



Integrated Pest Management & Bed Bug

Allison Taisey, BCE
The Northeastern IPM Center
Cornell University

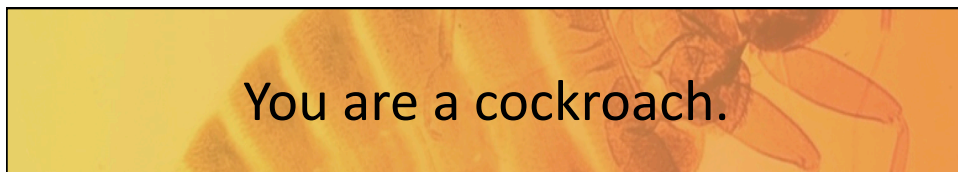


www.StopPests.org

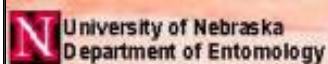

✉ stoppests@cornell.edu

🐦 [@StopPests](https://twitter.com/StopPests)

📘 facebook.com/StopPests



You are a cockroach.



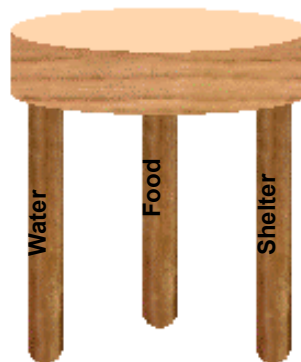
University of Nebraska
Department of Entomology

2



What all pests need

- Food
- Water
- Shelter



4



Find pests that get in
before an infestation grows

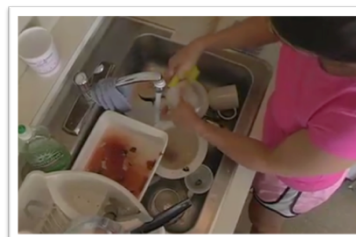


6

Take action

Use more than one control method

Methods must be economical and pose the least possible risk to people, property, and the environment



7

Integrated Pest Management (IPM)

1. Inspect and monitor
2. Identify
3. Determine the scale of response
4. Respond
 - Non-chemical control
 - Changing people's behavior
 - Chemical control
 - Biological control
5. Evaluate effectiveness

8

IPM is not...

- Using only bait
- Applying more than one kind of pesticide
- A certain set of pesticides
- Using spices and herbs
- A service that can be contracted out

9

Questions?

10

Bed bugs



Fed



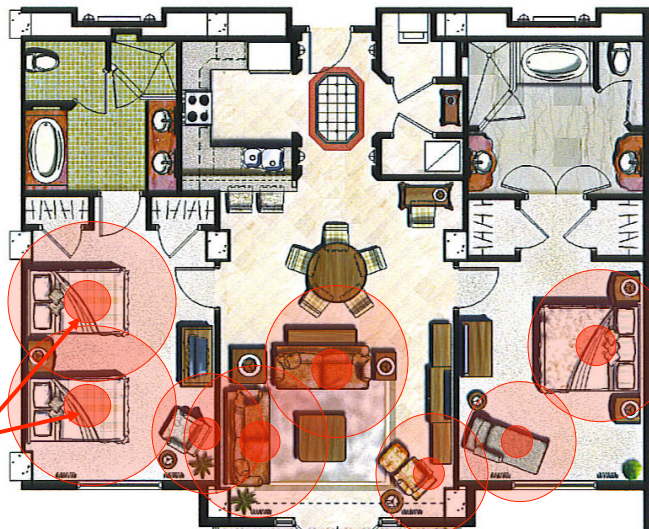
Unfed

11

Where bed bugs live

Beds,
sofas,
bedside
tables,
recliners,
picture
frames...

