

City Park Rodent IPM[©]

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Drawn from Nature by J. Audouin 1837.18

MUS MEXICANUS, LINN

BROWN, OR HENRY RAT.

MALE, FEMALE & YOUNG.

Engraved & Col'd by G. Scriver, Philad 1838

The Rodent Academy in Seattle



Dr. Corrigan, Rodentologist



HANDBOOK OF PEST CONTROL

MALLIS

EDITORIAL DIRECTOR
STOX A. HEDGES, N.C.E.

TENTH EDITION

HANDBOOK OF PEST CONTROL

CHAPTER 1 RATS & MICE

This chapter is dedicated to Dr. William B. Corrihan, scientist, professor, pioneer. Mallis Handbook editor of Rats and Mice, and most importantly a mentor of environmental management students at Bowling Green State University for more than 25 years. Dr. Corrihan's body of work in the field of rodent pest management earned the science forward and emphasized the need for environmental management, serving as the cornerstone of scientific rodent management efforts. Many others around the world are thankful for his life as a result of the work of Dr. Corrihan.

Rats and mice belong to the mammalian order Rodentia. They occurred about 2 million to 4 million years ago and are most closely related to the shrews and moles of the mammalian order Insectivora. As a group, rodents are among the most successful mammals on Earth. A large portion of this success is due to their high adaptability. Rodents have been able to colonize most different types of environments around the planet. When conditions are favorable, rodents can reproduce quickly. Rodents can also utilize sophisticated behavior patterns to avoid dangers from predators — people included. Worldwide, the order Rodentia comprises the largest order of mammals, consisting of 2,200 species, three of which were discovered recently in 2005. This figure represents about 40 percent of all mammals. In the family Muridae alone — the family to which the common rat and mouse belong — approximately 500 species exist.

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AUTHORED BY DR. ROBERT CORRIGAN

PCT
PEST CONTROL TECHNOLOGIES

Rodent CONTROL

Number of Rats and Mice Captured



*A Practical Guide For Pest
Management Professionals*

ROBERT M. CORRIGAN

2001

Norway Rats

QUICK STATS:



Color:

Brown with scattered black hairs; gray to white underside



Shape:

Long, heavily-bodied, blunt muzzle, small ears and eyes



Size:

