

Rat Academy

Presented by: New York City Department of Health and Mental Hygiene
(NYC Health Department)

Sponsored by: [program inserts sponsor for each academy]

Overview



- Rat biology and behavior
- Why rats thrive in New York City (NYC)
- What you can do to control rats
- What the city does to control rats
- Resources

Rats in NYC

- The only type of rat found in NYC is the Norway rat.
- Rats live mostly outdoors in earthen burrows.
- Rats thrive in densely populated areas.
- Rats benefit from living among us, relying on our food and garbage.



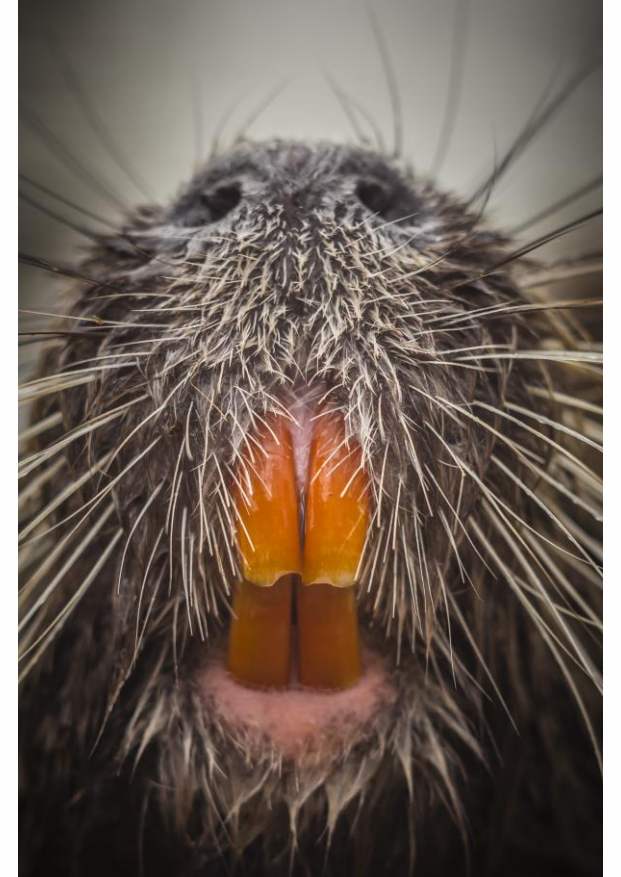
How Big Are Norway Rats?



- Usually around 1 pound
- Bigger than mice, but not as big as a cat or dog
- Rats puff out their fur to appear larger when frightened.
- Rats can squeeze through very tight spaces.

Rat Characteristics

- A rat's teeth can gnaw through anything softer than steel, including cement, wood and aluminum.
- Rats gnaw to find food, water and shelter.
- Rats gnaw at 10 bites per second.
- Rats cause millions of dollars in damage every year by gnawing.



Rat Characteristics

- Rats have poor eyesight and can only see up to 6 feet away.
- Rats communicate through sound and smell.
- Rats travel on linear paths.
- Rats secrete an oily substance called sebum that is often left on the surfaces they travel along.
- Rats primarily run, dig and gnaw to get around but can climb when necessary.



When Are Rats Active?



- Rats are mostly active at night but can also be seen during the day.
- Smaller, younger rats will often come out to look for food during the day to avoid competing with the larger, more dominant rats at night.

Rat Reproduction

- Rats live for about 12 months in the wild.
- The average female rat gives birth to eight to 12 pups per litter.
- Rats can have four to seven litters in one year.
- Pups mature in two to three months.
- A female rat can produce a total of 84 offspring in one year.



What Do Rats Eat? They Will Eat Anything!

- A rat's diet requires proteins, carbohydrates and fats.
- Garbage and litter are a rat's main source of food.
- A rat consumes 1 ounce of water and 1 ounce of food per day.
- Rats will eat dog feces, which has some undigested food in it.

