



University of Idaho
Extension

Be a Bad Neighbor: making your building less attractive to mice and birds



MONTANA DEPARTMENT OF
AGRICULTURE

Guest Speaker: Stephen M. Vantassel,
Vertebrate Pest Specialist, Montana Department of Agriculture

Lu Hauger, FSMA Extension Educator, University of Idaho,
Commercial Produce Safety, Boise

This webinar will begin at 10 AM PST | 11 AM MDT

Please use this time to test your speakers
for the presentation

HOUSEKEEPING



Close all other programs running on your computer



Check your sound – problems with clarity, speed, etc. switch to the phone

Call-in number provided in the welcome email

Mute computer sound when using phone



Type in questions for speakers (or for help with viewing & sound) into question box



Handouts are available to download on your computer



This webinar and Q&A will not discuss COVID-19-related produce safety questions

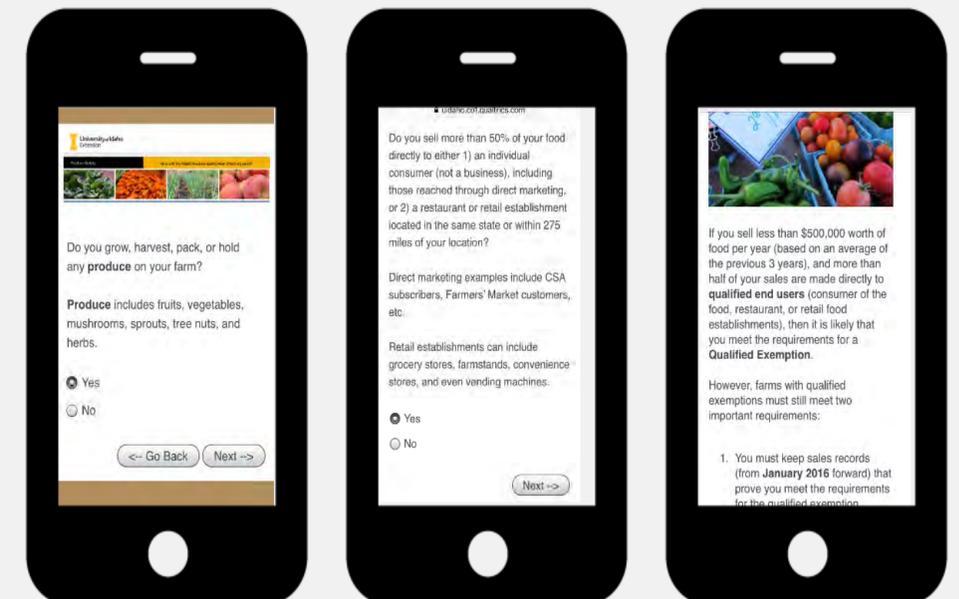


FSMA PRODUCE SAFETY RULE

THE BASICS

- The Food Safety Modernization Act, or FSMA for short, was signed into law on January 4, 2011
- Gives the FDA the authority to regulate food from farm to fork
- First sweeping food safety regulation overhaul in the United States since 1938
- The Produce Safety Rule (PSR) establishes science-based minimum standards for safe growing, harvesting, packing and holding of fresh fruits and vegetables for human consumption
- Not all farms are subject to the Produce Safety Rule (PSR)

www.uidaho.edu/extension/food-safety-for-produce-growers



PSR PEST-RELATED REQUIREMENTS



Subpart L - Equipment, Tools, Buildings, and Sanitation

Sec. 112.128 What requirements apply regarding pest control in buildings?

- You must take those measures reasonably necessary to protect covered produce, food contact surfaces, and food-packing materials from contamination by pests in buildings, **including routine monitoring for pests** as necessary and appropriate.
- **For fully-enclosed buildings**, you must take measures to exclude pests from your buildings.
- **For partially-enclosed buildings**, you must take measures to prevent pests from becoming established in your buildings (such as by use of screens or by monitoring for the presence of pests and removing them when present).

Today's presentation is intended to enhance your understanding about pest control on farms. This information does not fully reflect the FSMA PSR, and growers should refer to Subpart L for the full text related to the monitoring and management of pests in buildings.

TODAY'S GUEST SPEAKER



MONTANA DEPARTMENT OF
AGRICULTURE

Stephen M. Vantassel, CWCP, ACE

Vertebrate Pest Specialist

Montana Department of Agriculture





Be a Bad Neighbor

Making your building less attractive to
Mice & Birds

Stephen M. Vantassel, CWCP[®], ACE[®]
Vertebrate Pest Specialist
Montana Department of Agriculture