● = Hot Spot



Areas at-risk for introduction and infestation

- Introduction is likely where people**
 - frequently travel
 - set down personal belongings
 - sit or lay down for long periods of time
- Infestation is likely where bed bugs can**
 - Crawl (upholstered furniture or bedding)
 - Feed on a person for 5 minutes without being detected
 - Hide in cracks or folds

13

Areas prone to introduction vs. infestation

3= high risk 2=medium risk 1=low risk

Area	Introduction	Infestation	Total

14

Advice for staff, health aides, and contractors

🕷 In units:

- Avoid sitting or placing items on potentially infested surfaces
- Wear a protective layer when moving infested items

🕷 In the main office/community areas:

- Replace fabric-covered furniture that has many crevices with plastic or metal items
- Have residents set their belongings in plastic totes during meetings

15

Prevent introduction and spread: residents

- 🕷 Keep coats, backpacks, purses, and bags off beds, recliners, and sofas at home and while out
- 🕷 Inspect used furniture carefully before bringing it home—avoid it if possible
- 🕷 Look for signs when sleeping away from home

16

Integrated Pest Management (IPM)

1. Inspect and monitor
2. Identify
3. Determine the scale of response
4. Respond
 - Non-chemical control
 - Changing people's behavior
 - Chemical control
 - Biological control
5. Evaluate effectiveness

17

Treatment options

- Pesticides
 - Spray
 - Dust
 - Fumigation
- Heat
 - Dryer
 - Steam
 - Container
 - Whole unit
- Freezing
 - Liquid CO₂
 - Chest freezer
- Vacuuming
- Isolation
 - Encasements
 - Clear bags
 - Closed plastic containers
 - Interception devices

18

Questions?

In-house options (minimum training)

- ☛ Encasement
- ☛ Monitoring
- ☛ Quick (15 min) visual inspection
- ☛ Steam
- ☛ Clothes Dryer
- ☛ Vacuum
- ☛ Heat chamber (FL model)
- ☛ Diatomaceous Earth (APPLICATOR'S LICENSE)
- ☛ Resident training/support

Leave it to the experts

- ☛ Canine inspection
- ☛ Whole-unit heat treatment
- ☛ Pesticide application
- ☛ Thorough inspection
- ☛ Active Monitoring

19

Resources by state

20



Pest Prevention by Design


Authoritative guidelines for designing pests out of structures

 **SF Environment**
Our homes. Our city. Our planet.
A Department of the City and County of San Francisco

 **ICC**
INTERNATIONAL
CODE COUNCIL

21

National Pesticide Information Center

 www.npic.orst.edu

npic **National Pesticide Information Center**
1.800.858.7378 npic@ace.orst.edu

Index [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

[Home](#) [Health & Safety](#) [Pest Control](#) [Pesticide Ingredients](#) [Regulations](#) [Environment](#) [Emergency](#) [Report Pesticide Incident](#) [A](#) [A](#)

You are here: [NPIC Home Page](#) --> Find Your Local Resources

Find Your Local Resources

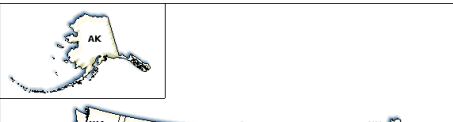
Search by ZIP code:

Enter your zip code here

—OR—

Choose your state:

Click the state you live in to find your local resources:




Disponible en español


Related Topics:

[Worker Safety in My State](#)
[Pesticides and Local Services \(PALS\) App](#)

Share this page:



School IPM

 State programs

 eXtension.org

Resource Areas	ENERGY	FARM	HEALTH AND NUTRITION
COMMUNITY Agricultural and Food Law Community Planning and Zoning Cooperatives Creating Healthy Communities Diversity, Equity and Inclusion Entrepreneurs & Their Communities Geospatial Technology Network Literacy Program Evaluation Volunteer Administration DISASTER ISSUES Agricultural Disaster Preparedness Drought Resources Floods Wildfire	Farm Energy Home Energy Wood Energy ENVIRONMENT Prescribed Fire Trees for Energy Conservation FAMILY Child Care Companion Animals Drinking Water and Human Health Family Caregiving Food Safety Military Families Parenting Personal Finance Teen Leadership	Ag Safety and Health Animal Manure Management Animal Welfare Apples Bee Health Beef Cattle Blueberries Climate, Forests and Woodlands Corn and Soybean Production Cotton Dairy Forest Farming Freshwater Aquaculture Goats Grapes Hogs, Pigs, and Pork Horses Marine Aquaculture Organic Agriculture Plant Breeding and Genomics Rangelands Sheep Small and Backyard Flocks Small Meat Processors Wood Products	Community Nutrition Education Families, Food and Fitness Healthy Food Choices in Schools Omega-3s LAWN AND GARDEN Extension Master Gardener Gardens, Lawns & Landscapes Water Conservation for Lawn and Landscape PEST MANAGEMENT Feral Hogs Imported Fire Ants Invasive Species Pest Management In and Around Structures Pesticide Environmental Stewardship Wildlife Damage Management YOUTH Ag Zone Science for Youth



 stoppests@cornell.edu

 [@StopPests](https://twitter.com/StopPests)

 facebook.com/StopPests

www.stoppests.org/request

National Center for Healthy Housing

 www.nchh.org/Training/IntegratedPestManagement.aspx



National Center for Healthy Housing

[Donate Now](#)

