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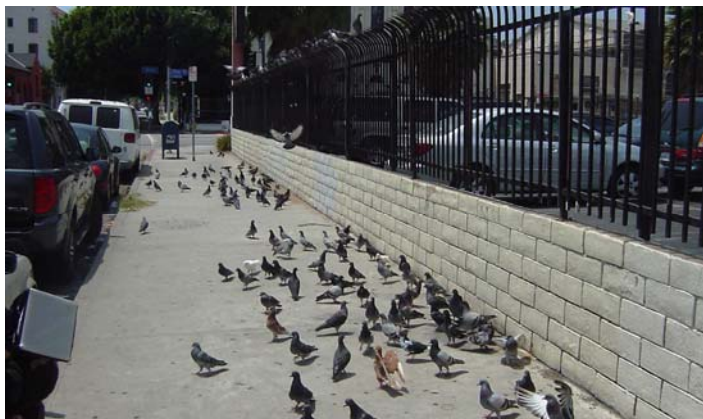
PIGEONS IN SCHOOL

AN IPM APPROACH

The ubiquitous pigeon (*Columba livia*) can be a serious pest, especially in the southwestern states where children often eat outdoors. School properties have all the necessary ingredients for birds including food, water and prime nesting locations. The unlimited resources that schools provide can support the rapid build-up of large populations. Pigeons naturally have strong site fidelity and the general public often mistakenly treat these birds more as pets, rather than pests that can represent a health hazard.

Pigeons are unique in their intelligence and opportunistic behavior. They learn the times of day when food is available at the schools and arrive at these locations like clockwork. The birds promptly respond to the school bell and are able to distinguish between school days and weekends.

Fecal matter accumulation can be corrosive to building materials and represents a growth medium for histoplasmosis spores. Rooftop solar power collectors, increasingly popular in schools, provide an additional attraction for the birds that foul the sensitive surfaces.



Loafing pigeons

Just like rodents, pigeons are considered a public health pest issue and not just an aesthetic one. Annually, pigeons cause economic damage in the US, estimated in excess of \$1 billion. Pigeons can also be carriers of disease organisms and ectoparasites that can be transmitted to humans. Due to the concentration of birds and their feces, especially where students are active, the risks for disease transmission are heightened in a school environment.

Consistent with IPM practices, elimination of feeding, watering, roosting, and nesting sites is critical for long-term pigeon control. Discourage faculty and students from feeding pigeons, and encourage cleaning up food sources and standing water.

Pigeon Mitigation Strategies at Schools

Follow the first principle of IPM: minimize food, water, and shelter. Pigeon management may include, a) sanitation, b) exclusion, c) physical removal and, d) population control.



Strategy	Benefits	Limitations
Exclusion		
Nets, spikes, electrified strips, wires, coils and post-and-wire systems	Provides physical barrier; effective for limiting access	Can be costly; moves birds to other areas
Effigies, frightening devices and sound systems	Low cost. Suitable for low pressure sites	Limited efficacy; as birds become unafraid
Chemical repellents – mists and gels	Can keep birds from specific areas or surfaces	Repeat treatments are required; cleanup of residues
Removal		
Trap and euthanize	Tangible and immediate reduction in bird numbers	Labor intensive; objections from students/staff
Population Control		
Contraception	Lowers the population of birds; effective long-term	Takes time to lower population
Nest destruction	Effective for keeping birds from nesting on school property	Labor intensive; only effects birds nesting on site; student/staff objections
Egg Removal	Effective in keeping eggs from hatching	Labor intensive, impractical; student/staff objections
Not Ever Recommended		
Shooting	Tangible and immediate effects	Inappropriate and illegal at schools in most states
Poisoning (Avitrol)*	Tangible and immediate effects	Inappropriate at schools

***In October, 2010, the sole manufacturer of Avitrol (the Avitrol Corporation), announced the shutdown of their business. There is no commercially available avicide on the market today.**

IPM for Pigeons

Although all of the tools have their place, pigeons are very adaptable and require an integrated program of pest management ("IPM"). One-dimensional pigeon control strategies at a school are typically doomed to fail. Furthermore, due to their prolific breeding capacity, simply killing birds has little sustainable effect and the remaining flocks will quickly backfill the population void.



Clearly the owl was an ineffective deterrent

Nearly all techniques are effective short-term, even a plastic owl. The real question is the long-term value and sustainability of the different methods. For example, while trapping is very effective in removing adult birds it has little long-term effect on the population, unless it is conducted regularly and exhaustively.