Voles¹



Deer Mice



House Mice



- Blunt nose
- Small ears
- Short tail*
- May be bicolored
- Yellowish, grayish

- Pointed nose
- Exposed ears
- Long tail
- Bicolored tail
- White belly

- Pointed nose
- Exposed ears
- Long tail
- Naked tail
- Dull gray belly

Voles vs Shrews



Photos: Web

● Vegetarian

● Insectivore

Mouse Biology Refresher



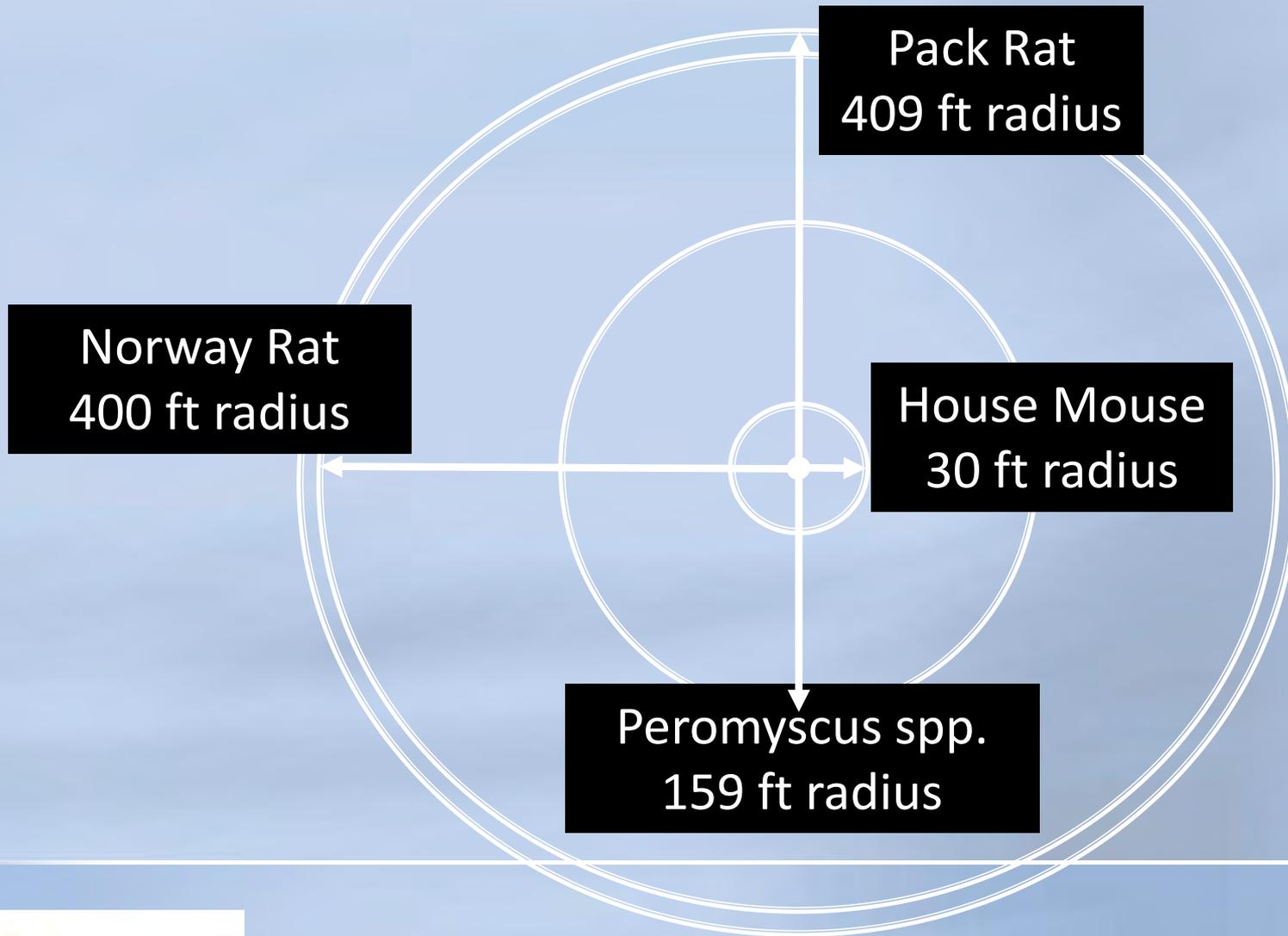
● House Mouse

- ~0.13oz food/day¹
- ~161 cal/day
- Don't need free water
- ♀--42-60 yg/yr
- Gnaw 1-2mm wide
- Frequent trips
- Curious

● Life History

- 21-day gestation²
- 4-6/litter
- Mature in 6-8 wks
- Reinvade a structure in 6 wks³

Rodent Home Ranges



Physical Abilities



| Task | Mouse | Rat |
|--------------|--------------------------|---------------------------|
| Climb | Any rough surface | Any pipe |
| Rope | 10g wire | ¼" wire |
| Swim | Poor | Excellent |
| Enter | 0.24" (Min) ³ | 0.5" (Min) ³ |
| Stand Jump | 9.8" (Min) ¹ | 15.75" (Max) ¹ |
| Running Jump | 24" | 36" ² |

Mouse vs. Bat Droppings

- Mouse Droppings

- Scattered
- Hard-when dry
- Smooth

- Bat Droppings

- Piled
- Soft/crumbly-when dry
- Rough & speckled



Stephen M. Vantassel



Stephen M. Vantassel

Mouse 1-2 mm¹

Mouse Sign

Photos: Land Care Research



Photos: Stephen M. Vantassel



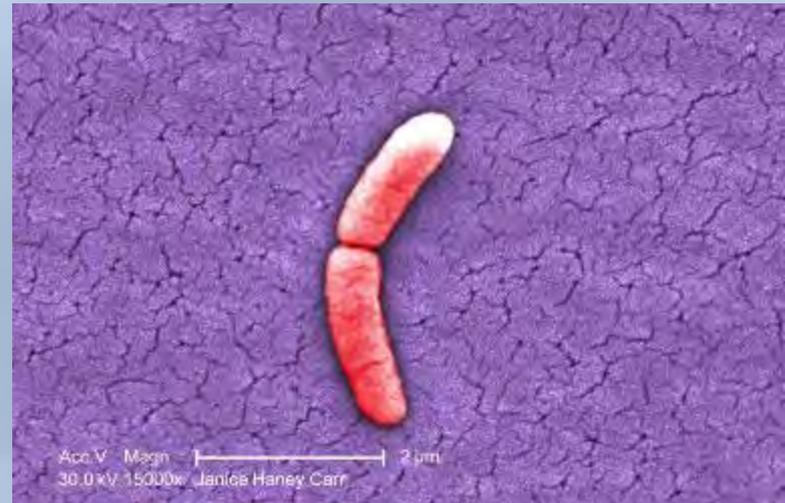
Rodent Risks

- Allergies/asthma¹
- Food Loss²
- Diseases³
- Food Contamination⁴

Salmonella can be viable on mouse feces for up to 86 days.⁵



Photos: web



Rodent Risks

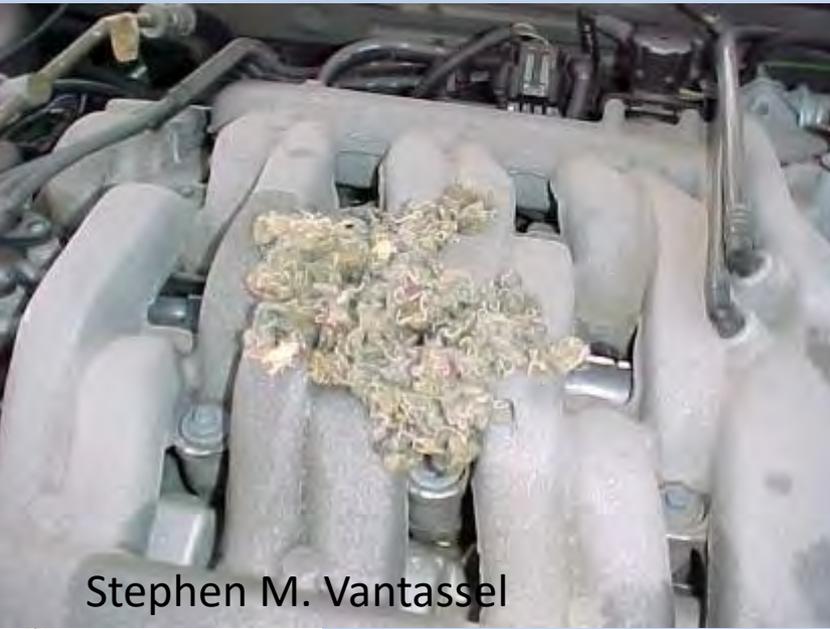
- Structural Damage
 - Electrical Fires
 - Insulation Damage²
 - ~50% reduction in R-value in 6 months
- Vehicles



