions of dollars needed to repair these old sewer systems never seem to be available.

If you put your home up for sale and the diligent termite inspector finds evidence of rat or mouse infestation, their contaminated nesting materials and wastes will need to be cleaned up, and assurances that the rats are eliminated from the structure. This can result in the expenditure of hundreds or thousands of dollars!

One well-intentioned human activity can cause a large population of roof rats (*Rattus rattus*) to crop up in a neighborhood. Bird feeding! Birdseed is a preferred food for roof rats, and they will build up large populations adjacent to these feeders. A spill-

proof, or rat-proof bird feeder is non-existent. When twenty pounds of birdseed can be purchased for fewer than four dollars, bird feeding seems like an inexpensive hobby that will give you the opportunity to enjoy a variety of visiting birds, and some cute nocturnal visitors! The rat problem can become so bad that it becomes a neighborhood nuisance, and must be stopped to give the rat population an opportunity to be controlled, or reduced, but never eliminated.

Rats have contributed to health science research more than any other animal. Some of our experimentations on these small mammals are painful, and result in mortality to the rats. We should honor their contribution to our wellbeing, and the scientific breakthroughs in pharmaceutical research. The lab rat is not in any enviable position, but we do owe these bright and interactive creatures a debt.



The Variety of Australian Blue Rats Image from: <http://falcon.roswellpark.org/RoswellParkCancerInstitute>



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Alameda County Vector Control Services District



Our Mission:
 Prevention of Vector Borne Disease in Alameda County

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Why Control Rats in the Sanitary Sewer System?

Norway rats established themselves (with human complicity) in our sanitary sewers decades ago. These private runways and burrow-like tunnel systems are conducive to *Rattus norvegicus* activities. Their presence in the sewer system in itself is not much of a problem; rather the rat's ability to enter and exit the sewer system at will is the main problem. Given the limited resources available in the sewer system, their population would be self-limiting.

Unfortunately, our ageing, and in many cases decaying sewer systems are rife with breaks, separations, open sewer clean-outs, and in some situations totally collapsed

sewer lines. The result of the Norway rats being able to journey to the exterior environment is to provide these resourceful opportunists with extra food and habitat, and a refuge back into the sewer system in times of stress.

Norway rats are generally, burrowing rats that will dig burrows and live in the ground, or under refuse and junk. This characteristic of theirs make their presence obvious to the practiced observer, and thus comparatively easy to control. I say comparatively in reference to the roof rat, which is virtually impossible to eliminate from the neighborhood where foliage is available.

Norway rats are also

found in shoreline rip raff, and can be difficult to control in some of the shoreline situations due to the high level of food available, and the strong harborage the rip raff provides. By nature, the Norway rat is aggressive, bold, and feisty, with a societal structure that serves it well. Roof rats and Norway rats rarely overlap habitat, and Norway rats will prey on roof rats and drive the more furtive and less aggressive roof rat out of their territory.

Some older sewer systems like in Sacramento have the storm-water sewer system directly connected to the sanitary sewer. This sets up a scenario that allows Norway

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Rabies in Alameda County?

Rabies is a fatal disease if not treated at the time of exposure. Most of the recent human rabies cases have been caused by rabies virus acquired from bats. Awareness of the facts about rabies can help people protect themselves, their families, and pets.

In California from 1996 to 2005 rabies has been

detected in 2,941 animals, with 5 fatal human cases. Bats are the leader with 1,600 cases, and skunks are slightly behind with 1,239 cases. The next closest runner-up is the fox with 48 cases, and dogs and cats are tied with 18 cases each. During this same time period 194 rabid animals were detected in

Alameda County (134 bats, 56 skunks, 2 foxes, and two opossums).

Avoid contact with wild, or stray animals, make sure your pets are vaccinated. Report strange wildlife activity, and all animal bites, or scratches. Rabies virus is usually transmitted by the saliva of a infected animal; don't kiss that bat!