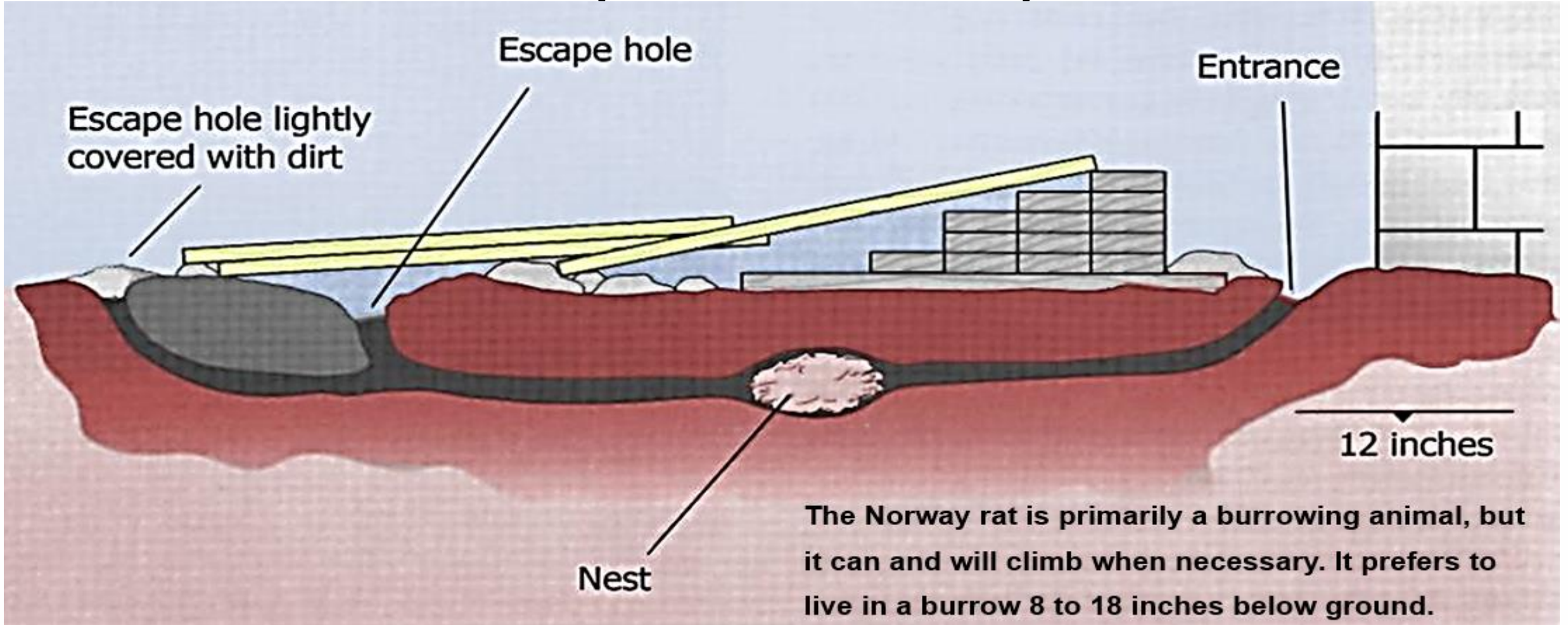


Where Do Rats Live?

- Rats live in holes in the ground called burrows.
- Rats prefer earthen spaces but will also live in human-made spaces.
- Rats usually live within 100 feet of a reliable food source.
- Rat burrows can be under bushes, plants, clutter or garbage.
- Active rat burrows can each contains between one and 12 rats.



Norway Rat Burrow System



Why Are There So Many Rats in NYC?

- Rats are a lot like us – their priorities are food, housing, family and a short commute.
- In NYC, there is plenty of food, water and shelter, which allows rats to thrive.



Rat Urine and Leptospirosis



- Leptospirosis is a disease caused by *Leptospira* bacteria in the urine of infected animals.
- When they pee, the bacteria can contaminate soil and water and can survive for several weeks in moist, warm areas.
- In NYC, rats are the most common source of the bacteria.
- Most infections occur from human contact with the urine of an infected animal.
- Bacteria can enter the body through the eyes, nose, mouth or through an open wound. Leptospirosis is not usually spread from person to person.
- Leptospirosis is rarely found in NYC, but the number of people diagnosed in the city has increased in recent years.

Leptospirosis Prevention

- The best way to prevent leptospirosis is to avoid contact with rats and their urine.
- You can prevent leptospirosis by following these tips:
 - Avoid places where rats may have urinated.
 - If you cannot avoid areas where there are rats, or if you are cleaning areas where rats have been, use a solution of 1 part bleach and 10 parts water to disinfect the area.
 - Protect yourself from contact with rat urine by wearing rubber gloves, especially if you have cuts or sores on your hands or arms.
 - Wash your hands with soap and warm water after any contact with areas where rats may live.
 - Always wear shoes whenever taking trash out.

Why Are There So Many Rats in NYC?



- Garbage is a feast for rats.
- Each household in NYC produces 8.4 pounds of food waste every week.
 - That amount can feed 19 rats.
- When we leave garbage bags outside overnight or toss food into garbage cans that rats can access, we are essentially delivering food directly to the rats.

Why Are There So Many Rats in NYC?

- Restaurants, food carts or trucks, and other dining establishments attract rats.
- NYC businesses that sell food must clean daily.
- Food waste improperly stored on the curb feeds rats.
- Grease stains on the sidewalks and food odors also attract rats.
- Outdoor dining is particularly advantageous to rats because there are more areas where grease and food waste may accumulate outdoors.



Why Are There So Many Rats in NYC?

- NYC has many parks and green spaces.
- Parks with high foot traffic are vulnerable to rats because of food litter, dog waste and people feeding pigeons.
- Rats prefer densely planted areas.
- Green spaces with overgrown vegetation provide shelter and soil for burrowing.



Why Are There So Many Rats in NYC?

- There is a lot of infrastructure in NYC that is not properly maintained that attracts rats.
- Rats can also burrow into concrete and stonework, such as:
 - Hollow sidewalk voids
 - Gas, electric and cable service lines
 - Sewers
 - Building foundations
 - Retaining walls



Why Are There So Many Rats in NYC?



- There is a lot of construction in NYC.
- Myth: Construction causes rats to come out from underground.
- Fact: Construction sites that are poorly managed are at high risk of rat activity due to:
 - Clutter, which can help hide signs of rat activity
 - Litter, which can provide food and nesting materials
 - Construction debris, which provides shelter

How Can We Get Rid of Rats?

