Center of Expertise for School IPM

IPM Refresher

- Integrated Pest Management (IPM) is a smarter, usually less costly option for effective pest management in the school community.
- A school IPM program employs common sense strategies to reduce sources of food, water and shelter for pests in your school buildings and grounds.
- IPM programs take advantage of all pest management strategies, including the judicious use of pesticides.

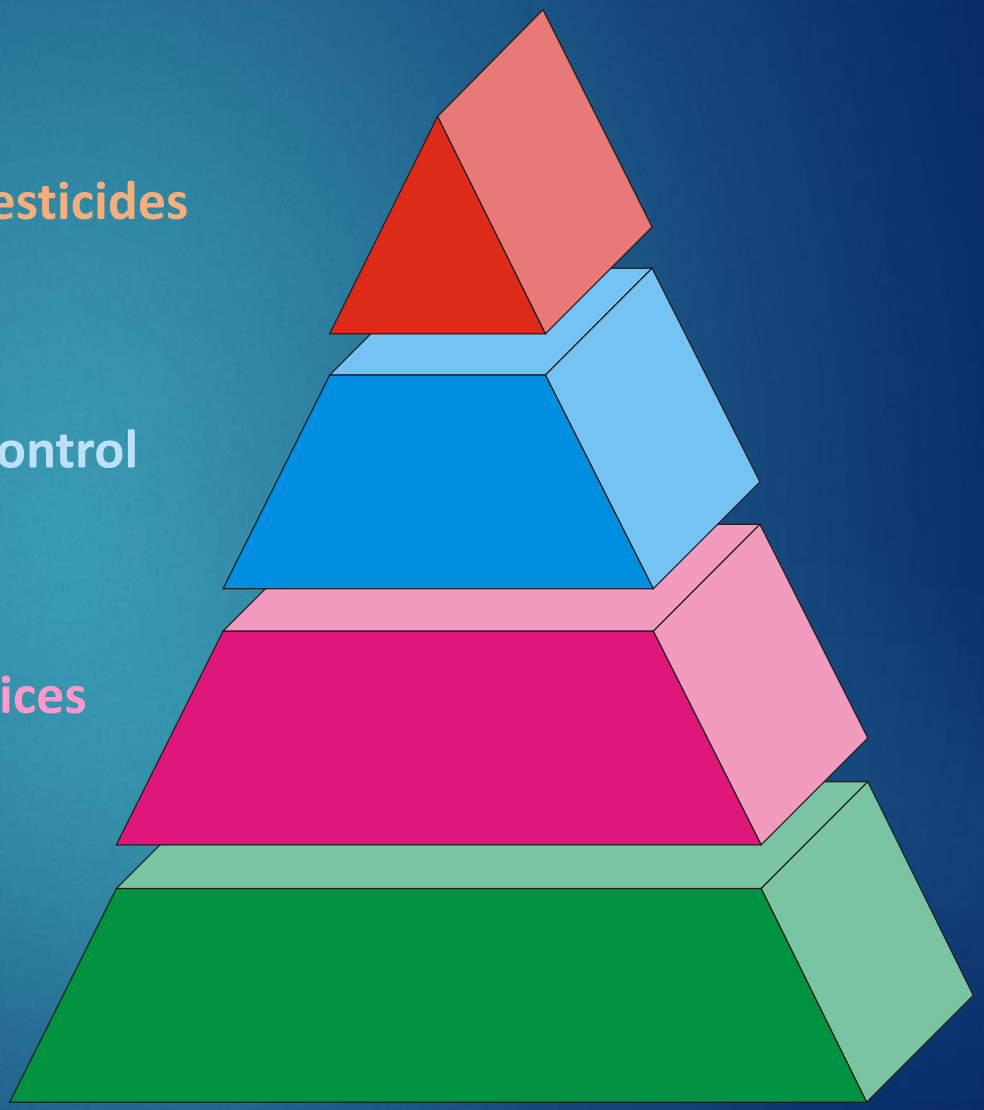
IPM Basics

Pesticides

Physical & Mechanical Control

Cultural & Sanitation Practices

Education & Communication



School IPM Key Concepts

- Inspection, monitoring and identification of pests
- Pest prevention and avoidance through exclusion and sanitation
- Treatments minimize impacts on health and the environment
- Everyone has a role - custodians, teachers, students, principals, and pest management professionals

Benefits of School IPM

- Smart: addresses the root cause of pest problems
- Sensible: provides a healthier learning environment
- Sustainable: better long-term control of pests
- Savings: may reduce energy and pest management costs over time

Presenters

Mark Hardin

- IPM Specialist, Howard Co. (MD) Public School System
- Previously Entomologist and IPM Coordinator, Smithsonian Institution
- Co-author of numerous scientific publications

Dan Lisenko

- Grounds and Maintenance Mgr., Manatee Co. (FL) School District
- Licensed Commercial Pest Control Operator for 30 years
- Aerial mosquito control and playground safety certifications

Lynn Braband

- Sr. Extension Assoc. NYS Community IPM; Cornell Univ.
- Assists NY schools and municipalities in IPM implementation
- Certified Wildlife Biologist and author of numerous journal articles

Marcia Anderson

- EPA's Center of Expertise for School IPM
- PhD in Environmental Management

HOWARD COUNTY
PUBLIC SCHOOL SYSTEM

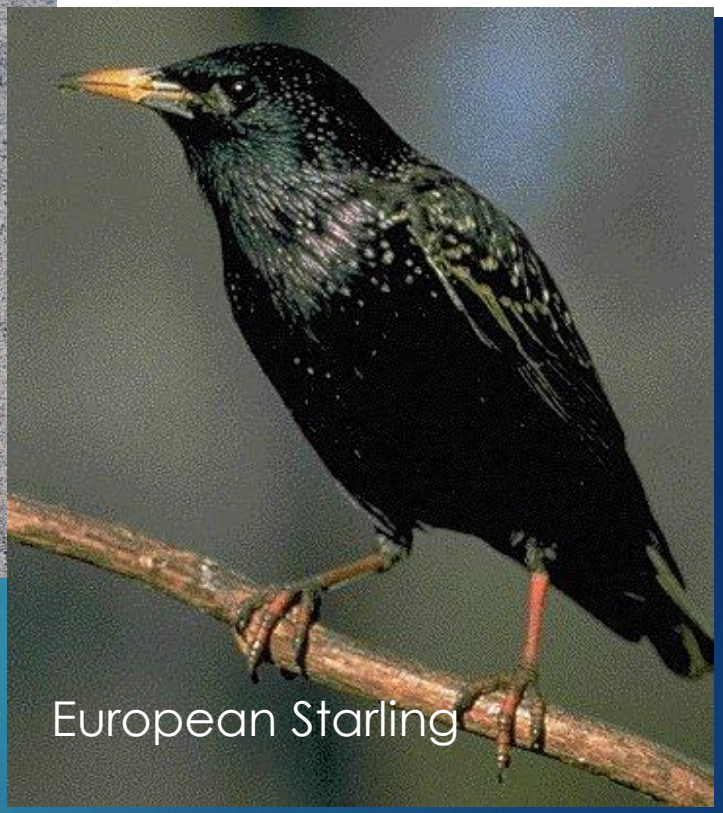
Mark R. Hardin

IPM Specialist

Howard County
Public School System

Only Three Non-Native Bird Species may be physically controlled by removal of individual Birds or Occupied Nests