7 – 9½ inches long

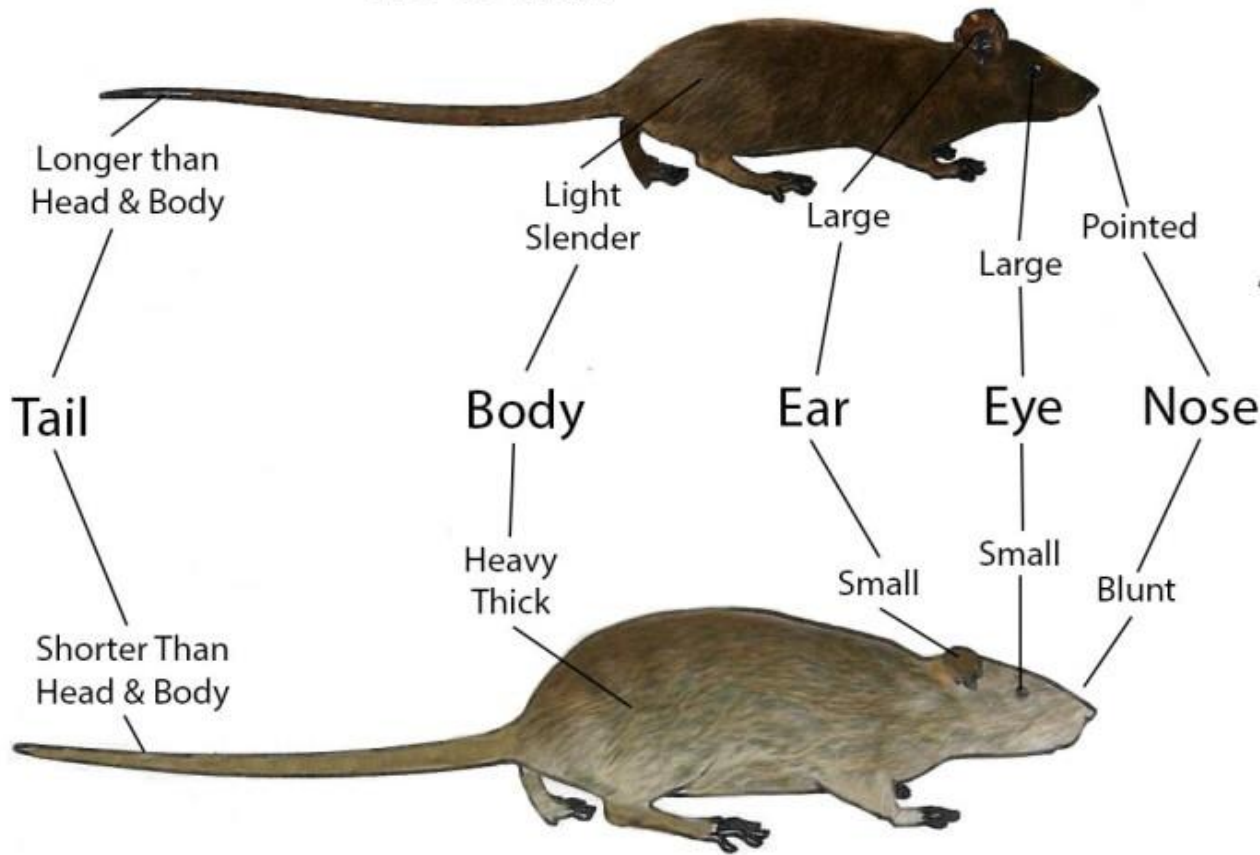


Region:

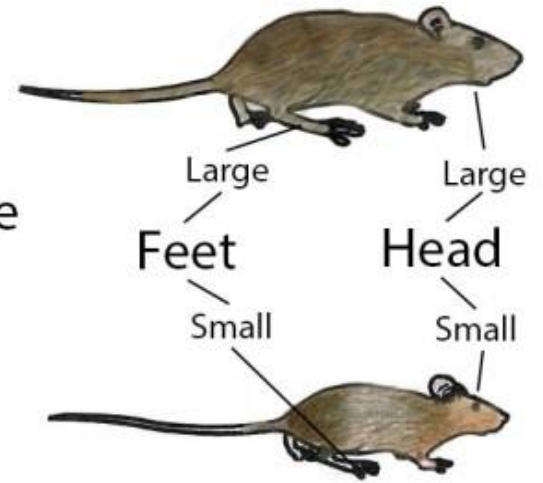
Found throughout the U.S.