Photo: web



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Stephen M. Vantassel

Integrated Pest Management (IPM)



Remove Their Cover



Remove/Reduce Food Availability



Remove/Reduce Access



Photos: Stephen M. Vantassel

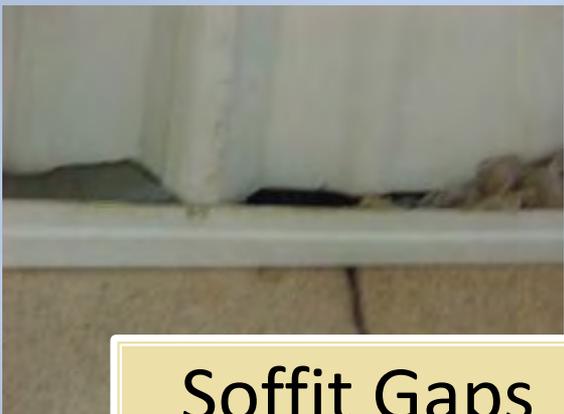
Look High



Pipes



Soffit Gaps



Soffit Gaps



Weep Vents



Ridge Vents

Look Low



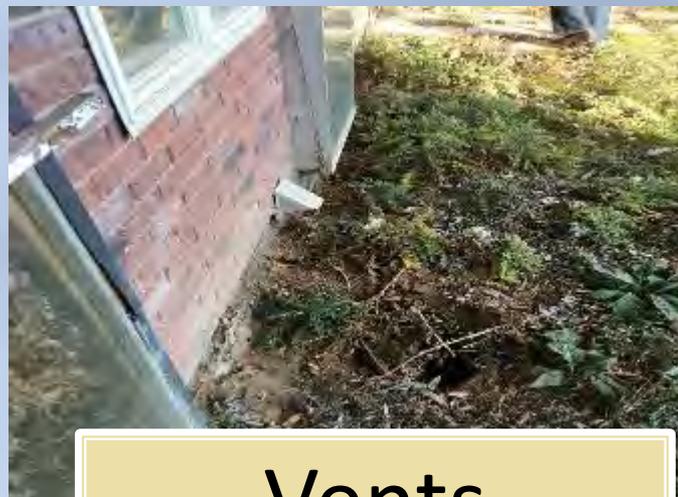
Pipes



Garage Doors



Access Doors



Vents

Securing Holes & Crevices

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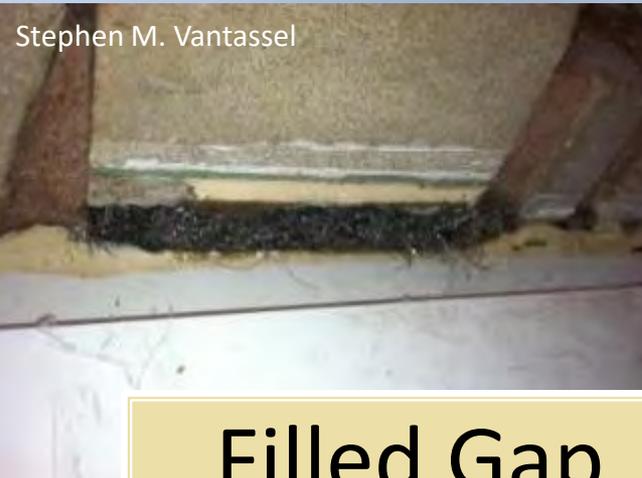
Sealant



Xcluder™



Stuff-It



Stephen M. Vantassel

Filled Gap



Xcluder™ Fabric

Avoid Using Expanding Foams

- Not UV stabilized
- Paint or keep out of sunlight
- Can be gnawed through
- Use in conjunction with other permanent methods



Frightening Devices & Repellents



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Gels



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Powder

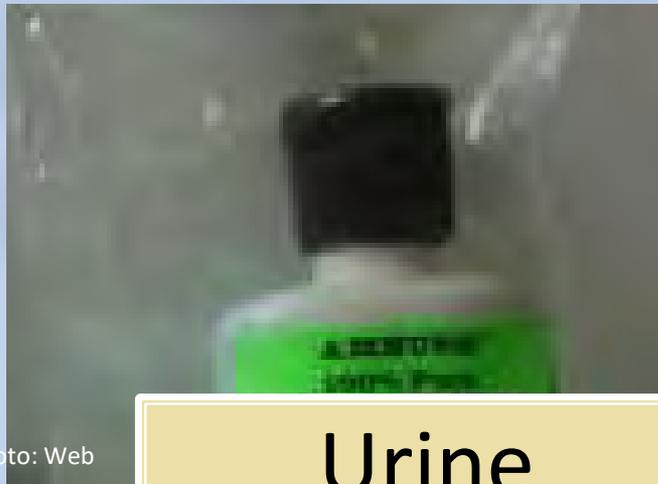


Photo: Web

Urine



Stephen M. Vantassel¹

Ultrasound

NO MOTHBALLS



Web photo

- Naphthalene¹ & Paradichlorobenzene²
- Group C chemicals-possible carcinogens
- Injurious to humans
- Both-Liver and CNS damage
- Naph—retinal/cataracts
- Injurious to animals if eaten

Trapping Safety

- Wear appropriate safety equipment, e.g. gloves when handling traps and animals
- Protect traps in areas with high human/pet traffic
- Check traps regularly, more often in the beginning.



Stephen M. Vantassel



Stephe

Location, Location, Location

- Identify Heat Sources
 - Refrigerators
 - Freezers
 - Hot water heaters
 - Furnaces
 - Lights
 - Insulated walls



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Improving Trapping Success

- House Mice
 - Expanded triggers²
 - Add fresh traps occasionally



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No second chances!!