English Sparrow



European Starling

Rock Dove or Pigeon

Richard Kramer Photos

Nesting native, migratory species require permits to be moved

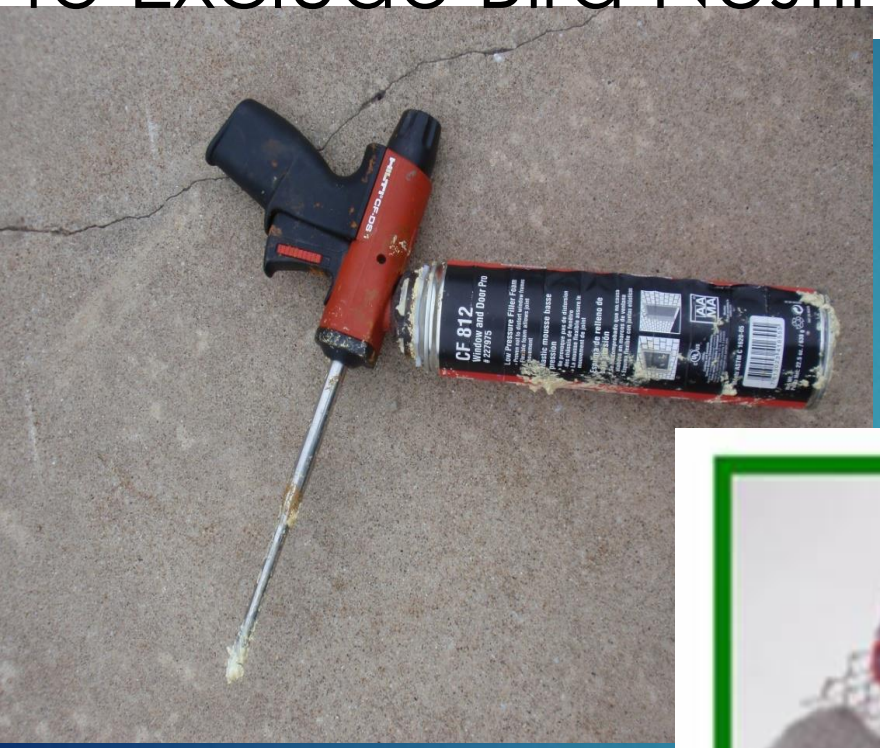
Building design may encourage roosting behavior in Birds

Hollow Lettering and Open Pipes Often Provide Nesting Sights for Birds

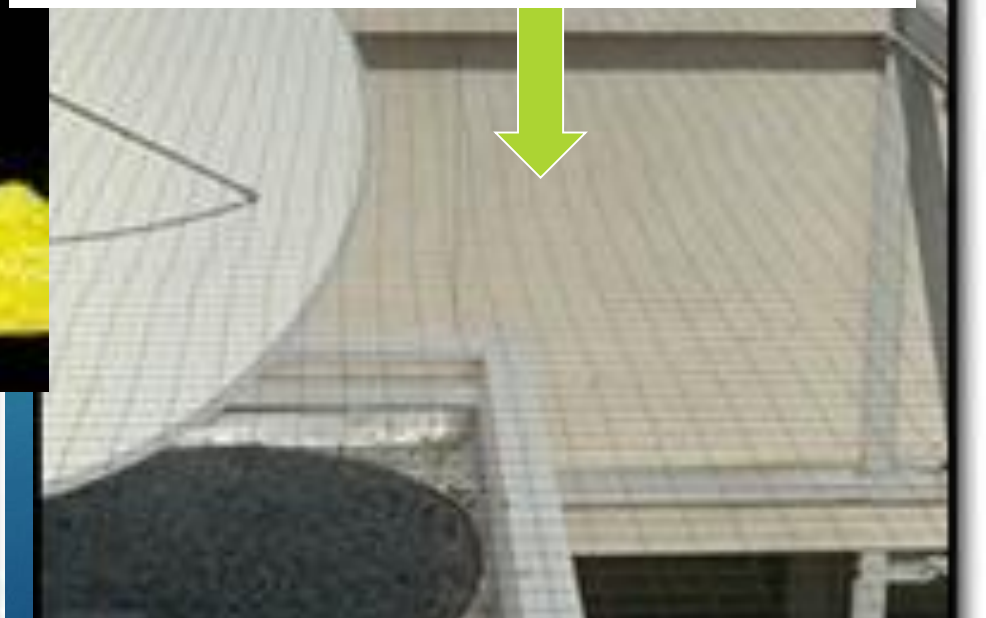
Relatively Small Gaps in Structures Provide Entry for Nesting