Roof Rat



Young Rat



House Mouse

Norway Rat



Norway Rat

rounded ends



Average Length: 3/4 inches



Roof Rat

pointed ends



Average Length 1/2 inches



House Mouse

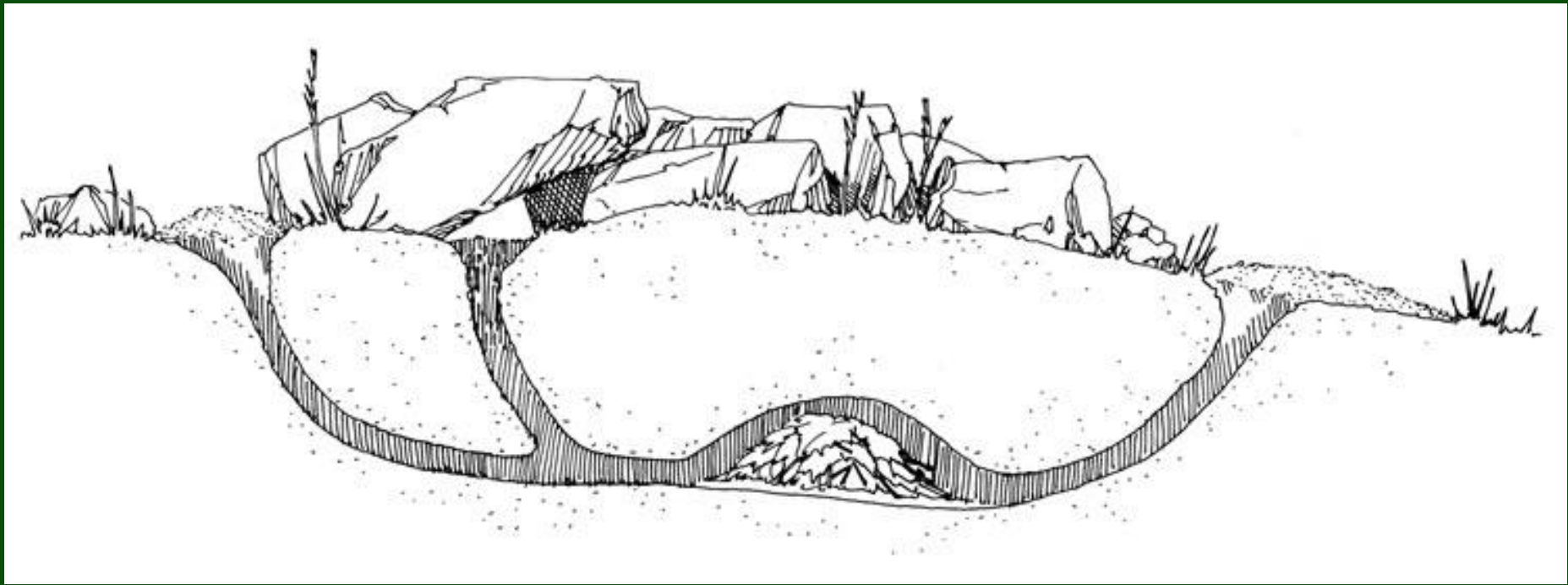
pointed ends

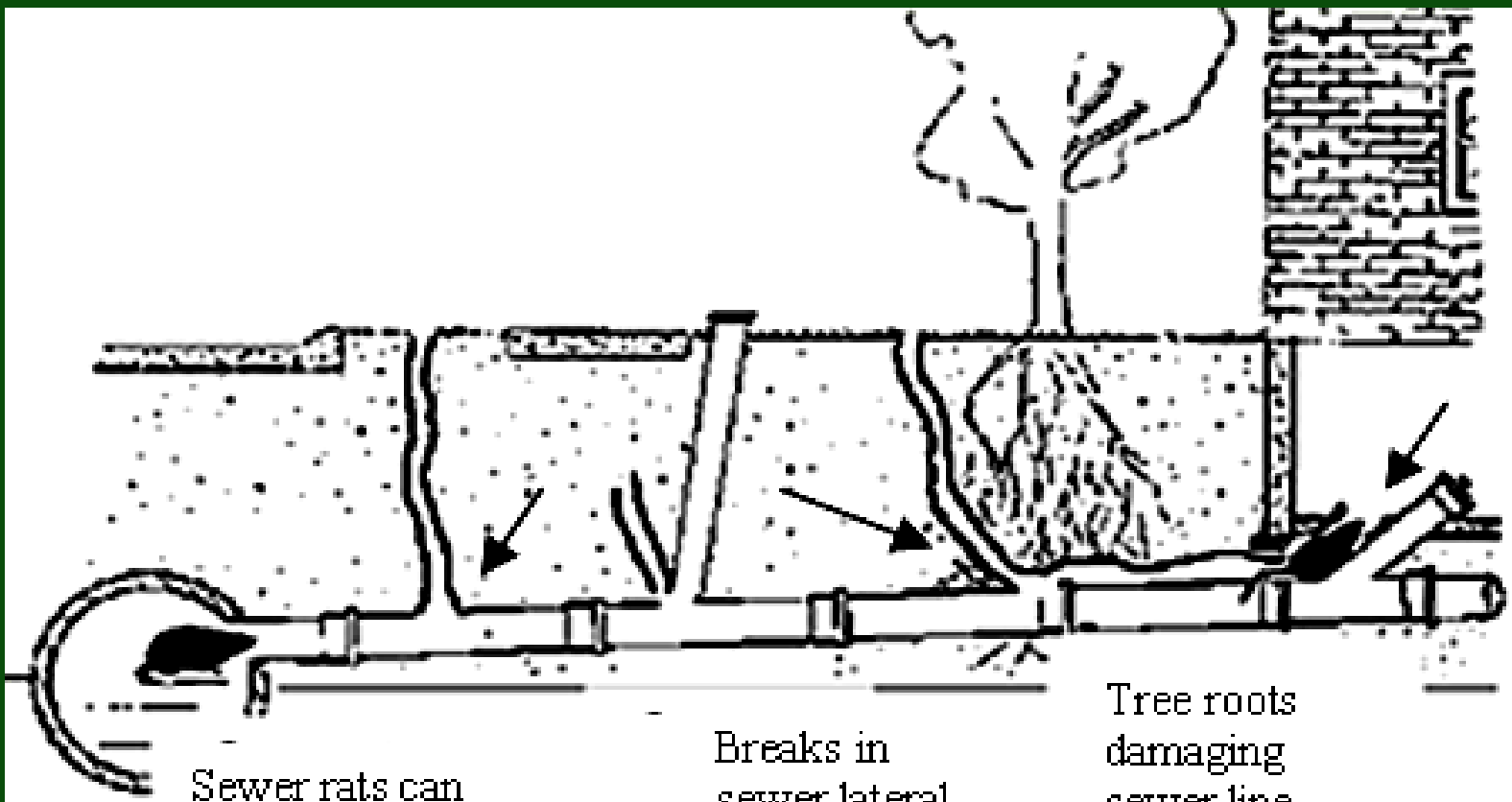


Average Length 1/4 inches

The Rat Ecology of the City Park

- 1. Natural earthen burrows**
- 2. Protective cover among certain landscapes - ground covers and thick shrubs.**
- 3. Access to trash receptacles**
- 4. Access to discarded food on the streets**