- Ineffective ways to get rid of rats:
 - Bait with poison
 - Call an exterminator
 - Get a cat
 - Use rat terriers, possums or hawks to hunt them out



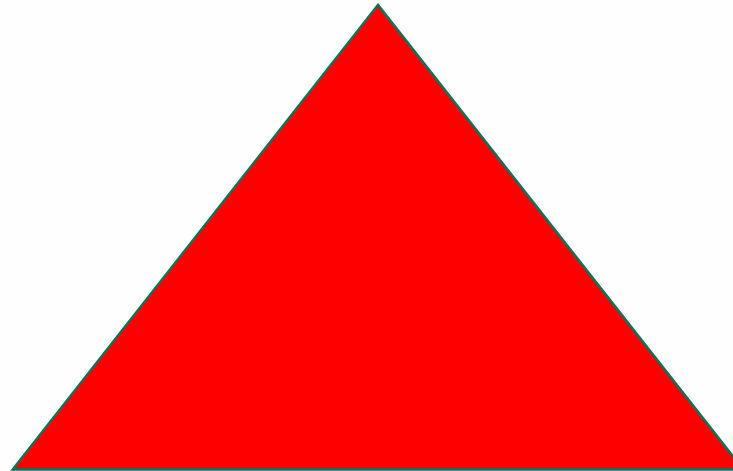
How To Control Rats

- Rats breed faster than we can get rid of them with poison, traps and predators.
- If there is shelter and a continuous food and water source, then rats will continue to thrive and reproduce.
- The only way to get rid of rats is to starve them and deny them shelter using integrated pest management practices.
- There is no shortcut.

The Triangle of Life

Food: garbage, litter, grease stains, dog feces, animal feed

Water: sewers, sprinklers, gutters, pooled water



Shelter: earthen spaces, urban infrastructure, garbage placement areas, overgrown vegetation, cluttered areas

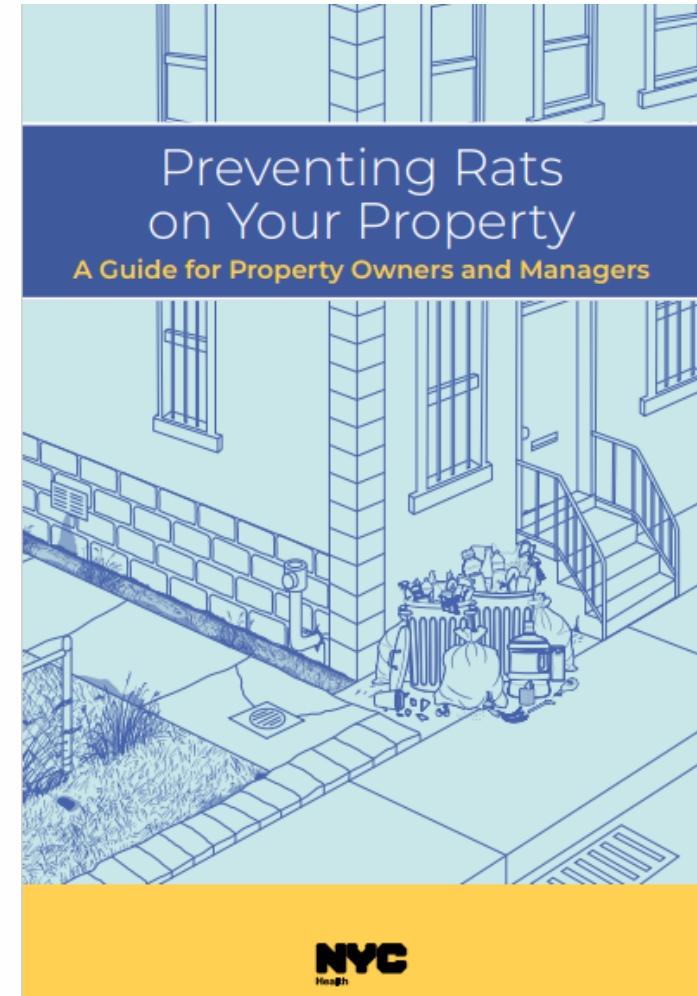
Integrated Pest Management (IPM)

- Disrupt the triangle of life to make an impact on reproduction.
- **Prevention:** Reduce or eliminate factors contributing to rats.
- **Observation:** Inspect and document rat activity.
- **Intervention:** Make treatment decisions involving chemical and non-chemical methods.
- **Evaluation:** Assess the effects and efficacy of treatments.



What Can You Do To Manage Rats on Your Property?

1. Look for rat activity.
2. Clean up.
3. Starve rats out.
4. Keep rats out.
5. Use targeted treatment.
6. Work with a pest control company.



Step One: Look for Rat Activity



- Rats leave behind plenty of evidence of where they have been, such as:
 - Live or dead rats
 - Burrows
 - Holes and gnaw marks
 - Runways (worn-down paths) or sebum trails
 - Droppings and urine
- Look for conditions that are attracting them:
 - Food
 - Water
 - Shelter

Step One: Look for Rat Activity

- Seeing live or dead rats indicates that rats are living in the area.