Hollow, Pliable, Metal Soffits, etc. Allow Nesting Birds to Push into Gaps

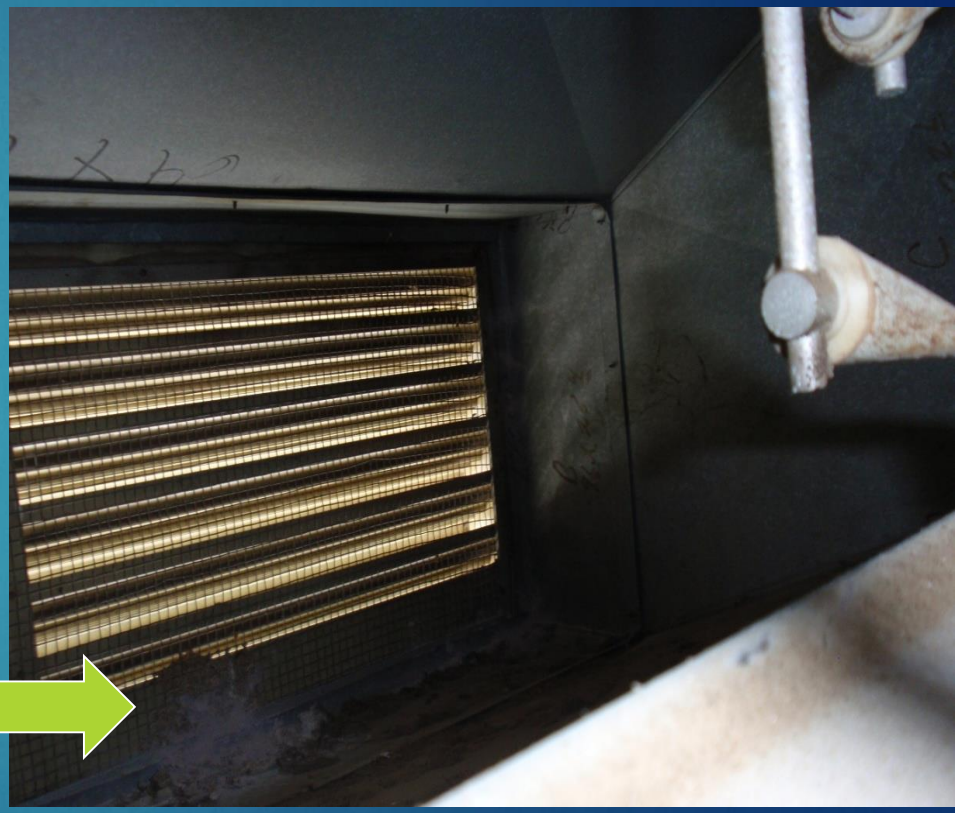
Many Materials are Available to Exclude Bird Nesting



Many Types of Products are Available to keep Birds out or off Structures



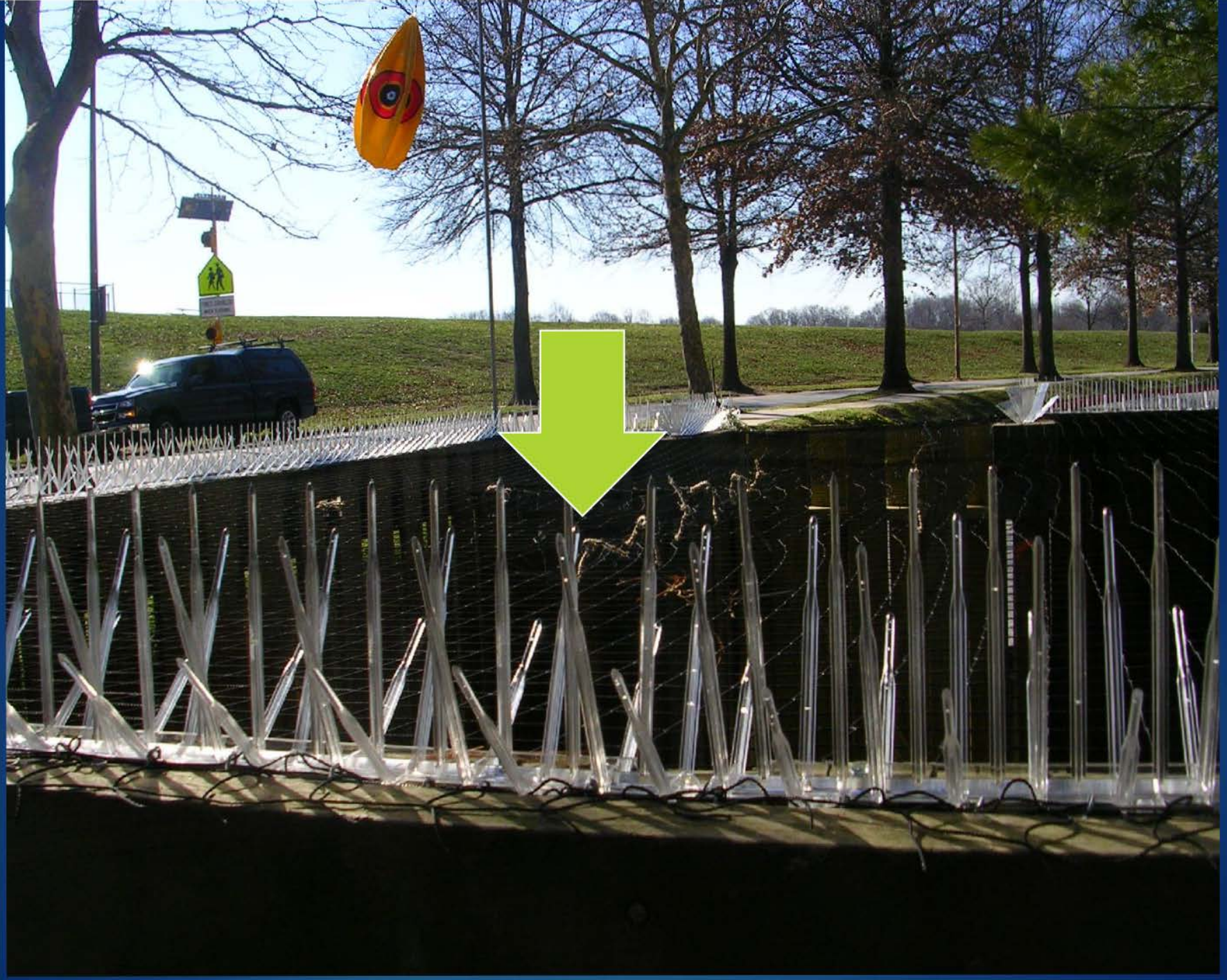
Screening air intakes can prevent Nesting Behavior