Sewer rats can burrow 8 feet or more through solid ground

Breaks in sewer lateral

Tree roots damaging sewer line

Sewer rat entering basement through burrow

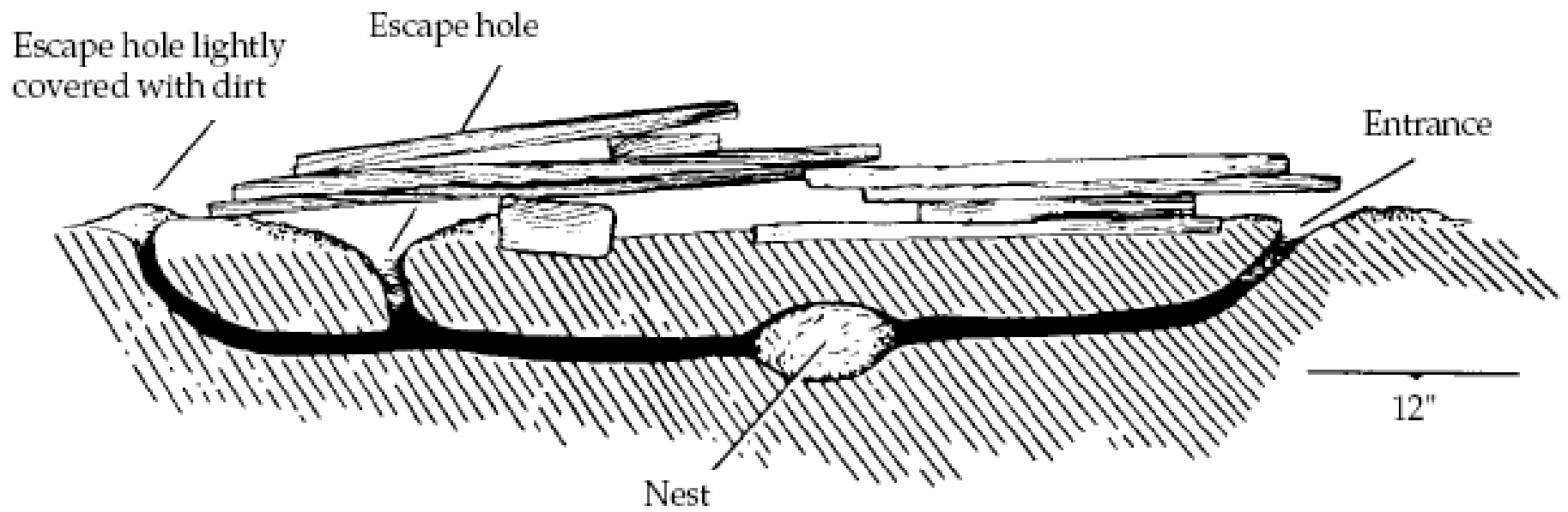


Fig. 3. Norway rat burrow system beneath a pile of boards.

The Rat Ecology of the City Park

5. Easily attainable water sources

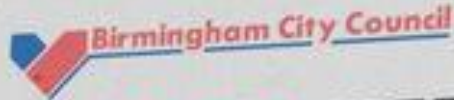
6. Pigeon/squirrel feeding

7. Pedestrian food littering

8. Natural foods: birds, eggs, pigeons, insects







STOP FEEDING PIGEONS !

DUE TO THE EVER INCREASING NUMBER OF RATS AND THE CONSISTENT FOULING OF THE FOOTPATH VISITORS ARE KINDLY ASKED TO STOP FEEDING THE PIGEONS IN THIS PARK



Your cooperation is gratefully acknowledged

















MILLENNIUM
PARK



Connecte
Cano

We're Healthy And That Means
We're Better

WILLYS

City parks are vulnerable:

On Tuesday: rat free

On **Wednesday**: Humans
dig up Street

On Wednesday **Night**: Rats dig
up park



Digital
Networking
Cellular
Video Games

JAR

JAR

MSNY 2



iPod nano



City Hall
Station

R W



ANGIA MIA PIZZA. THE HISTORY

Blimpie

STARBUCKS COFFEE

PIZZA PIZZA

Blimpie



Designed for crystal clear images. No dust spots. Just great shots. The Eight E-300.

WONDERFULLY Wi-Fi

THE O



MTA New York City Bus

WONDERFULLY Wi-Fi

THE O

This Bus Uses Clean-Air Technology

K-13589

A Quick OTJ Guide for City Park Inspections

Find the food sources (often nearest the heaviest used garbage cans).

Pedestrian discards

Busy street curbs

A Quick OTJ Guide for City Park Inspections

Find the veg. cover nearest the food
e.g., thick bushes, thick ground ivy.

Look for dirt mounds

Look For Burrows

Catch Basins and
Sewers.....

Nearby parks serve
as replenishers.