Step One: Look for Rat Activity

- Look for gnaw marks on:
 - Wooden surfaces (such as bases of doors and stairs)
 - Building edges
 - Plastic items (such as garbage cans, bags and flowerpots)



Step One: Look for Rat Activity

- Burrows are holes 1 to 4 inches in size, in dirt or concrete, with smooth edges, often including both an entrance and exit. They can be found under bushes, plants, clutter and garbage.

Earthen
burrow



Structural
burrow

Step One: Look for Rat Activity

- Rats repeatedly run along the same paths, creating worn-down paths in grass called runways.



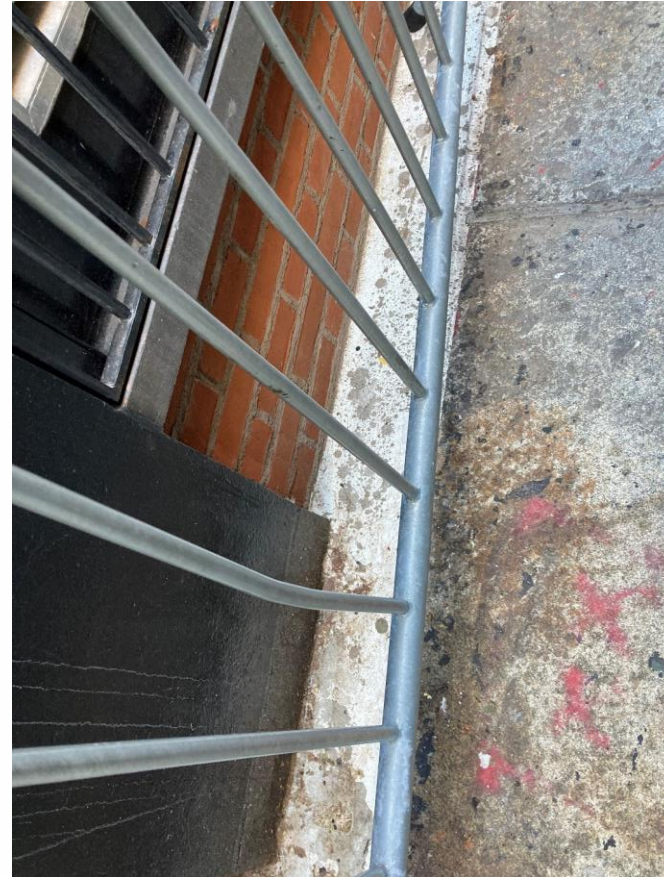
Step One: Look for Rat Activity

- Rats repeatedly run along the same paths, leaving dark greasy track marks.



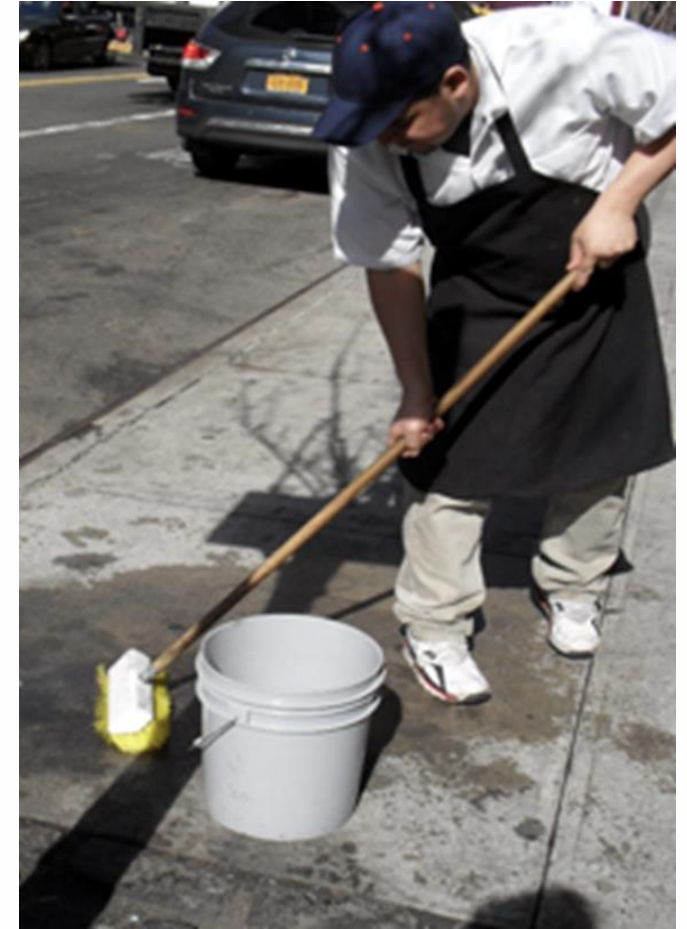
Step One: Look for Rat Activity

- Rat droppings are different in size and shape from mouse droppings – they are about the size of a squashed raisin, dark brown and often found near garbage.
- Rats can communicate through the scent of their droppings and urine.
- Old droppings will still carry a scent.