Proper Installation Will Determine Success or Failure

Rooftop Air Vents Need to be Screened and Inspected

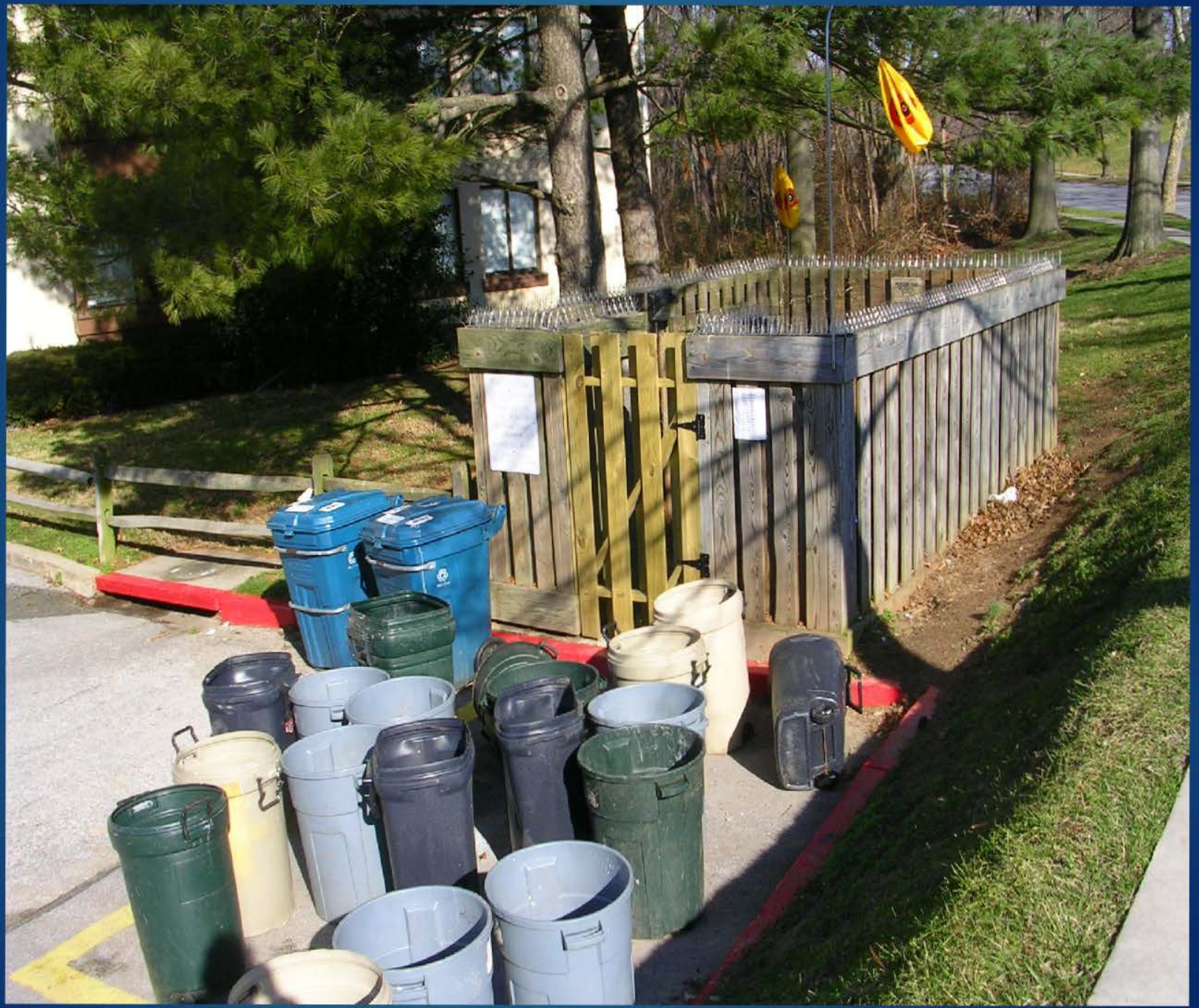
Visual Deterrents



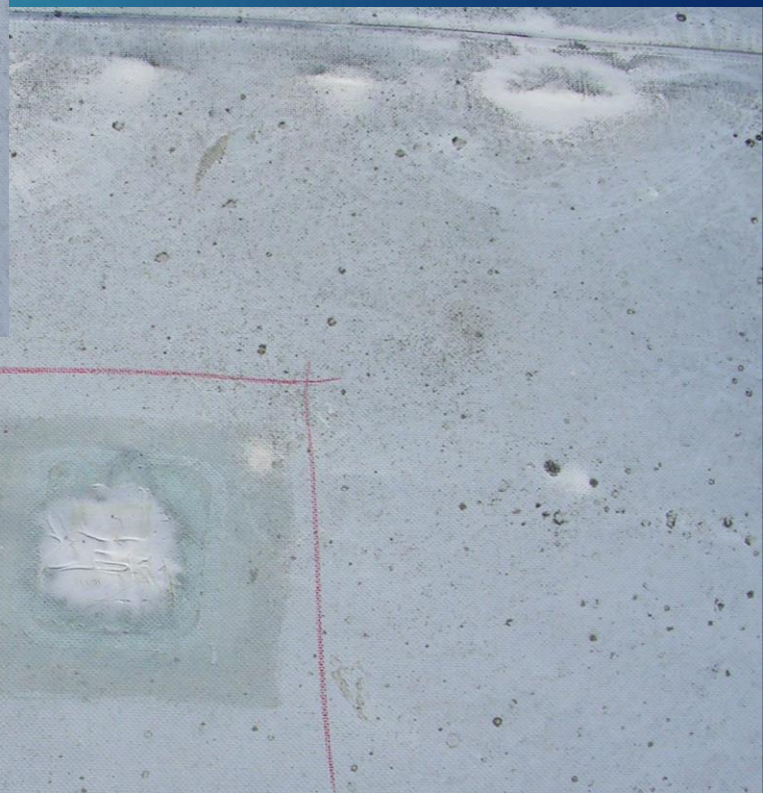
Eric Eaton photo

- Vultures were taking over the roof of one of our High Schools

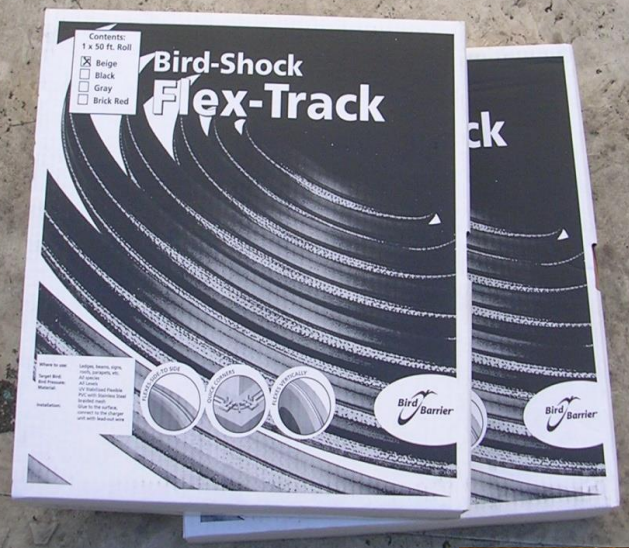

Eric Eaton Photo



Attempts to Repair Vulture Damage To The Roof Failed



Electric track is a non-lethal option for vulture control




Center of Expertise for School IPM

Nuisance Birds

SEAGULLS, PIGEONS, & VULTURES

Dan Lisenko
Grounds and Maintenance Manager
Manatee County Public Schools , Florida

Main concerns:

* Roost areas
* Sanitation
* Safety

*THE FOLLOWING SLIDES WILL BREAK DOWN EACH ISSUE & POSSIBLE RESOLUTIONS TO THE PROBLEMS.