Handicap Accessible

COUNT STORE

CONWAY

ONE WAY

AMERICAN

CONWAY

CONWAY





N.Y.C. TAXI
3A61

TAXI FARE

RIGHT LANE
MUST
TURN RIGHT

ONE WAY

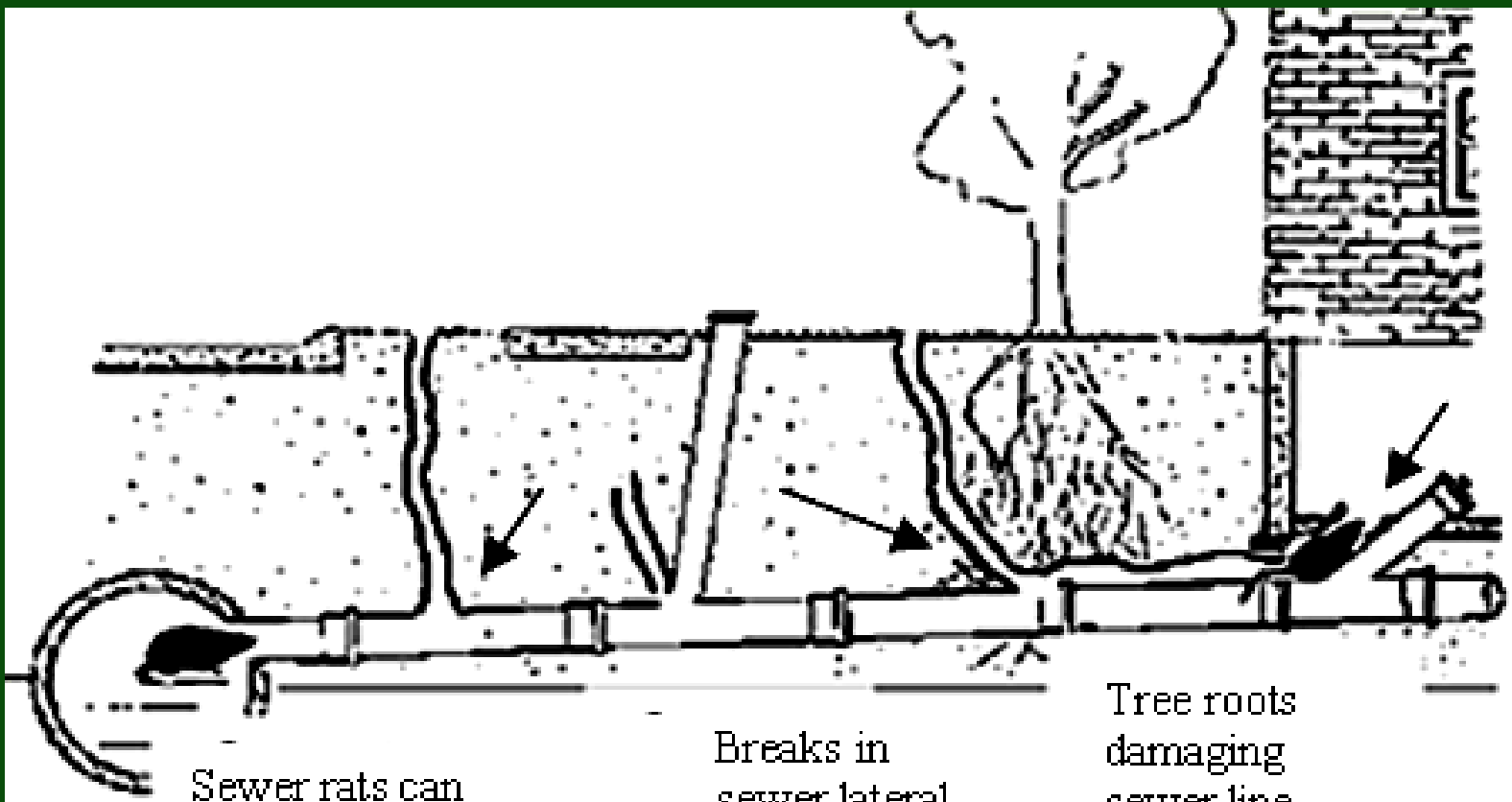
CENTRAL PARK
ARMY

DON'T BLOCK
THE BOX
FINE \$2 POINTS

ONE WAY

ONE WAY





Sewer rats can burrow 8 feet or more through solid ground

Breaks in sewer lateral

Tree roots damaging sewer line

Sewer rat entering basement through burrow









**Infested City Lots Nearby
Parks will serve as
replenishers**

The Rat Ecology of a “Empty Lot

Junk piles for harborage; think 2- dimensional.

Subject to pedestrian food discards

Ground for burrows

Vegetation (weeds) are highly conducive

Quick access to street food discards

The Rat Ecology of a “Empty Lot

Easily attainable water sources

Sidewalk/lot interface for burrows

**Fence protects against people; promotes rats
(food trap; predators; touch)**

**Lot borders subject to becoming local trash
station.**





ELTON AV

ONE WAY

NO PARKING



8









A Quick OTJ Guide for City Lot Inspections

Find the food sources - rats must have access to food.

Vegetation and junk coincide

Next to bldg. foundations for heat and protection.

A Quick OTJ Guide for City Lot Inspections

Healthy weeds? Healthy soil = rats

Look for dirt mounds

Look For Burrows















**Vegetation
Management is
Key**

Avoid creeping ground covers that carpet rat-vulnerable areas

Avoid cave shaped bushes that grow all the way to the ground. Keep pruned up.

Vase-shaped plants are less rat vulnerable.