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Use Proper Setting Technique

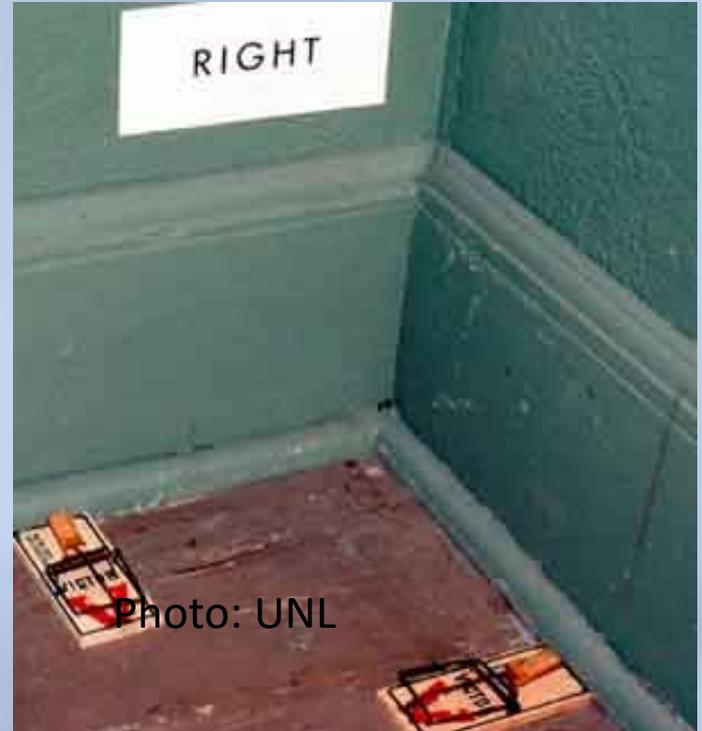
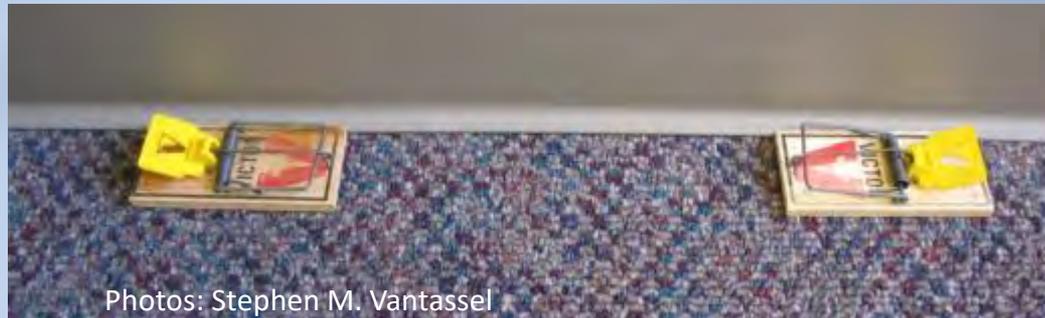


Photo: UNL



Photos: Stephen M. Vantassel

Bait—Pre-bait first

Use combinations of sets (unbaited & baited).

- Peanut butter (watch out for allergies)
- Caramel
- Chocolate (mice)
- Cotton, twine,
- Bacon (rats)
- Pepperoni (rats)



Photo: Stephen M. Vantassel

No bait works too

Glue Boards-not great for rodents

- Effective only for
 - Bugs
 - Juvenile rodents
- Educates adults
- Growing number of businesses banning their use on property¹



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Cats

- Not species specific
- Useless against rodents inside walls
- No evidence they are effective in controlling rodents
- Cats devastate local natural fauna



Key carrier of
*Toxoplasma gondii*¹

Rodent Control Safety¹

- *Peromyscus spp.* (Deer mice)
- Droppings look like house mice droppings



Photos: Stephen M. Vantassel

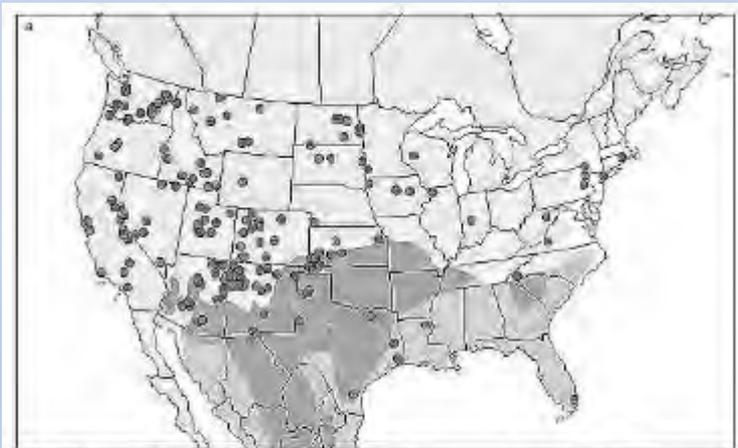


Photo: CDC

Top left: Deer Mouse-*P. maniculatus*

Bottom left: White-footed Mouse-*P. leucopus*
Circles represent positive Hanta cases to 1999.



Photo: CDC

Hantavirus¹

- Rare disease 20-50 cases/yr
- Fatality rate ~35%
- On-set “unknown” possibly 1-62 wks (typically 6)
- Symptoms
 - Early—Fever & Flu-like symptoms
 - Late—Coughing, difficulty breathing

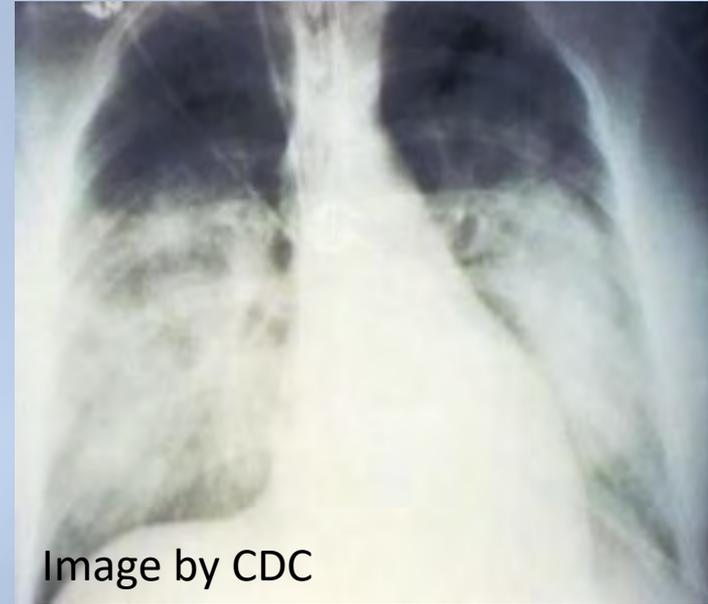


Image by CDC

Personal Safety

- Protect Yourself
- Gloves
- Do NOT sweep droppings
- Hand washing
- Waterless hand sanitizers (60% alcohol)