[eNewsletter](#)

[Store](#) [Blog](#)

[home](#)

Who We Are
What We Do
Research
Training
Policy
Resources

Training

Training > Integrated Pest Management

Integrated Pest Management (IPM)

Pest control in multifamily housing is challenging. Residents' housekeeping practices vary, as does their tolerance for pests. Maintenance is a never-ending battle. Pests move easily from one unit to another, and everyone must respect residents' privacy and independence.

Health Effects of Pests:
Pests, such as cockroaches and mice, are associated with asthma attacks. Cockroaches may cause asthma in children, while rats carry disease and can start fires. Flies spread disease. Bedbugs are back.

Extent of Problem:
More than half of the residents in public housing and Section 8 properties surveyed in 2004 reported having problems with rodents and insects indoors. Seventeen percent (17%) had problems most or all of the time. Other studies suggest that the problem is worse: A HUD-funded Purdue University study found that 71% of a public housing development had active infestation, yet only 22% of the residents with an infestation reported the problem. Eighty percent (80%) had used sprays and foggers to control for cockroaches, and almost 60% had

Learn More

- [Calendar](#) [+]
- [Green and Healthy Housing](#) [+]
- [Healthy Homes Specialist Credential](#) [+]
- [Healthy Homes Training Center](#) [+]
- [Healthy Housing Challenge](#) [+]
- [Integrated Pest Management](#) [-]
- [Contracting for a Pest Management Professional](#)
- [Finding IPM Contractors](#)
- [Training for Section 8 IPM](#)
- [New York State Primary Prevention Initiative](#) [+]

StopPests in Housing Program

 www.stoppests.org



[Request Training](#)

[Pest Solutions](#)

- [HOME](#)
- [ABOUT US](#)
- [WHAT IS IPM?](#)
- [WORKING WITH RESIDENTS](#)
- [IPM TRAINING](#)
- [SUCCESS STORIES](#)

Want to use something you see? Go ahead. We're honored. So we can tell our funders how we shared these materials, please e-mail us what you want to use and how you will use it, then read and heed our guidelines.

Connect with StopPests!

HOME > PEST SOLUTIONS > Bed Bugs

Bed Bugs

HOW DO YOU GET RID OF BED BUGS?
Bed bugs hitchhike on people's belongings and hide in crevices near where they rest. To prevent an infestation of bed bugs, you need to keep them from coming into your home and detect new infestations early. Basically, no silver bullet exists. Pest control has changed and we are still working on the best solutions for bed bug management. Rely on the pest management professional (PMP) for all pesticide use. Focus on preventing introduction and detecting them early. Educate residents and staff about how to prevent bed bugs from hitchhiking on their belongings. Make sure procedures are in place for prompt and proper furniture removal from the property. Install mattress- and box-spring encasements and bed bug interceptors. Offer products and services for free to incentivize cooperation. Teach residents and staff to inspect often. If a unit is being treated for bed bugs, have a staff person check on the preparation progress before the pest management professional arrives.

BED BUG BASICS

What they look like
Adults look like apple seeds with legs. Young bed bugs—nymphs—look like adults, only smaller. Newly hatched nymphs are poppy seed-sized. Eggs are tiny, white, and hard to spot.

Where they live
In cracks and crevices of bed frames, floors, walls, furniture, electronics, mattresses—any spot they can wedge themselves near where people rest.



Adult, nymphs and blood spots on wood. Photo by Gary Alpert, Env. Health & Safety, Harvard U.



Bed bug nymph feeding. Photo by Gary Alpert, Env. Health & Safety, Harvard U.

Questions?

Slides will be available at
www.stoppests.org/about-us/conference-presentations/