1. Exclusion

Pigeons can be excluded from buildings by blocking access to indoor roosts and nesting areas. Openings to lofts, steeples, vents, and eaves should be permanently blocked (using wood, metal, glass, masonry, rust-proof wire mesh, or plastic or nylon netting). Roosting on ledges can be discouraged by changing the angle of the ledge to 45° or steeper. Perching and loafing areas can be made unattractive with stainless steel spikes. Electric shock bird control systems are also available for repelling pigeons. Although these devices and their installation are usually labor intensive and/or expensive, their effectiveness can often justify the investment. Nevertheless, under the best of circumstances, exclusion moves the birds from one location to another and does not address the underlying population of birds.

2. Frightening Techniques

Noise-making devices are usually disturbing to people but have little long-term effect on roosting pigeons. High-frequency (ultrasonic) sound, inaudible to humans, can have an inconsistent response in birds. Firecrackers and other pyrotechnics may have a temporary effect but have many limitations and often fail to provide long-term control, especially against pigeons. Effigies, models of owls, hawks, snakes, and cats vary in effectiveness, depending on how realistic they are and how often they are

moved to new sites. When used as the sole tactic, harassment can at best encourage pigeons to move somewhere else. As pigeon populations increase they eventually create a larger "demand" for habitat. This demand causes pigeons to become increasingly resistant to frightening techniques.

3. Repellents

Sticky substances (polybutenes) discourage pigeons and other birds from landing on treated surfaces, but are not recommended since they can adhere to and foul the feathers of any bird which comes into contact with them, and may be harmful to smaller species. An aerosol repellent (methyl anthranilate) may be used to deter birds from larger areas although may be inappropriate at schools due to the potential for respiratory hazard.

4. Live-Trapping

Live-trapping of pigeons can be an effective method of removing adult birds. Traps must be checked frequently to remove the captured pigeons – local codes and ordinances should be checked. Various humane methods are used to dispose of the trapped pigeons, but under no circumstances should they be taken away and released since the pigeon's homing ability will lead them right back to their starting point. Furthermore, trapping can be controversial at schools as staff and students may object to euthanizing birds.

Pigeons breed rapidly – 2 eggs/clutch and up to 6 clutches/year. Left unchecked, just five mating pairs can produce up to 400 offspring in only two years. While removal options often appear to offer immediate results, these methods alone do not have a sustainable impact on the overall population due to the bird's rapid reproduction abilities. In other words, removal alone can often result in a cycle of reduction followed by rapid repopulation.



Air exchange unit covered in pigeon excrement

5. Contraception

Contraceptive technology (OvoControl® P - www.ovocontrol.com), birth control for birds, offers an effective new tool for pigeon management. Fed daily with an automatic feeder, typically positioned on a school rooftop, the contraceptive bait interferes with egg hatchability. Due to the rapid turnover of the population and relatively short lifespan of pigeons (2-3 years), a contraceptive tool is very effective in reducing bird numbers. Similar to the workings of an insect growth regulator (IGR), contraception causes a steady and predictable decline of the pigeon flock.

Pigeons at schools are typically characterized by a single flock that either nests, feeds or loafs at the site. Flocks can range from 20 to 200 birds. Since it is normally a relatively discreet flock, the population can be managed without significant interference from immigrant birds.

While pigeons share food resources with other flocks, they defend roosting and nesting areas from outsiders. Therefore, removal of a flock either with poison, shooting or trapping, only provides temporary relief since the attractive nesting area(s) remains and a new flock will quickly move in to fill the vacant habitat.

With contraception, the population never goes to zero and a certain portion of the population always remains to defend the nesting habitat. Nevertheless, with a contraceptive program it is not unreasonable to expect the population to decline to 10% of the starting point. Recently collected data shows an 88% decline in the pigeon population over 28 months.

When used together with other sustainable tools in true IPM fashion, contraception is suitable for most school settings, providing a very safe and effective solution to manage a pigeon population.

Conclusions

In summary, the management of pigeons at a school is often a complex challenge requiring an integrated program of bird management. Effective programs typically combine different tools consistent with site and school requirements. Although other management strategies can be effective, controlling reproduction is essential for the long-term and sustainable control of the underlying population of pigeons.



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Credits

This document was reviewed by Dawn H. Gouge (University of Arizona), Alexander MacDonald (Innolytics), Mark Shour (Iowa State University), Lynn Braband (Cornell University), and Janet Hurley (Texas AgriLife Extension).

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OvoControl fed daily to pigeons by an automatic feeder, positioned on a school rooftop.