Photos: Stephen M. Vantassel

Migratory Bird Treaty Act -1918¹

● Unprotected Birds

- Pigeons
- House Sparrows
- Starlings
- Eurasian Collared Dove*

● Protected Birds

- Everything else*²
- Limited protection for black birds



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Unprotected Birds-Fed

Columba livia



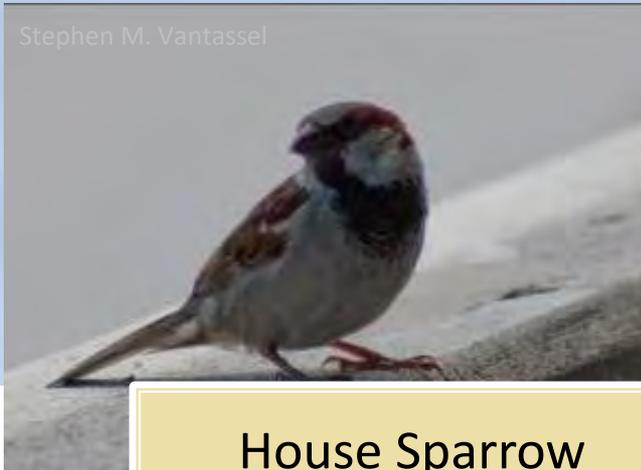
Pigeon

Sturnus vulgaris



Starling

Passer domesticus



House Sparrow

Streptopelia decaocto



Eurasian Collared Dove

House Sparrows & Starlings

- Crevice dwellers
- Fill voids with grass (completely)



Pigeons

- Nests are simple
- Sticks and feathers
- Laid on a ledge under cover
- Note the owl effigy



Histoplasmosis Risk

- Soil under roosts of 2- to 3-year old roosts
 - Soil contamination up to a depth of 8" possibly 12"
- Sweeping 4" of guano from a roof¹
- Spores can (and have) infect 30 yards downwind²
- Disturbed areas can infect people the next day³



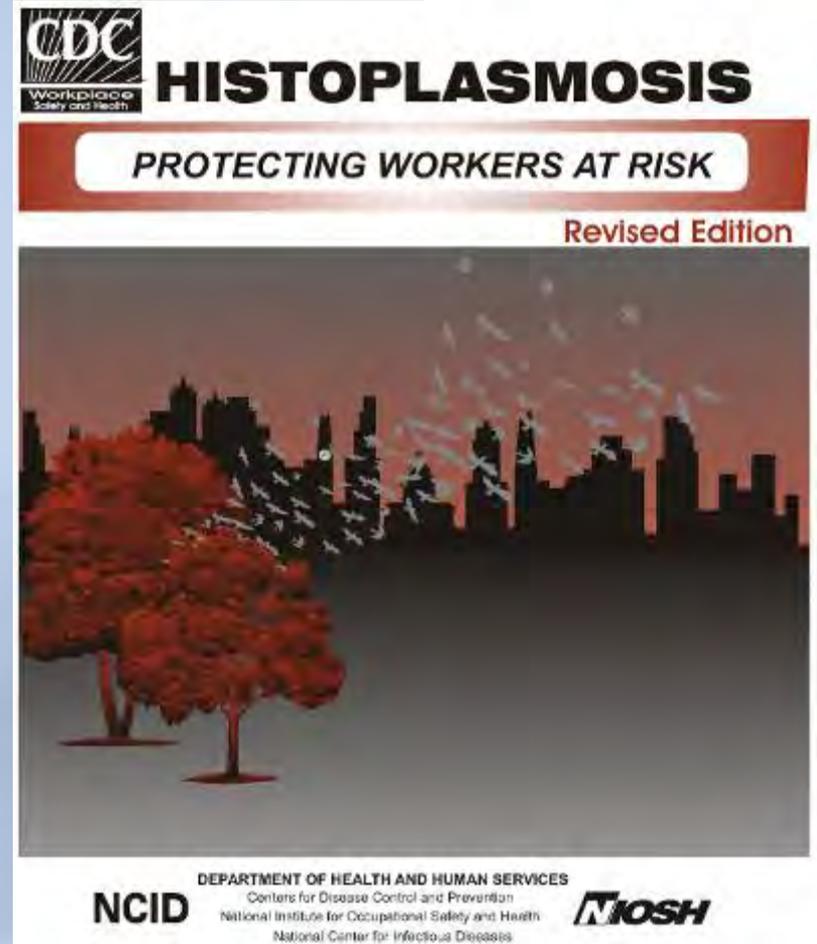
Univ. of Nebraska-Lincoln



Soil under bird roosts become fertile ground for histoplasmosis spores

Histoplasmosis

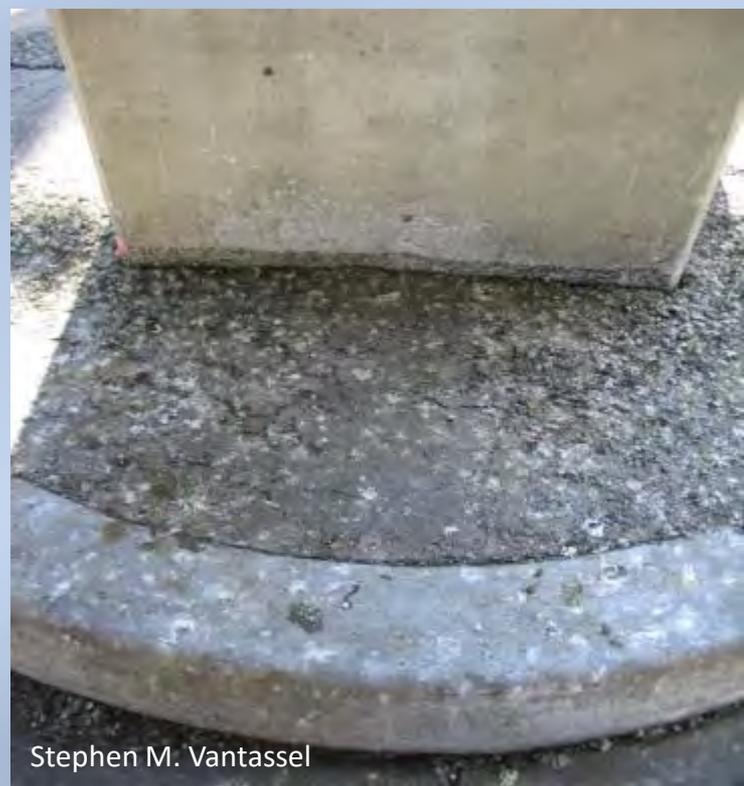
- Feces clean up
- Revised 2006 CDC



Pigeon Feces & Allergies

- Pigeon feces highly allergenic
- 10 Allergens identified
- Pigeon feces outside a building can affect people inside.¹

Exposure x Volume = Sensitivity



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Alan Huot.