IDENTIFICATION & FAMILIARITY OF LAWS THAT GOVERN TYPES OF SPECIES IS IMPERATIVE.

Roost Areas

1. Covered play areas, walkways, stairways, outdoor auditoriums, building ledges.
2. Exposed beams
3. Pipes: plumbing, air conditioning, drainage
4. Areas that are on properties not owned by the school district

Problem: Pigeons Roosting in the Hurricane shutters

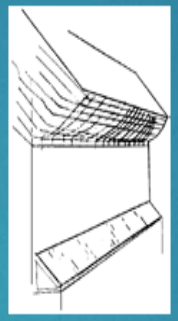
Roost Area Solution:

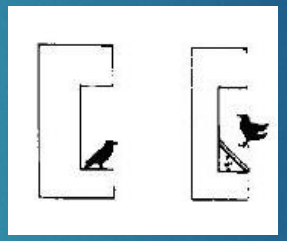
- Spiking

Problem:
Roosting under covered areas

Roost Area Solutions:

- Aluminum wedges





Problem:
Roosting under covered areas

Solution

- Netting

Problem: Birds Roosting on lights and mechanical fixtures

Bird Feces Problems:

- Sanitary issue
- Safety issues
- Mechanical operation issue

Roosting Area Solution

- Spiking

Problem: Overhead Building Roosting

Roosting Area Solution:

- Shock track installation

The key to success to reduce roosting is to not allow birds to become comfortable roosting in that area.

THE PROBLEM (LOOKOUT BELOW…)

Roosting Area Solution:

- Versatility of shock track in unusual or tricky locations

Roost Area Solution Review

The key to success to reduce roosting is to not allow birds to become comfortable roosting in that area.

1. Netting
2. Aluminum wedges
3. Spiking
4. Hot Foot paste
5. Electric bird tracking
6. Guide wire (fishing line, light gauge wire)
7. Effigies
8. Grape Spray
9. Laser

Vulture in Effigy Effort

Did it work?

Agriculture Lab and Black Vultures

Vultures were getting on the backs of pigs in our agriculture program

The Problem: osprey nesting on field lights

Cannot turn on field lights due to Osprey nests

Solution:

- Work with F & W
- Obtain Permits
- Erect new nesting platform adjacent to lights

Safety Issues

- Seagulls taking food out of children's hands (getting pecked)
- Stairways become slippery and hazard because of waste

Sanitation

Bird Feces Health Issues

- Histoplasmosis
- Psittacosis
- Rabies
- C. neoformans
- See the National Institute for Occupational Safety & Health (NIOSH) for more information.

- Roost areas such as covered walkways, covered play areas where birds were roosting an actually defecating on children standing below.
- Heavily used areas had residue left behind from bird defecation. Tables, benches, handrails, sidewalks, stairway walls.

Problem:
Nesting and Bird Debris

- Droppings
- Nesting materials
- Mites
- Mechanical failures

Sanitation Tips

- Pressure wash areas on daily basis during times of high use
- Modify outdoor dining plans to move students inside and reduce interaction
- Implement waste system with tight fitting lids and remove any open trash containers
- Inspect livestock watering sources and make any modifications to reduce bird consumption
- Increase livestock feed waste and storage program to reduce waste and food options for nuisance birds

Wild Bird Program Cost

Financial Impact

Budget ranges for county wide pest exclusion:

2011- $150,601.12

2012- $163,066.50

2013- $34,083.26

2014- $22,782.95

2015- $65,000.00

Overview: Over 50 schools, and 46,000 students

- Installation Costs:
- Netting- $8,500- $9,500 (6-10 yr. lifespan)
- Wedges- $10,000 (no maintenance)
- Osprey- $1,000 (permit); $3,500 (platform)

Maintenance Costs:

* Bird Track- $2,500- $4,500 per track (yearly)

* Vulture work- $5,000

* Budget funds have been made available by having a good team of management, directors, and risk management on board.

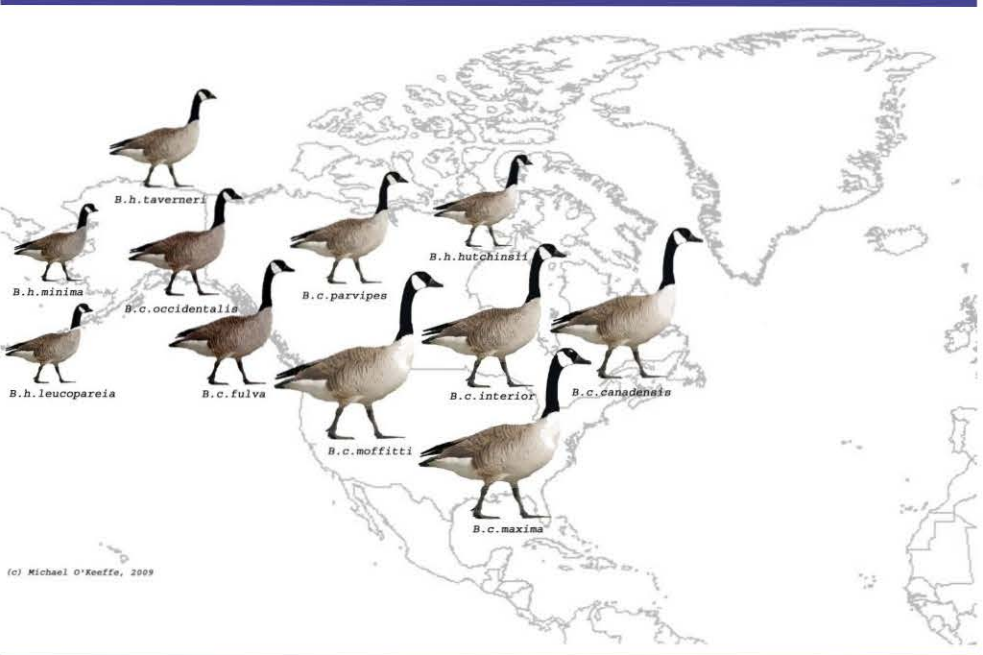
Summary of Tips for Success

1. Address concerns quickly- get budget
2. Build partnerships with nuisance vendors, USDA, fish & wildlife
3. In-depth discussions and partnerships with the school staff
4. Partnerships with neighboring property owners

Dealing with Geese around Schools
(with notes on gulls)