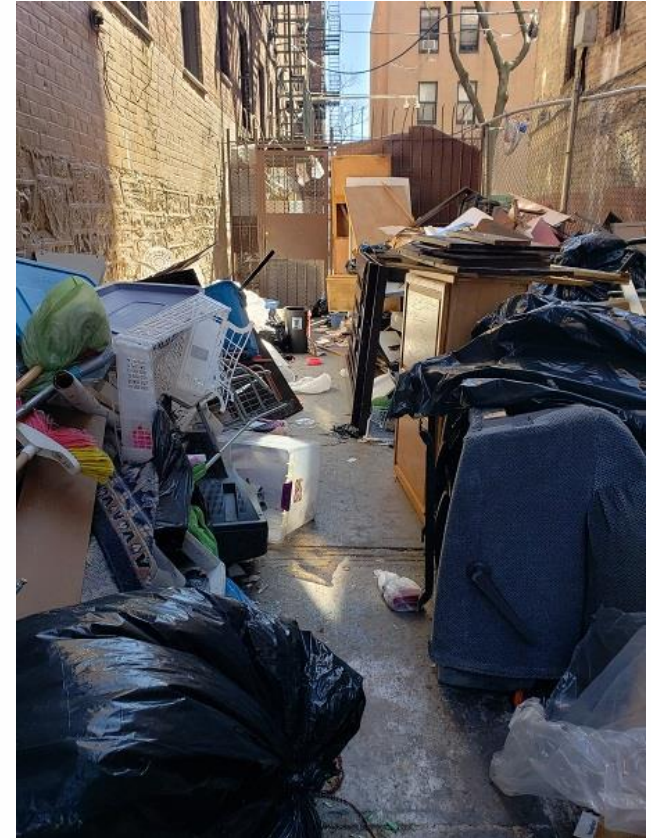
Step Two: Clean Up

- Rats communicate and attract each other through urine and droppings.
- Cleaning up will disrupt their communication.
- Clean up grease, stains and spills.
- Pick up after your dog.
- Clean dropping- and urine-affected areas, such as sidewalks and garbage placement areas, with a mild bleach solution (1 part bleach and 10 parts water) to sanitize, destroy scent trails and disrupt communication.



Step Two: Clean Up

- Clutter gives rats lots of places to hide, sleep, nest and reproduce.
- Clear your yard, basement and storage areas of clutter.
- Keep items off the ground and away from walls and fence lines.
- Leave enough space for monitoring and cleanup.



Step Two: Clean Up



- Rats often burrow under dense bushes and plants.
- Control weeds, shrubs and bushes.
- Avoid dense, low-lying planting such as ivy, liriope and pachysandra.
- Trim plants to keep them at least 1 foot off the ground, and keep space between plants.
- Use fresh mulch and landscaping pebbles.
- If using planters, reduce soil depth.

Step Three: Starve Rats Out

- Use hard plastic or metal cans with tight-fitting lids and no cracks or holes.
- Keep your garbage cans clean.
- Line your cans with garbage bags.
- Rinse recyclables before putting in cans.
- Have enough garbage cans to hold all trash being produced between pickups.
- Bring garbage cans and bags to the curb as close to pick-up time as possible.
 - For setout times, visit nyc.gov/setouttimes



Step Three: Starve Rats Out

**Feed a pigeon,
feed a rat.**

Do not feed birds or other wildlife.
If you do, you're helping to feed rats too.



Let's make NYC clean and rat-free.

For more information, visit nyc.gov/rats.

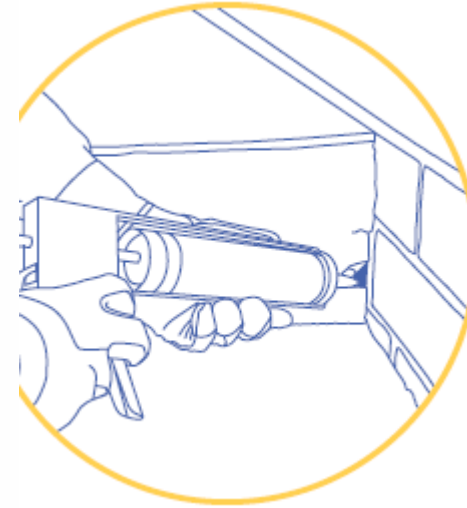
NYC
Health

- Keep food away.
- Minimize and separate food waste:
 - Recycle
 - Compost: nyc.gov/compost
- Do not put food out for birds, squirrels, racoons or other wildlife.
- Supervise any outdoor feedings, such as for feral cats or outdoor pets, and clean up afterward.
- Keep areas around trees and earthen spaces free of litter and garbage.