Bird Droppings & Roofs

- Pigeons excrete 22-26 lbs feces/yr
- Drains clogged with pigeon droppings have collapsed gas station roofs
- Dry weight in roofs is also an issue 40lbs/cu/ft (dry weight)



4 to 6 inches on bottom and 12 inches on sides yielded 4,600 pounds of pigeon droppings¹.

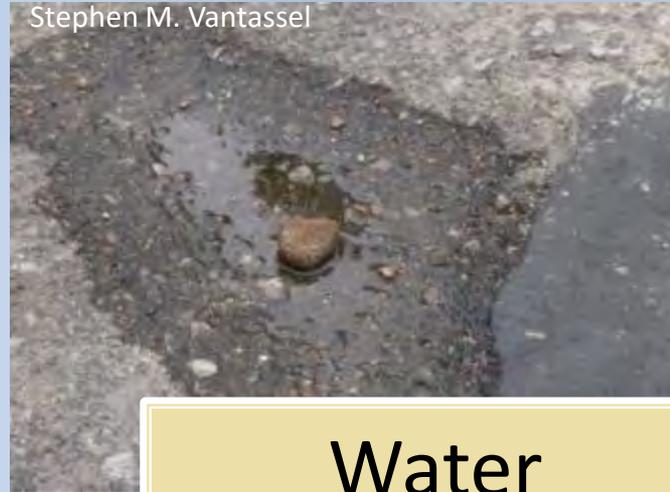
Habitat Modification

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Passive Feeding

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Water

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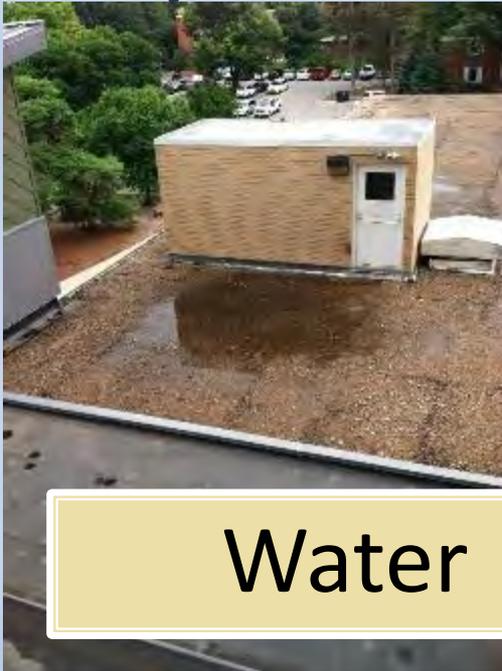
Active Feeding

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Spilled Grain

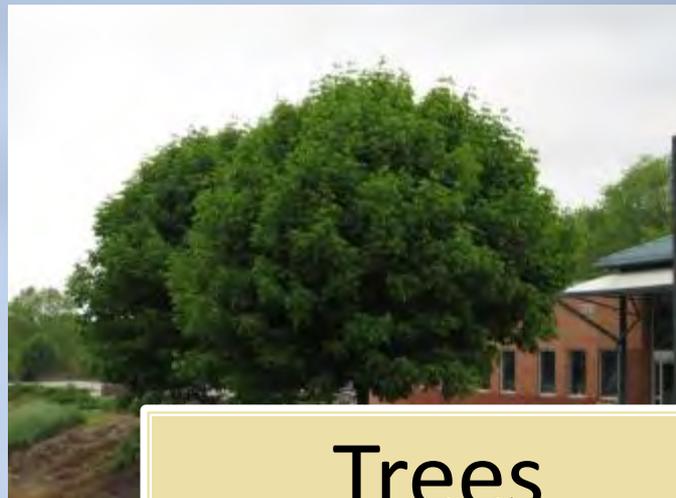
Landscape Changes



Water

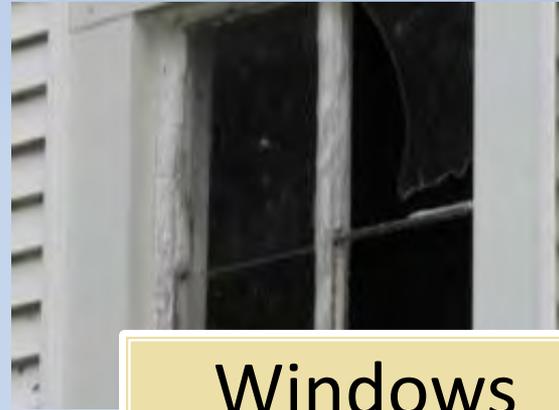
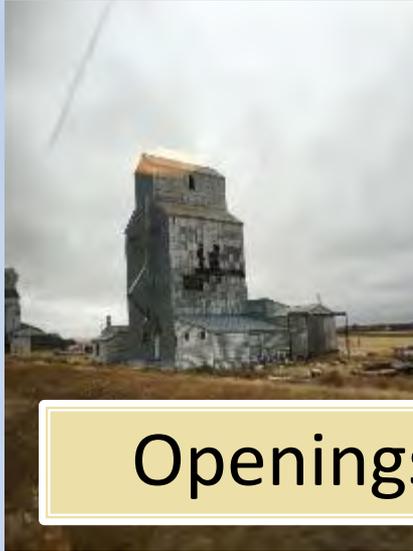


Grit



Trees

Remove/Reduce Access



Vantassel

Remove Access



Air Vents



Exhaust Vents



Chimneys

Importance of Hab Mod

1. Reduces the # of birds that can be present
2. Increases the difficulty of their life
3. Enhances efficacy of other techniques
4. Do what you can as you can even if it seems “too small to matter.”