Landscape Bait Stations

Low Profile Bait stations







TRINECA Professional Products

Weather Blok[®] XT

RODENTICIDE

Mix with TALON[®] Rodenticide

Kills warfarin-resistant Norway Rats and House Mice. Rodents may consume a lethal dose in one feeding with first dead rodents appearing four or five days after treatment begins.

See list of
EPA Pesticides
CAUTION

ACTIVE INGREDIENT:
Brodifacoum
2-[2-(4-chlorophenyl)-1,1'-biphenyl]-4-yl-
1,1,2,4-tetrahydro-1-naphthyl]-4-
hydroxy-2H-1-benzopyran-2-one

INERT INGREDIENTS
TOTAL

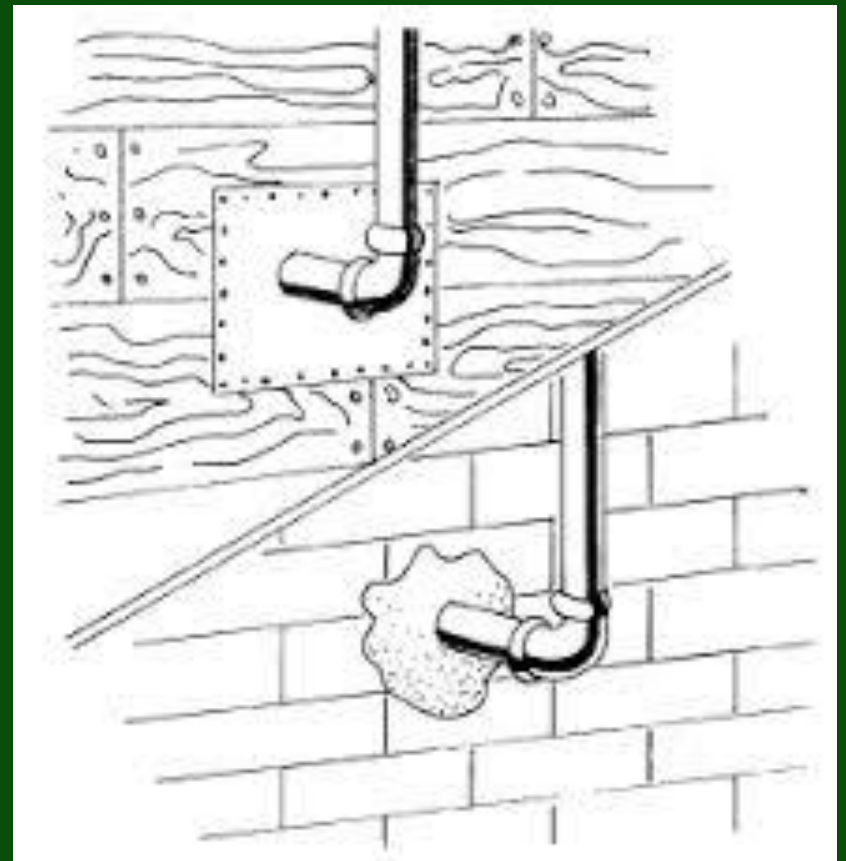
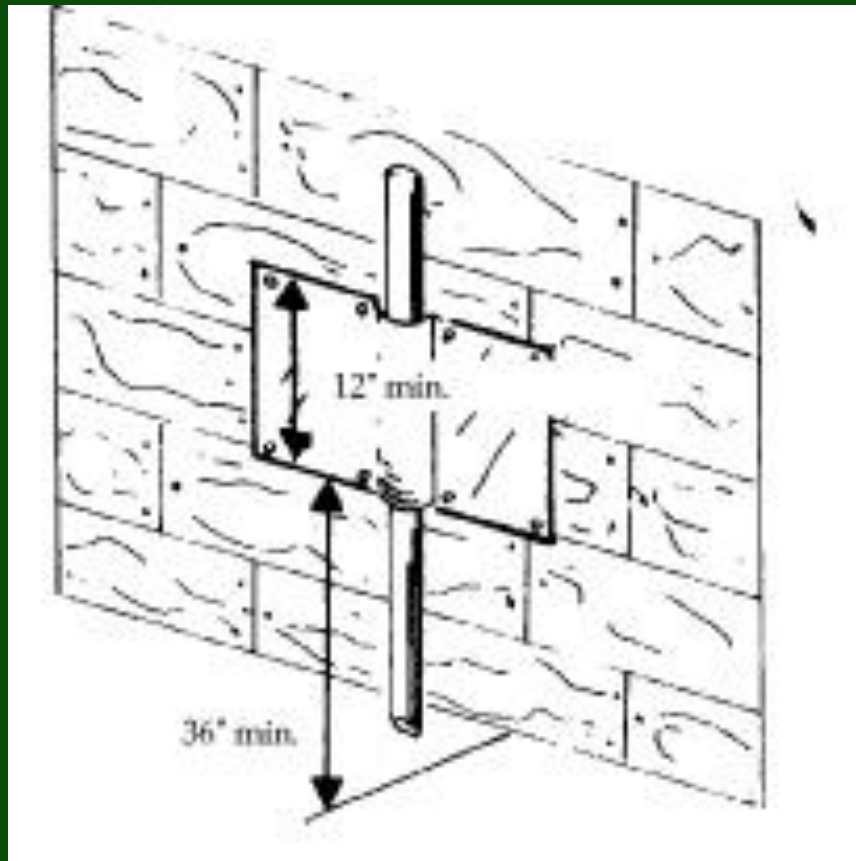
EPA Reg. No. 10182-338 See side panel for additional information Contents: 100%
EPA Est. No. 61282-MI-1