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Health

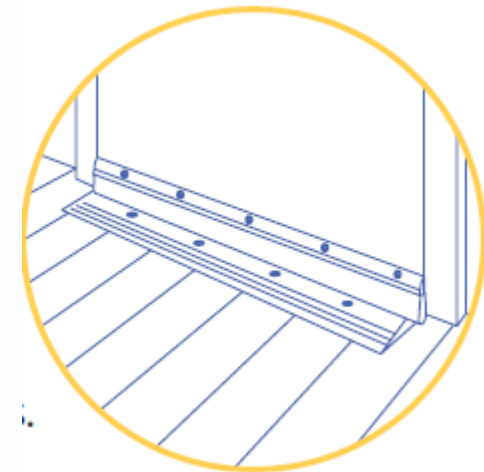
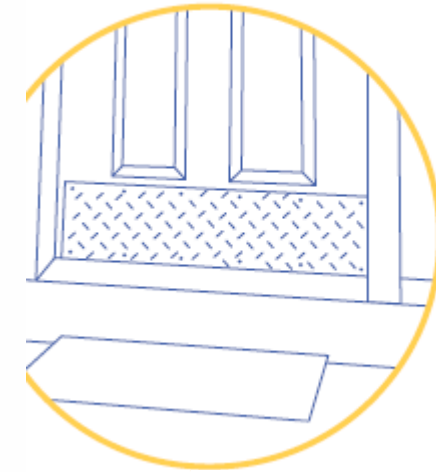
Step Four: Keep Rats Out

- Inspect for holes and cracks in and around:
 - Foundations
 - Walls
 - Floors
 - Undersides of doors
 - Windows
 - Where pipes enter your home under sinks and for heating
- Seal cracks and small holes with caulk or roofing cement.
- Seal pipes with escutcheon plates and check for leaks.



Step Four: Keep Rats Out

- Close window gaps with metal flashing.
- Put screens on vents, especially on lower floors.
- Close gaps under doors with rodent-resistant metal door sweeps, and use kick plates where rats are gnawing.
- Use heavy-gauge sheet metal between foundations and the ground.
- Keep gaps to less than a quarter inch.



Step Four: Keep Rats Out

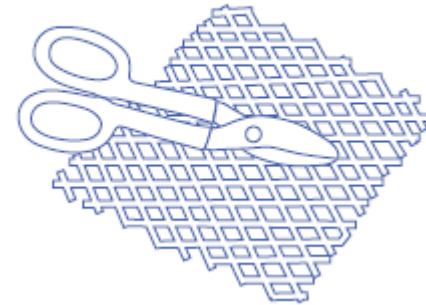
- Close inactive burrows.
- Cave in the burrow using a hand shovel or gardening hoe or by stomping with a heavy boot.
- Discourage burrowing by filling landscapes with pebbles.
- Do not place a board, rocks, bricks or bottles over rat burrows or pour any liquid into a burrow.



Step Four: Keep Rats Out

- Fill large gaps and holes.
- Use a layering method:
 - Mortar
 - Ready-mix cement
 - Stainless steel or copper mesh
 - Foam
 - Spackle
- Cover floor drains and vents with heavy-duty metal screening secured with masonry nails or cement.

Tin snips and hardware cloth



Step Five: Targeted Treatment

- Rodent bait is an effective way to wipe out rats, but when garbage is easily accessible, rats do not take the bait.
- Rodent baits must be applied by licensed professionals.
- In New York State (NYS), pest control professionals must be licensed by the Department of Environmental Conservation.
- To get rid of rats, you must choose the right company, be clear about what you want done and monitor performance.



Step Five: Targeted Treatment

- Trapping steps:
 1. Place kill side of the trap next to the wall.
 2. Leave trap unset and with food bait so rats get in the habit of visiting.
 3. After a few days, set the trap.
 4. The same trap can be used multiple times.
 5. Wear gloves and dispose of dead rats in a plastic bag. Place the bag in a garbage can outdoors.



Step Six: Working With a Pest Control Company

- Only professionals licensed by NYS can apply pesticides in commercial and multiunit buildings and public spaces in New York. To get rid of rats, you must choose the right company, be clear about what you want done and monitor how they do.
- How to find the right company:
 - Ask your neighbors and friends for referrals. If your building has rats, nearby buildings may as well.
 - Consider working with your neighbors to hire the same pest control company.
 - Look online for companies offering integrated pest management services. These companies are more likely to inspect, monitor, and make recommendations and repairs.
 - Make sure the company is licensed with the NYS Department of Environmental Conservation. To check, visit dec.ny.gov and search for **pesticides management**.

Step Six: Working With a Pest Control Company

- Choosing a pest control company
 - A good company will:
 - Employ qualified, well-trained exterminators who can educate you on how to prevent rats.
 - Inspect your property before giving you a price quote and base quotes – not flat fees – on inspection findings.
 - Make referrals for structural repairs, if required.
 - Use a variety of products and methods to eliminate the rat problem.
 - Put bait in tamper-resistant containers and follow all safety regulations.
 - Work with you and visit regularly until job is done and rats are gone.

Step Six: Working With a Pest Control Company

- Work together:
 - Walk around with the pest control professional during each visit and keep track of work.
 - Agree on a service plan and cost.
 - Follow-up on their referrals and recommendations for action.

What the City Does To Control Rats

- The Office of Pest Control Services in the NYC Health Department conducts pest management activities to prevent the transmission of rodent-borne diseases, prevent rodent bites, and improve the quality of life for NYC residents by reducing rodent populations.
- Key activities:
 - Responding to complaints from the public
 - Conducting proactive inspections of public and private property
 - Publicizing best practices for rodent management
 - Educating neighborhoods and residents on rat management
 - Promoting pest management by pest control professionals
 - Sharing data through the NYC Rat Information Portal — nyc.gov/rats
 - Working with City Hall's director of rodent mitigation (rat czar) and collaborating with other agencies

What the City Does To Control Rats

NYC Health Code — Article 151

nyc.gov/assets/doh/downloads/pdf/about/healthcode/health-code-article151.pdf

- It is the owner's responsibility to take measures to keep their properties clean and pest free.