Penny Principle

Light Pressure

- Use area to sunbathe, digest, and relax
- No permanent connection to the area
- Opportunistic source of food and water



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Medium Pressure

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- Defined roosting areas present
- Permanent or regular source of food, water, and cover available
- No nests

Heavy Pressure

- Regular roosting site
- Food & water readily available
- Hard to move nesting birds



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Nesting is Always
Heavy Pressure

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Effigies

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Eagle Eye[®]

Stephen M. Vantassel



Reflect-a-Bird[™]

Bird-X



Irri-tape[®]

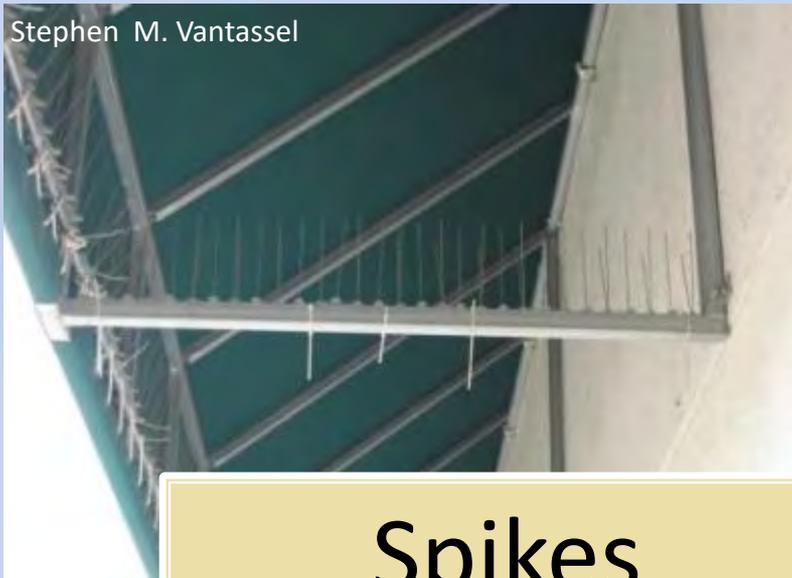
Best Use of Frightening Devices

- Use BEFORE, birds habituate to a site
- In combination with other techniques
- Lethal control increases frightening efficacy

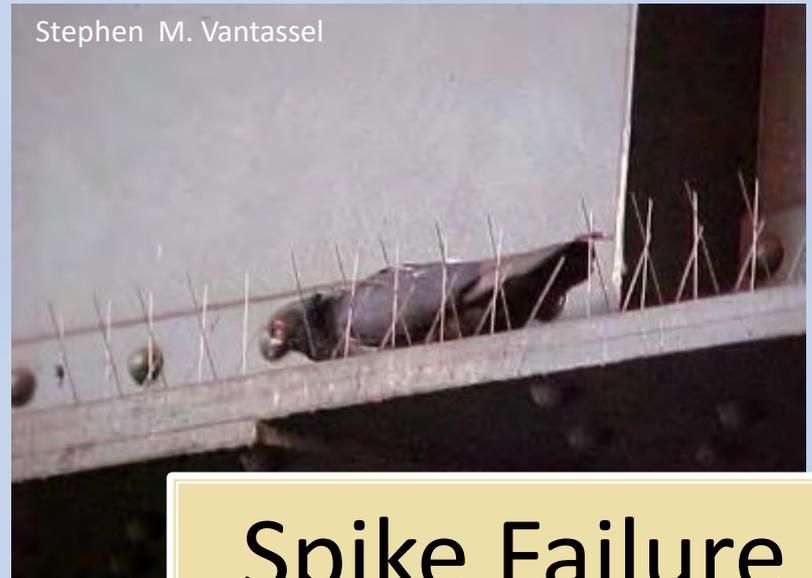


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Too late to haze



Spikes



Spike Failure



Netting



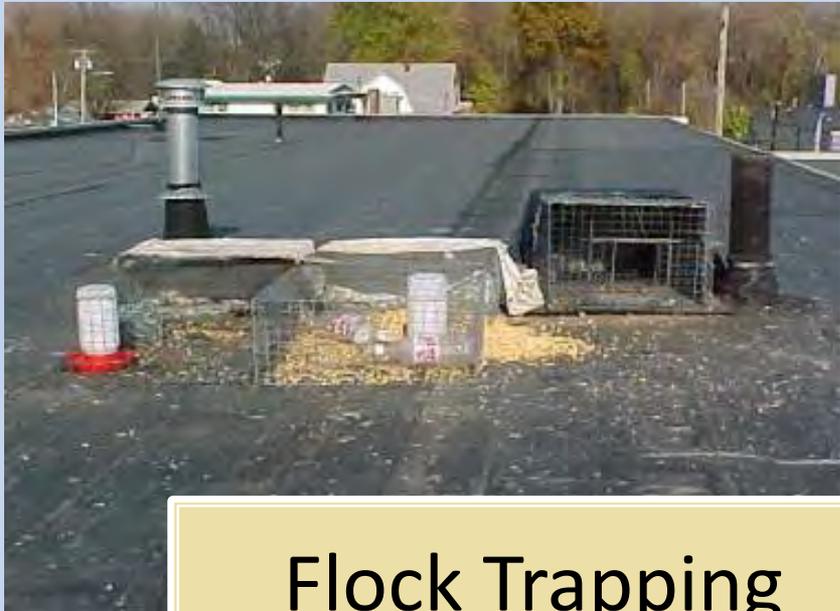
Netting Failure

Electric-Ledge Products

- **Bird-B-Gone**
 - Bird Jolt Flat Track™
- **Bird Barrier**
 - Bird Shock®
- **Bird-X**
 - Avishock™ Bird Track