Rats: You Have to Love Them, Hate Them, and Honor Them!

If you have ever had a pet rat, you know that you had a unique and loving pet. Pet rats form a strong bond with their person and pine for you when you are absent, and want to interact with you when you are with them. The down side is that most pet rats only live about two years.

There are organizations like the "Rat, Mouse, and Hamster Fanciers" (RMHF) Society based in Lafayette, here in the Bay Area. There are other such organizations around the world, whose members find fancy rats to be a rich component of their lives. They have shows and competition and judging in the various categories,

much like cat or dog shows. The next show is coming up on October 3rd and details can be found at their web site: (<http://www.ratmousehamster.com/rmhf/rmhf.htm>).

Our local RHMf has 19 different categories of rats from satin, rex, longhaired and hairless. Most pet rats are of the species *Rattus norvegicus*. The last event I attended at the Alameda County Fair, I adopted a young female "amber" rat. This small animal, Fey Nin, was a dear friend for almost three years. She fit well in my pocket and was conducive to short trips, and my cats, and dog eventually accepted her as part of the family.

The two major species of rat in our area, *Rattus rattus* (roof rat), and *Rattus norvegicus* (sewer rat) are immigrants and worldwide travelers. If humans traveled there, these rats are likely to be there. With worldwide commerce, these rats have an even greater opportunity to travel. We have even brought these rats to outer space on the space shuttle, and I wonder if any of them hitched a ride to the moon when we landed there? There are many other species of rat, some native, and others share our human environment and are well traveled.

On the other hand, rats have cont. pg 3

Bird Flu, what will we do? CDC Description

Avian influenza is an infection caused by avian (bird) influenza (flu) viruses. These influenza viruses occur naturally among birds. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. However, avian influenza is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them.

Infected birds shed influenza virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated secretions or excretions or with surfaces that

are contaminated with secretions or excretions from infected birds. Domesticated birds may become infected with avian influenza virus through direct contact with infected waterfowl or other infected poultry, or through contact with surfaces (such as dirt or cages) or materials (such as water or feed) that have been contaminated with the virus.

You may have noticed that birds are indiscriminate when eliminating their wastes. This behavior is conducive to the spread of pathogens. You deposit your wastes in a warm pond, and float around and feed in the pond. This is a great way

to grow pathogens in this nutrient rich medium.

When we have our yearly influenza season, you only have to detect which birds are migrating from which general flyway! This is an over simplification of the environmental and biotic variables, but the fact remains; birds are capable vectors of disease, and with their mobility, are an ongoing threat to human health.

The worldwide bird flu human case count since 2003 has now reached 230 avian flu cases with 132 fatalities, according to the WHO. 7.14.2006

Why Control Rats in the Sanitary Sewer System? (Continued from page 1)

rats to come and go as they please. This is not the case in Alameda County, but with the widespread decomposition of sewer laterals, connectors and mains, we have a problem.

Part of our response to rat problems in Alameda County is to inspect sanitary sewers for signs of rat activity, and conduct rat suppression as needed. Often, if we receive a 'request for service' related to Norway rats, and if it is a large infestation, with sufficient investigation this problem can usually be traced to a damaged sewer line. Conversely, if we detect heavy rat activity during routine

sewer access opening inspection, it is inevitable that there is a broken or open sewer line nearby that allows rats to enter and exit at will. Our typical response is to place rodenticide into the access opening to control the immediate population, and canvassing of the adjacent neighborhood for breaks and burrows.

The two most affective tools we have to detect broken or open sewer lines (besides visual observation) is a 'dye test' or a 'smoke test.' The dye test entails the use of a powerful fluorescein dye to test the suspected breaks in the lines. This is done at burrows, often adjacent to residential

sewer laterals, or cracks or breaks in concrete adjacent to sewer laterals. The powdered dye is placed into the suspect opening and then water is run into the burrow for several minutes to allow the flushing of the dye downstream. We observe the results of this test at the sewer access opening downstream from the dye placement. If there is a break, the dye will show up within several minutes.