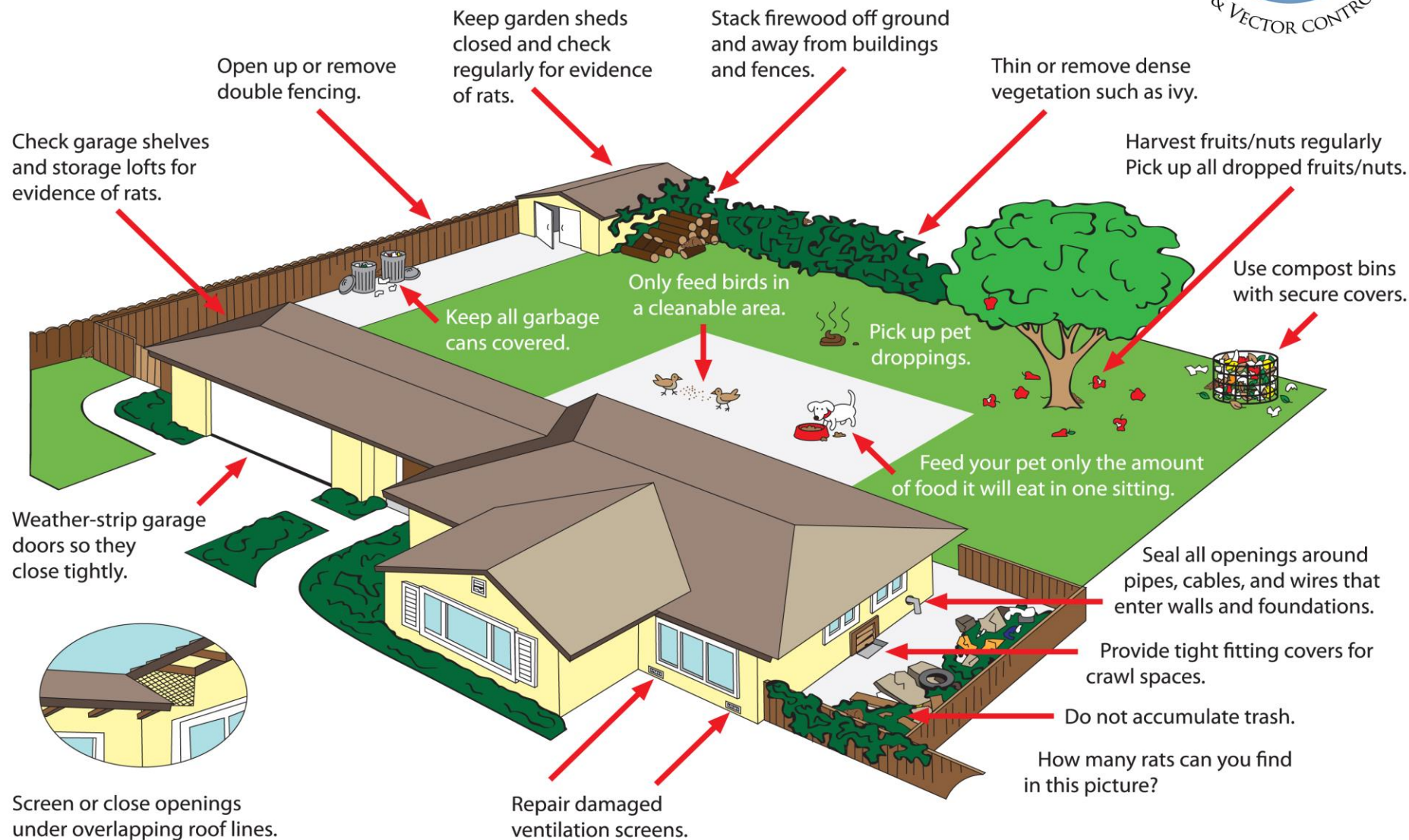








Prevent rats from becoming a problem on your property!



How many rats can you find in this picture?

Burrow baiting for rats

Loose bait pellets are allowed in metered doses with an applicator into burrows.

Do not cave in burrows immediately after baiting as rats will kick the soil back out.

Wait for 7 days then cave in.



Burrow baiting for rats

Re-inspect; rebait active burrows.