Solar powered or plug in

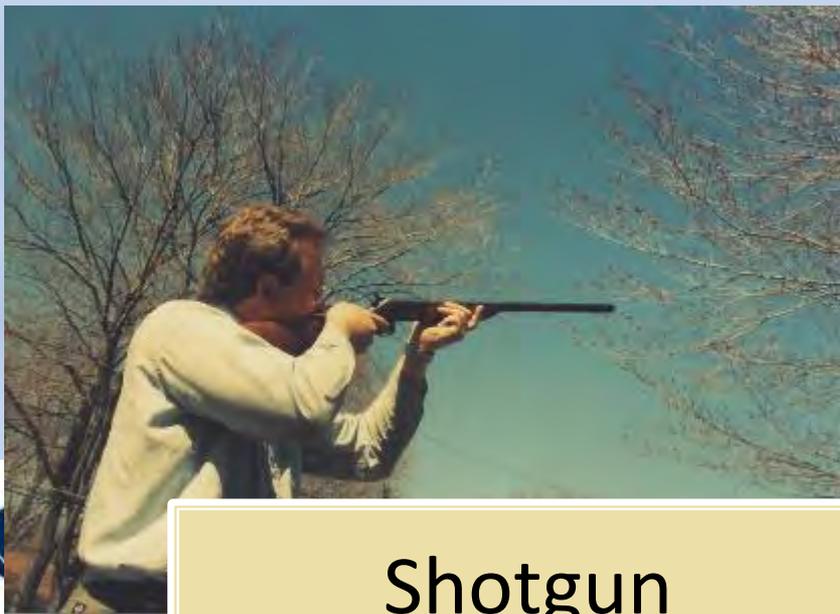




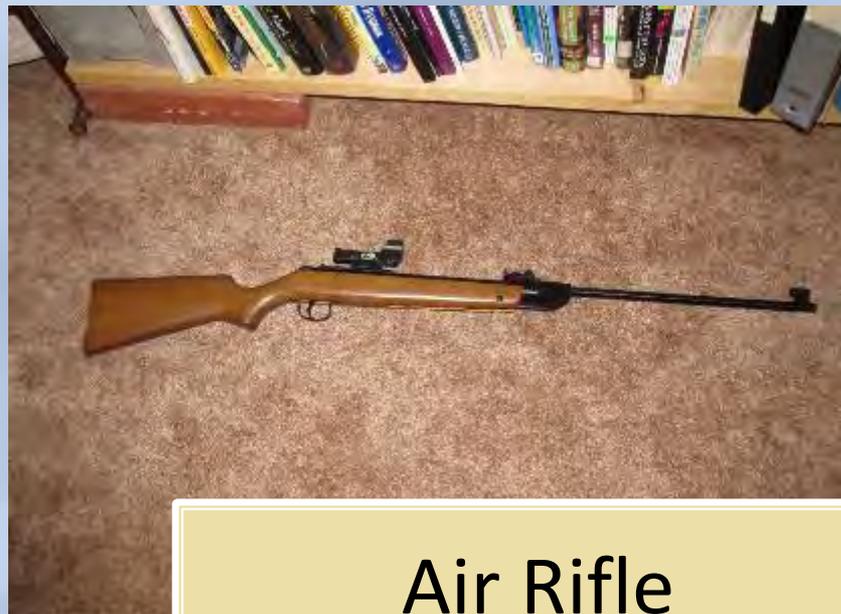
Flock Trapping



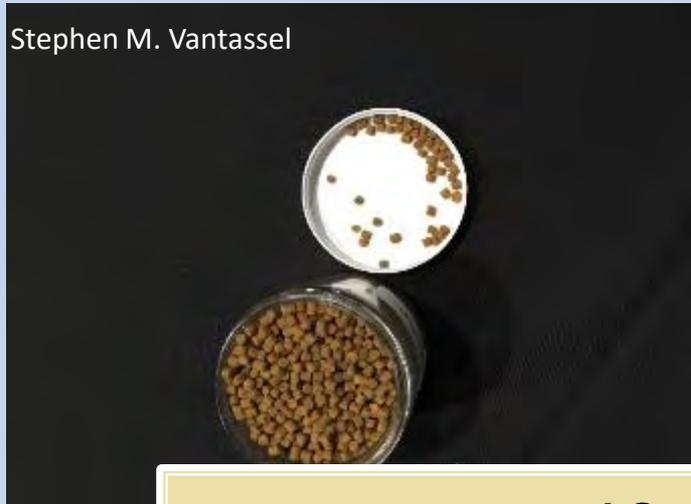
Single Bird Trapping



Shotgun



Air Rifle



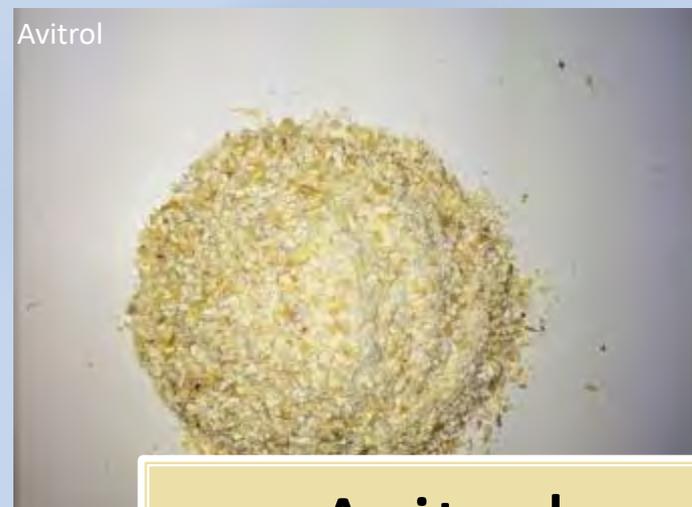
OvoControl® P

Pigeons Only

GUP

\$8/lb/day/80 birds²

Dispenser available (\$210)



Avitrol

Unprotected Birds

RUP

Distress response

Expect some mortality

Questions?



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<https://agr.mt.gov/Topics/Vertebrate-Pests>



Download Pubs Here



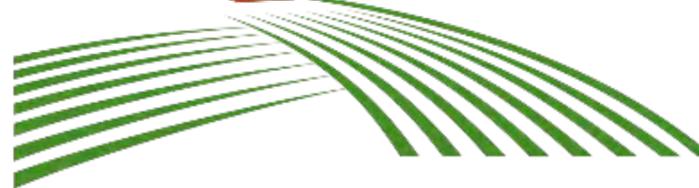


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**STATE DEPARTMENT
OF AGRICULTURE**



MONTANA DEPARTMENT OF
AGRICULTURE

Live Q&A Panel
Topic: Pest management



Ariel Agenbroad
Area Extension Educator
Community Food Systems and
Small Farms



Stephen M. Vantassel, CWCP, ACE
Vertebrate Pest Specialist Montana
Department of Agriculture



Lu Hauger
Associate Extension Educator
Commercial Produce Safety



Casey Monn
FSMA Program Manager
Idaho State Department of
Agriculture

Thank you for all that you do.

FSMA PRODUCE SAFETY WEBINAR SERIES

Tuesdays in April @ 10 am PST | 11 am MDT

April 6 *Be a Bad Neighbor: Making your building less attractive to mice and birds*

Guest Speaker: Stephen M. Vantassel, CWCP, ACE
Vertebrate Pest Specialist, Montana Department of Agriculture

April 20 *Why do I have to do FSMA if I do GAP?*

ISDA Guest Speakers: Sherri Horrocks Third Party Audit Verification
Program Manager; Casey Monn, FSMA Food Safety Program Manager

April 27 *Approaches to Composting Safely*



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