Lynn Braband

NYS IPM Program of Cornell University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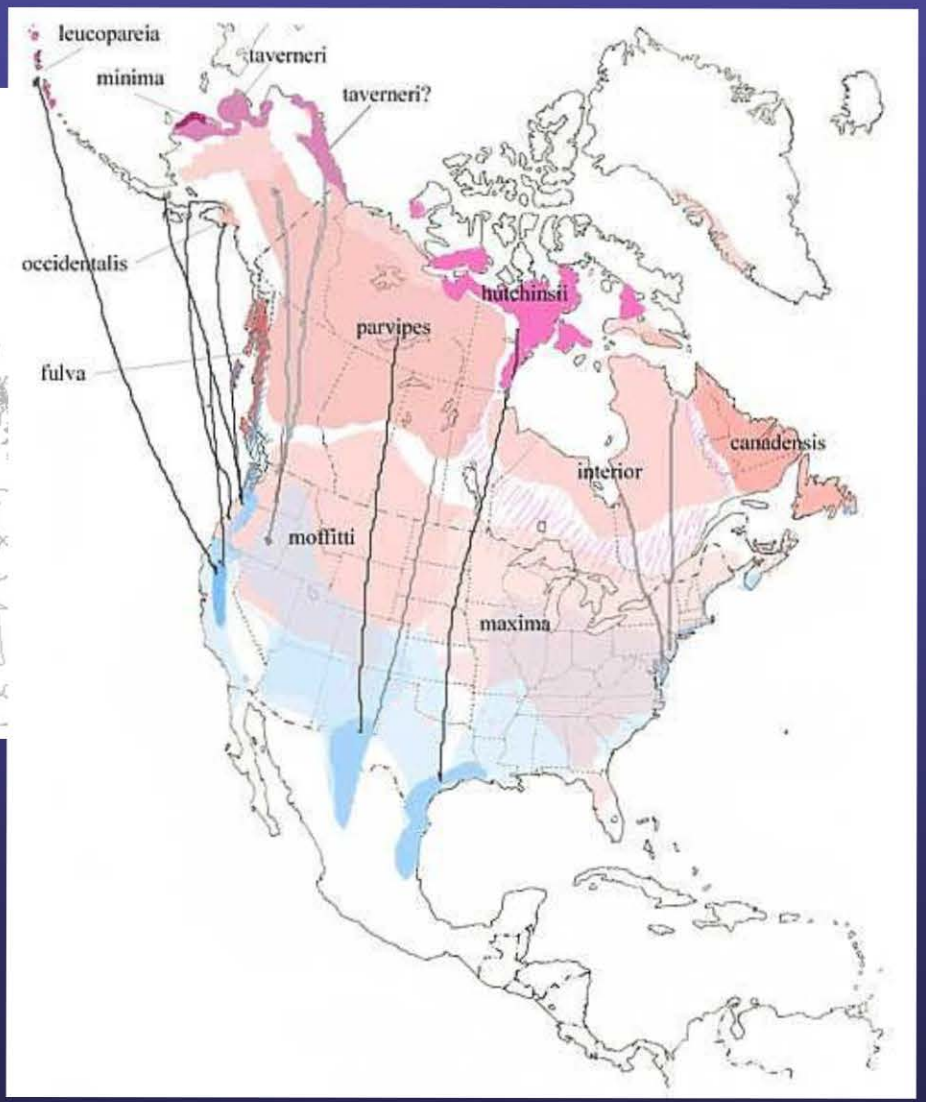
B.c.interior
B.c.canadensis
B.c.moffitti
B.c.maxima
(c) Michael O'Keeffe, 2009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Giant Canada Goose

Nearly extirpated and considered extinct in 1950s

Rediscovered in Minnesota and an intensive reintroduction program in Mississippi Flyway began.

Population now numbers close to 2 million

Natural History

As a whole, Canada geese closely associated with aquatic habitats.

Also found in high tundra, edges of deserts, and remote prairies.

Main requirements are: open area with wide view and a nearby body of water.

Problems

- Fecal deposits
- Water quality
- Disease transmission
- Turf damage
- Traffic hazards
- Noise
- Feathers during molt
- Aggression

Canada Goose Conflicts

Conflicts are common when geese congregate in large numbers – especially in public parks/golf courses.

- Common with residential geese.

Geese produce large amounts of feces that create many problems.

1 adult goose = ≥ lb of feces daily

Canada Goose Conflicts

- Grassy areas and sidewalks of parks can quickly become covered by waste.
- Discourage people from using areas.
- Slipping Hazard
- Potential health hazard
- Clean-up costs

Canada Goose Conflicts

Accumulated feces also harm water bodies.

Can create oxygen depletion and over-nutrification.

May also spread fecal coliform bacteria.

Can result in closures of water sources and swimming areas.

Canada Goose Conflicts

Turf damage:

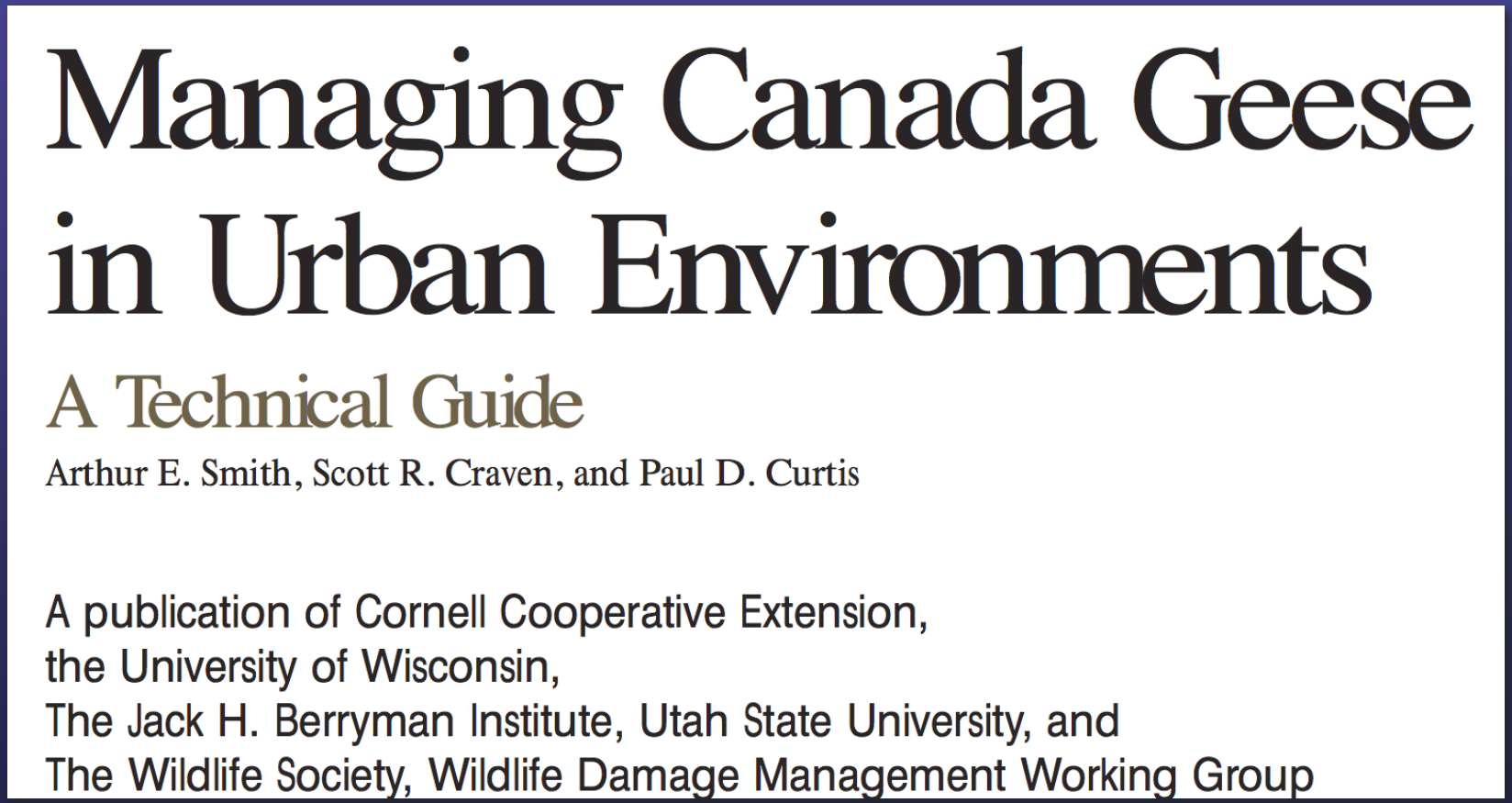
- Parks, lawns, golf courses, athletic fields can become messy, trampled, even denuded.