What the City Does To Control Rats: Inspections

- NYC Health Department inspectors visually inspect properties for signs of rats and conditions that rats favor.
- If no such signs or conditions are present, the property passes the inspection.
- If signs of rats or conditions that rats favor are present at the time of the inspection, the property fails the inspection.



What the City Does To Control Rats: Inspections

1. Initial Inspection:
 - As a result of a **311** complaint or proactive neighborhood inspections
2. When a property fails an initial inspection, a Commissioner's Order to Abate (COTA) is mailed to the owner. The COTA includes an inspection report and the Health Department's contact information.
 - Owners are allowed time to remedy the problem (remediate).
 - If you receive a COTA letter, call the number on back for guidance on compliance steps.
3. Compliance inspection:
 - The Health Department will conduct a follow up (compliance) inspection to see if health code violations were corrected.

What The City Does To Control Rats: Summonses and Violations

- Following a failed compliance inspection, the property owner will receive a summons for a hearing at the Office of Administrative Trials and Hearings (OATH).
- If the owner is found in violation of the Health Code, then fines are assessed.
 - The minimum fine amount is \$300, increasing up to \$2,000 for repeat offenders

NYC
Health

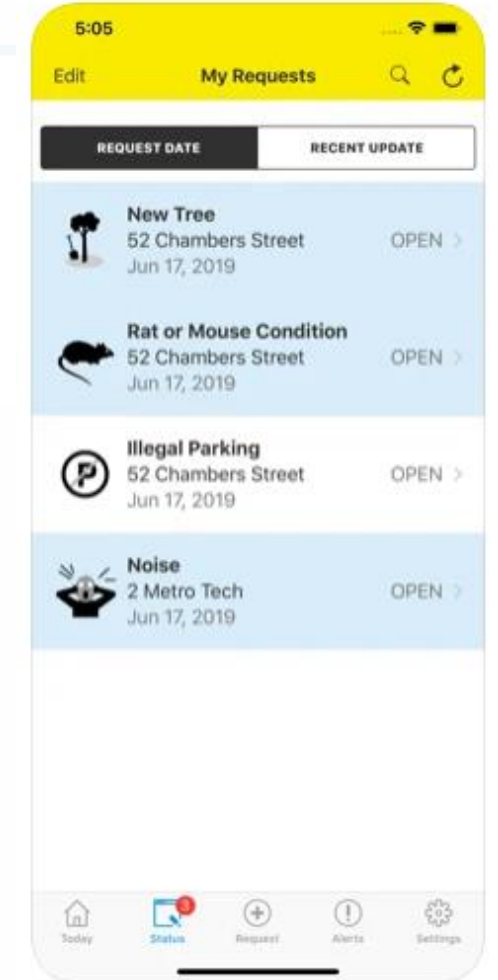
SUMMONS • FOR CIVIL PENALTIES ONLY

SUMMONS NUMBER:

ENFORCEMENT AGENCY NAME: DEPT. OF HEALTH AND MENTAL HYGIENE
DIVISION: Environmental Health
BUREAU: Veterinary and Pest Control Services (Vector Surveillance and Control)
AGENCY ADDRESS AND PHONE NUMBER: 42-09 28th St, Long Island City, NY 11101 Phone: 718-289-1791

Resources: Reporting a Problem

- Report rats or conditions by calling **311**, using the 311 app or visiting portal.311.nyc.gov.
- Provide location and other details in your 311 report.
- Inspectors need access to a property being reported. Include your contact information to assist with access.



Resources: Rat Information Portal

nyc.gov/rats



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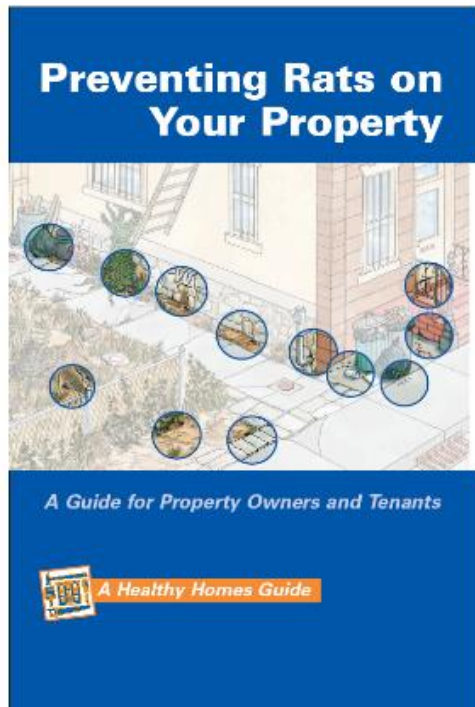
Promoting and Protecting the City's Health