Monitor for and remove dead rats while baiting

Secondary poisoning threat to hawks and owls is significant.







Baiting of City Lots

1. **Tamper-resistant BS; 25, 50, 100 ft. depending on rat severity, and perhaps only in areas of rats!!**

To supplement burrow baiting.

2. **Bait stations checked init.; 14 days;**

Thereafter EVERY MONTH routine.

RODENT  **TERMINATOR**



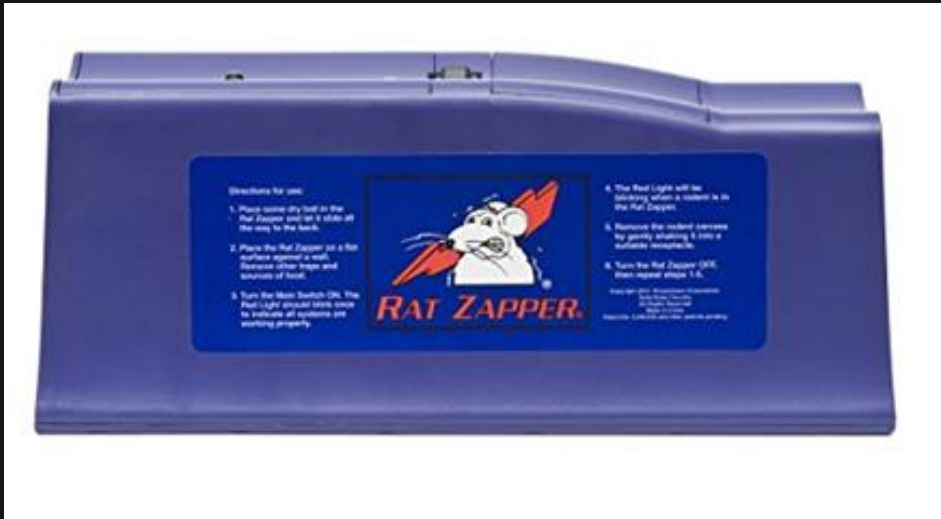
Uses a heart-stopping electric shock to **HUMANELY & INSTANTLY KILL** the rodent, with no blood or mess.

Automatic circuit disconnect eliminates accidental shock when cleaning

Discreet color and design doesn't advertise a rodent problem

2-Piece housing allows the unit to be easily cleaned and serviced

All weather housing works even in the rain. Scrub the kill plate in warm soapy water and let dry overnight to get rid of any debris on the plate/connections.



PestZilla

ELECTRONIC RAT & MOUSE KILLER

SAFE PROTECTION SWITCH

BAIT

STAINLESS STEEL PLATE

PLUG-IN OR CORDLESS



**Dry Ice For Rats
(DIFR)**

EPA Registration 2017

**Individual States Need to Self-
Register**

Dry Ice For Rats (DIFR)

High effective

Very low cost

**Simple to use as a direct burrow
application**

No threat to hawks and other raptors

Rat Ice™

New pelleted dry ice product in process of registration in Washington.

- Nontoxic to humans and pets when applied in the prescribed manner
- A green approach, posing no secondary threats to non-target animals
- A humane asphyxiate (not a fumigant) that allows animals to die in their sleep
- Effective in killing the ectoparasites — fleas, lice, mites and ticks, for example — associated with rodents
- Effective in controlling even bait-aversive and trap-cautious rats



Washington DC

Rodent proof cans and “smart” litter bins – alert city staff via sensors when full

<http://www.nbcwashington.com/news/local/Rats-DC-Announces-Steps-to-Control-Rat-Problem-as-Resident-Complaints-Rise-430231833.html> 1:32

Public Health — Seattle & King County

- Environmental Health Services
 - Animals and pets, rats and bugs
 - Rat and mice prevention**
 - Goat ownership
 - Pet business regulations
 - Avian influenza
 - Bed bugs
 - Rabies facts
 - Swimmer's itch/rash
 - West Nile virus
 - Zoonotic Disease program

Home » Public Health — Seattle & King County » Environmental Health Services » Animals and pets, rats and bugs » Rat and mice prevention

How to get rid of rats and mice

Rodents (rats and mice) are common pests in our area and can be dangerous. They can ruin your food, destroy things in your home and start electrical fires. Rats and mice also carry diseases that can make people sick.

1. File a complaint about rats +
2. Keep rodents (rats) away +
3. Seal up to prevent entry of rodents and rats +
4. Keep rats out of sewer pipes +
5. Trap and bait for rodents +
6. Cleaning up after rodents +
7. Guidance for cleaning and disinfection of vehicles with rodent infestations +
8. When to hire a professional pest control company +
9. Related resources +



Watch a video on how to prevent rats from getting into your home and what to do if you find rat droppings.

Information for...

Do more online

Get help

Thank you!

Barbara DeCaro

Resource Conservation Coordinator

Seattle Parks and Recreation

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Barbara.decaro@seattle.gov