Canada Goose Conflicts

Nesting geese may attack people/pets that come to close to nest/goslings.

Community Issue

http://wildlifecontrol.info/pubs/Documents/Goose/Managing%20Canada%20Geese.pdf



Managing Canada Geese in Urban Environments

A Technical Guide

Arthur E. Smith, Scott R. Craven, and Paul D. Curtis

A publication of Cornell Cooperative Extension,
the University of Wisconsin,
The Jack H. Berryman Institute, Utah State University, and
The Wildlife Society, Wildlife Damage Management Working Group

Community Issue

Management Techniques

- Repellents
- Feeding bans
- Exclusion
- Habitat modification
- Lethal control
- Round-ups
- Reproductive control
- Harassment

Integrated Pest Management

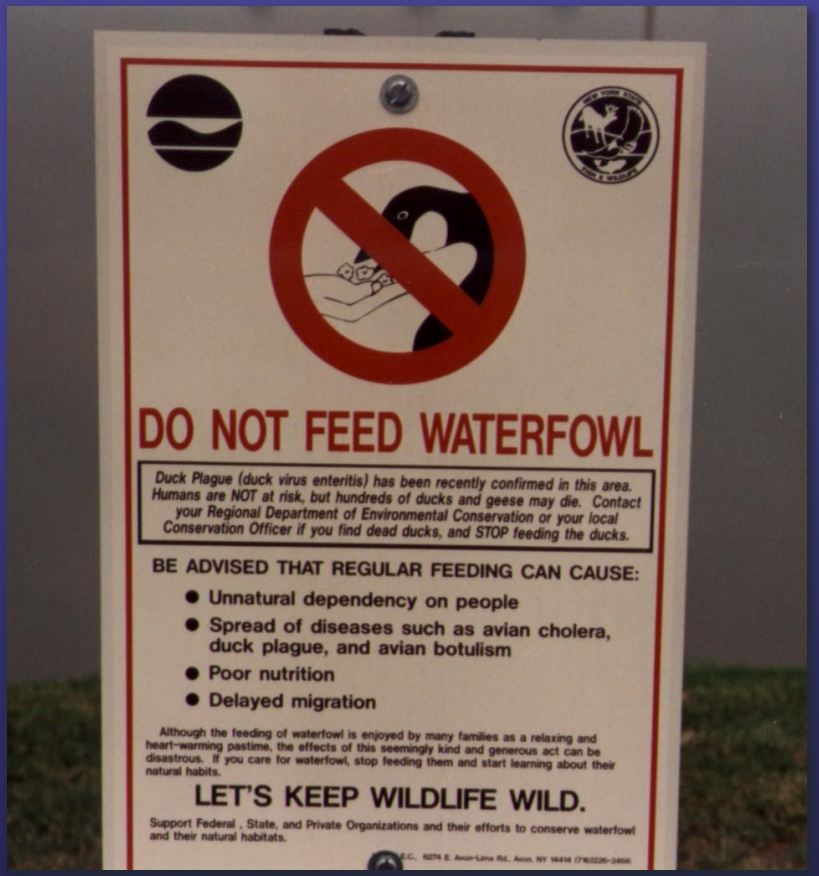
- Systematic use of a variety of techniques is usually the most effective

Chemical Repellents

- Methyl anthranilate & anthraquinone products
- Originally, apply directly on turf or water
- MA aerosol (fogger)
- Availability varies by state
- Certified applicator
- Repeated applications often necessary: $$$

Feeding Bans

- Educational outreach
- Need to be enforced



Exclusion

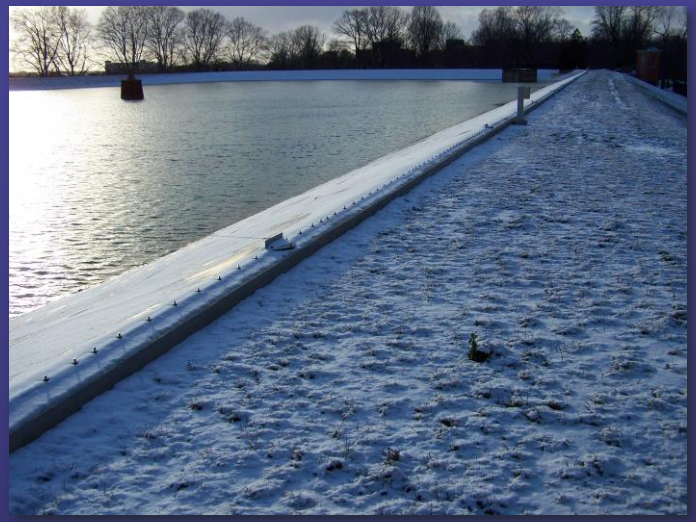
Most effective on small ponds and shorelines of larger water bodies

Exclusion: fence/barrier at least 1 foot high along water's edge.