Rat Information Portal

The screenshot displays the NYC Rat Information Portal interface. At the top, there are navigation tabs for 'Map', 'Property History', 'About', and 'FAQ'. The main header includes the text 'Rat Information Portal' and a search bar with the placeholder 'Enter an Address, Neighborhood or BBL in the Search Bar Below'. The search bar contains the address '830 FOX STREET, 10459'. Below the search bar is a legend for 'NYC Health Department Inspections' with five categories: 'Passed at Last Inspection' (green), 'Rat Activity at Last Inspection' (pink), 'Failed for Other Reason at Last Inspection' (purple), 'Not Inspected in the Past 6 Months' (grey), and 'NYC Health Department Action' (white). To the left of the map is a 'Community Board' section with a toggle switch and a dropdown menu. The map itself shows a grid of streets including Dawson St, Kelly St, Beck St, Fox St, Longwood Av, Southern Blvd, Bruckner Blvd, Bruckner Exwy, Leggett Av, E 156 St, and Lafayette Av. A pop-up window is open over a specific property, displaying inspection details for 'Initial Inspection' at 775 Southern Boulevard, 10455. The pop-up also lists 'Inspections' with the last inspection date of 1/30/2023 and 'NYC Health Department Action' with the last visit type of 'No treatments by NYC Health Department since 2015'. The pop-up also includes a 'See FAQ for more information' link and property details: Borough: Bronx, Block: 02720, Lot: 0084, BBL 2027200084, Bronx Community Board 02. The Esri logo is visible in the bottom right corner.

Resources: Preventing Rats on Your Property Guide

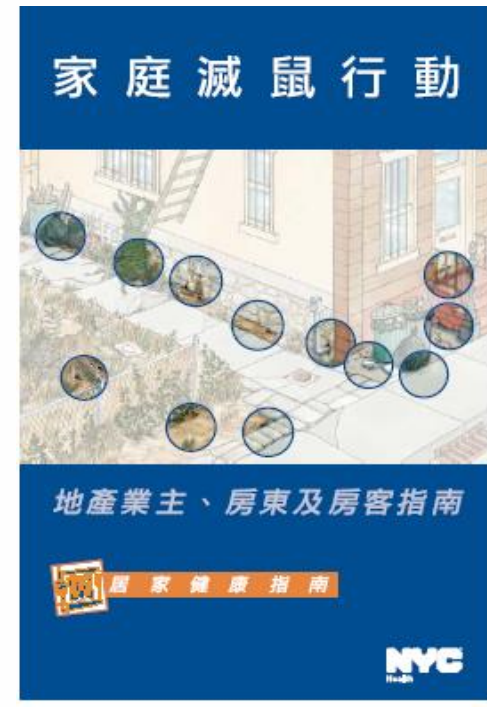
- To find these and other resources, visit: nyc.gov/rats



English

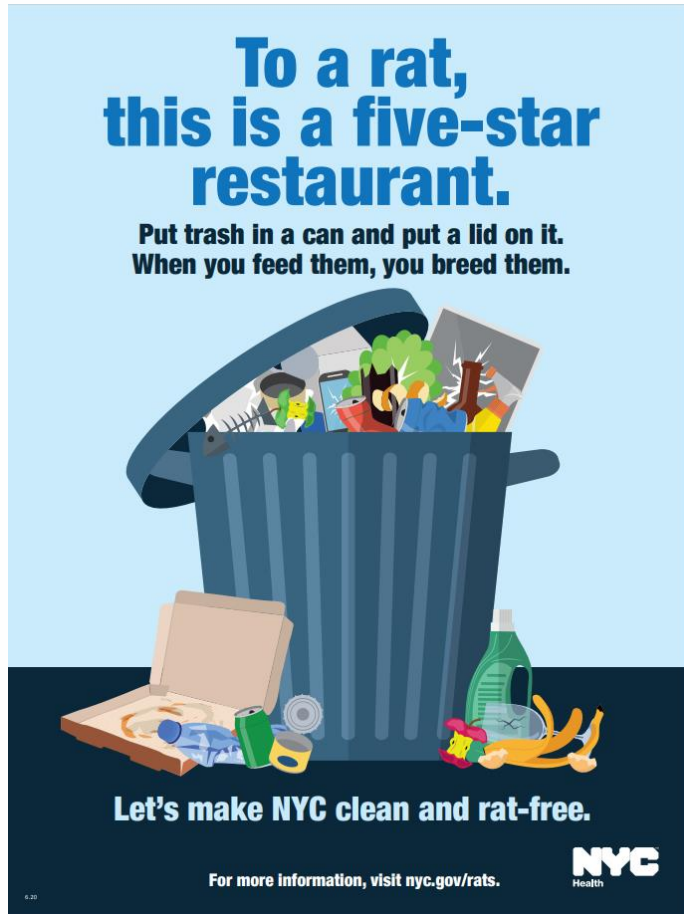


Spanish



Chinese

Resources: Rat Prevention Posters



Request posters
and pest control literature
by emailing
ratportal@health.nyc.gov.



Thank You

Contact Info:

ratportal@health.nyc.gov

www.nyc.gov/rats

[Add sponsor info for
this particular event]

[add flyer for upcoming rat
academy event]