The second valuable test is the 'smoke test' that entails forcing a penetrative non-toxic smoke into the sewer system, and observing the adjacent area for smoke coming out of cracks or openings in the ground. This

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besieged humans for as far back as we can track our history. They compete for our resources and survive very well off of our leavings, and excess food we provide. They can transmit a long list of diseases, with the bubonic plague one of the most notorious, which killed millions in the 'middle ages'. It must be noted that this disease transmission was not malevolent, and the plague infected fleas that vectored the plague, were just another part of Earthly life.

The fact is that rats have been responsible for health and economic damage calculated in the millions of lives and millions of dollars. Every year rats damage our artifacts and food supply on an enormous scale. There are an estimate 250 million rats living in our urban centers and 1.4 bil-

lion rats doing their rat thing at chicken farms. Agricultural grain crop suffers about \$19 billion per year in damage (USDA), and the domestic side may be more than that. Structural damage to homes, businesses, neighborhoods, and the dollars spent on rat control through pest control companies, public agencies, homeowner purchase of rat control products all add up to a significant economic impact from rats.

A case in point is the damage rats can do to your automobile. Recently a resident of Pleasanton told me of some car problems she was having—the car would not start. She had it towed to the car dealer, and their maintenance mechanic found that roof rats had moved into the dash area of their car and chewed up the

ribbon wiring to make nesting material, and maintain their oral hygiene. The electronics and configuration of modern automobiles are such that this type of nest making can result in thousands of dollars of damage and can total a car out (being more expensive to repair than the vehicles fair market value). This and the accompanying contamination of the ventilation system reduce the desirability of the affected car. This is not an isolated incident.

One unnerving event that occurs to the unfortunate resident is having a rat come up the toilet. Just imagine setting down and then you hear this commotion, and look down and there is a rat swimming below you! In many of the older, flatland areas of the Bay Area, we have Norway (cont. page 4)

Why Control Rats in the Sanitary Sewer System? (Continued from page 2)

test is of great value when a large area (block size) needs to be tested because of high numbers of Norway rat complaints. If we had sufficient resources, we could check many blocks in the older neighborhoods, and make a real dent in the sewer rat population.

If either of these tests are positive the best follow-up would be to have the line inspected with a video cable camera system. We do not have this

capability, but most city sewer-maintenance departments, and many private sewer repair companies have these devices. The camera is usually placed into the sewer line at the sewer clean out and ran all the way to the main. This will give you a visual record of the line condition, and assist the property owner in contracting the repair work.

We do not know the end result of con-

fining Norway rats to the sewer system. This would leave open the niche to roof rats, and they would eventually move in, and then we would have to focus on pest-proofing of individual structures as we do in other roof rat infested areas. The point being that Norway rat infestations are a symptom of the larger infrastructure problem that can be resolved.

Urban Wildlife: We are Not Going Away!

Communication, the time held precursor to problems, and our miscommunication between humans and urban wildlife is no different.

Most people like animals and do not have overt problems with them, even living in our neighborhoods. But, when our property is damaged, or we perceive a threat to ourselves or our family, we often sing a different tune!

The miscommunication comes with our providing food, water and harborage to our local foraging wildlife. They instinctively know we are leaving out the pet food just for them! Living near humans is easy pickings, we always seem to leave our bounty for every passing animal!

On a daily basis we are communicating to urban animals that we have food for them. There are some areas like in Pacific Grove, where there were several members of the community that were feeding the raccoons on purpose. This probably never would have become newsworthy except one child ate some of the raccoon scat and acquired the devastating raccoon roundworm (*Baylisascaris procyonis*). These worms will infect humans and migrate throughout our body, and often enter neural pathways, resulting in permanent damage to the infected individual.

What should we do? Are these urban animals a problem? Some people think so, and we receive the phone calls



Thanks for the great dinner!

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