- Hedge of dense vegetation also effective and more aesthetically pleasing.
- Stone wall/large rocks
- High/vertical bank
- Wire fence

Pond Grid Wires

Parallel Lines



Habitat Modification

- Allowing grasses to grow to a higher length can also help discourage Canada goose grazing.
- Geese prefer short grasses where it is easier to access the shoots of the plants.
- Avoid fertilizing as much as possible.
- Plant less-palatable grass species – geese show a preference for Kentucky bluegrass; dislike tall fescue. DILEMMA
- Tall grass can also obscure views of approaching predators.
- Low maintenance natural meadows or wildflower areas prevent grazing.

Habitat Modification

- Planting trees in open areas can also limit views of potential threats.

  - Also makes it more difficult for geese to take flight, because they gain altitude slowly.
- Trees with dense canopies and large rocks (2'+) near water edge hinder goose landings and takeoffs.
- Plant ground cover species in sensitive areas:

  - geese will not eat common periwinkle, Japanese pachysandra, and English ivy.

Lethal Control

Protected by migratory bird treaty act.

Outside of hunting seasons & regulations, permit needed.

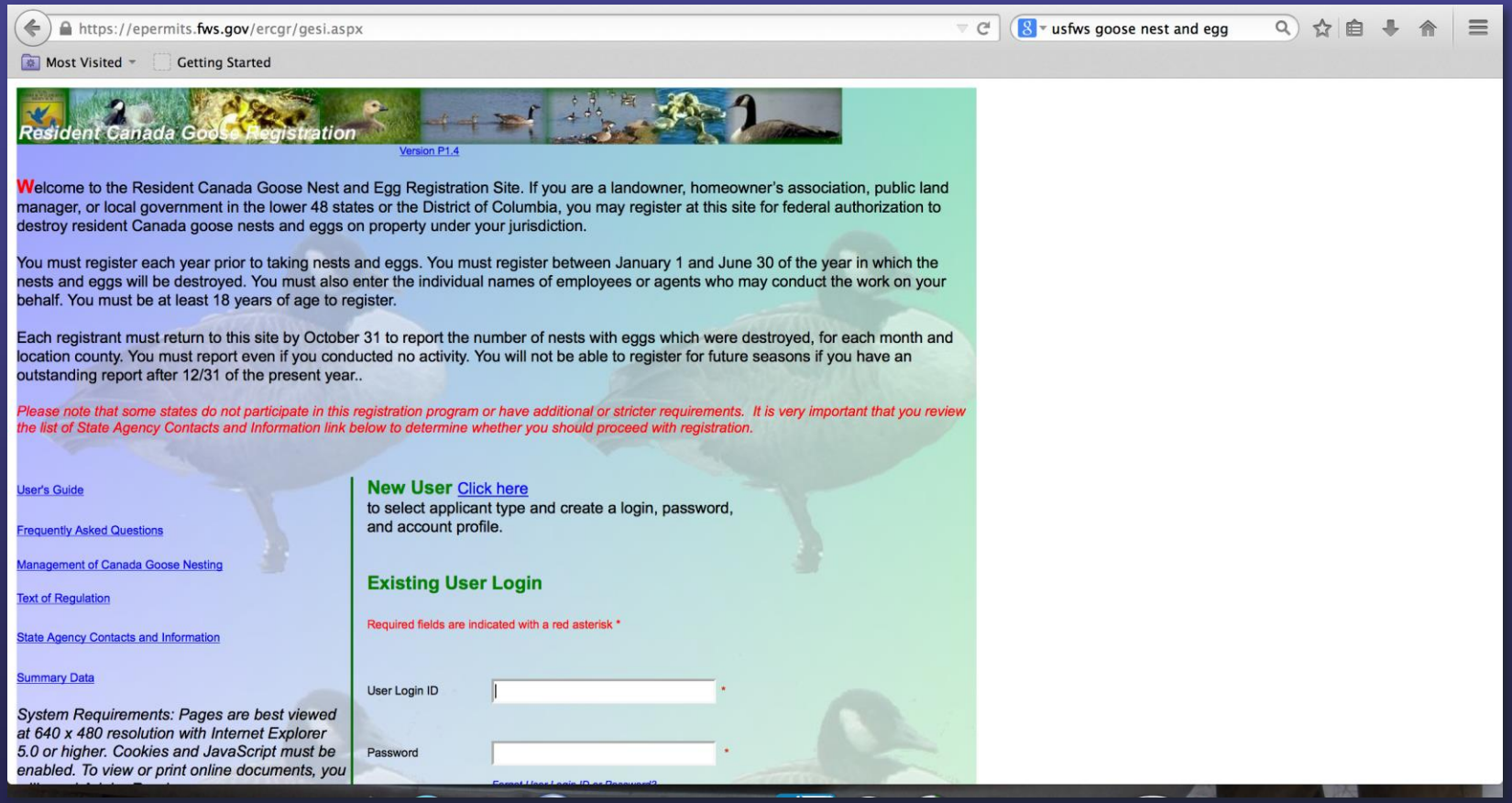
Contact state wildlife agency or state office of USDA-APHIS-Wildlife Services.

No legal toxicants.

Reproductive Control

- Adults (OvoControl G®) NO LONGER AVAILABLE
- Eggs: permit MAY be required.

US FWS Goose Nest and Egg Registration Site https://epermits.fws.gov/ercgr/gesi.aspx



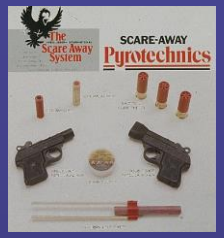
Cornell University
Cooperative Extension

Round Ups

- Permit required.
- Euthanasia
- Translocation

Harassment Techniques

Pyrotechnics



Lasers

Distress calls

Dogs

Abatement falconry

Remote controlled boats/cars

Miscellaneous

Harassment Techniques

Cornell University Research: Techniques Evaluated

- Border collie
- Pyrotechnics
- High-powered laser
- Remote controlled boat
- Strobe light
- Distress call device

Cornell University Research: Most Effective

Dogs during the day

Lasers at night

Delaying habituation

- Movement
- Install/Uninstall
- Incorporate reinforcement (Israel's yellow scarecrows)

Ring-billed Gulls

Feeding Bans

Grid and Parallel Lines

Heli-kites

Cornell University Research: Bird Damage to Small Fruit Crops

Air dancers

Thank You for Your Attention


Questions?
For More Information:
www.epa.gov/pestwise
school.ipm@epa.gov |
844-EPA-SIPM