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William D. Fitzwater
Secretary, National Animal Damage Control Association, Albuquerque, New Mexico

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SOLUTIONS TO URBAN BIRD PROBLEMS

WILLIAM D. FITZWATER, Secretary, National Animal Damage Control Association, Albuquerque, New Mexico 87110.

ABSTRACT: A survey of municipalities across the country indicated that pigeons were the most widespread aerial nuisance in urban areas. These were followed in order by: blackbirds, starlings, house sparrows, woodpeckers, crows/ravens, swallows/swifts, waterfowl (Canadian geese, mallards, and coots), and gulls. With somewhat lesser frequency were robins, vultures, raptors, herons/egrets, mockingbirds, waxwings, and monk parakeets. Local bird problems were mostly handled by: USDA-APH1S-ADC, Health Department, City/County Animal Control, Landowner/householder, PCO, State Wildlife Agency, Police Department, and Mayor's office.

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Most avian pests in our cities have been imported from the Old World like most of us, but some native species have been adapting to an urban life style. This is probably in self-defense as urban sprawl occupies more and more of the country's land mass. However, the Mediterranean rock dove, English sparrow, and European starling, all imports, still lead the field in nuisance value though some native species are becoming pests in innovative ways. An example of just how people-oriented the imported species are is shown in a bird count of suburban western Washington (DC) in comparison with the highly urbanized eastern part of the District (Williamson & DeGraaf 1981)(Table 1).

Table 1. Bird count in Washington, District of Columbia.

Species	Eastern (urban)	Western (suburban)
Feral pigeon	52.68	1.13
House sparrow	50.75	20.38
European starling	13.38	11.31
Robin	1.38	5.63
Mockingbird	1.13	5.06

In an effort to gauge the variety of avian species considered pests and their nuisance potential, a questionnaire was sent to a random selection of municipalities in the continental United States recommended by employees in the USDA-APHIS-ADC who were aware of problem areas. Where there was no lead to an agency that might be involved in bird control, the questionnaire was directed to the municipal government head (Mayor/City Manager) with a request to pass it on to a person knowledgeable with the problem. Questionnaires were mailed to at least four municipalities in each state with the exception of Hawaii. Half of these went to cities with a population of over 100,000 and the rest to those under 50,000. Of the 208 questionnaires mailed out, 98 (47.1%) were judged suitable for compiling the data in the following report. While no claim can be made for its statistical validity, the questionnaire did give an insight to the agencies involved in bird control work, the groups of birds considered pests, and some of the control methods used.

The response to the choices they were given on agencies involved in bird work were as follows (many respondents checked off more than one)(Table 2).

As the expertise of the respondents was often political rather than ornithological, the questionnaire was listed for groups rather than individual species of birds. These data on the prevalence of the problem species as shown in Table 3.

Pigeons

In the original questionnaire the respondents were given the choice of "feral" and "native" pigeons, but too many checked off "native" as the source of their problems. Inasmuch as city "pigeons" are all descendants of the rock dove (Columbia livia) brought to this country with the early immigrants as poultry, they are assumed to be native by the layman. Therefore, the writer was forced to lump both answers together and ignore the fact that, in his own experience, there are areas where mourning doves (Zenaida macroura) and white-winged doves (Z. asiatica) are problems. The pigeon is spread over the whole country and is a common sight in urban areas from small rural hamlets to the "Big Apple."

The most conspicuous problem pigeons cause is the tremendous amount of feces they process. These accumulations are not only odoriferous, slippery, and unsightly but they pose a health hazard as well. Important diseases like salmonellosis, ornithosis, cryptococcus, and histoplasmosis organisms are commonly found in fecal collections. Their

acidic composition also erodes metal and even stonework. Control of pigeon problems is handicapped by the same factor that operates against effective control of all other bird problems - public unacceptance of the fact that birds are not necessarily all good. The most permanent control is the alteration of their environment. Roosting niches should be removed by architectural design or remodeling. They can be made untenable with bristling wires, such as NIXALITE[R], or less permanently with the sticky pastes along preferred ledge sites, such as 4 THE BIRDS'*. Screening should be used to keep them out of lofts and other sites where they can nest out of the weather. Their water sources, such as rooftop air conditioners, should be eliminated by screening. Food supplies are more difficult to remove as these birds have become well adapted to the many sources of food, intentionally or accidentally, available to them in the urban environment.

Table 2. Agencies involved in municipal bird control.

Agency	Percent
USDA-APHIS (federal)	32
Health Department	27
Animal Control (City/County)	24
Landowner/Householder	22
Pest Control Operator	17
State Wildlife Agency	17
Police Department	12
Mayor's Office	8
Other[1]	8
Sanitation Department	5
Fire Department	4

While they can be scared by visual and acoustic repellents, the results are temporary. Trapping is slow and labor expensive, with difficult-to-measure results as "body counts" having the same validity as those during Vietnam. The swinging "bob-type" entrances used by pigeon fanciers are generally more effective, but funnels are cheaper to make. Low profile traps (20-25 cm high) are felt to be more effective (Kreps 1974). "Ash-sifter" traps (non-automatic traps), in situations where they do not need constant observation, may be used profitably. It is advisable to prc-

Table 3. Frequency birds were reported as nuisances.

Avian groups	Percent
Pigeons	71
Blackbirds	54
Starlings	42
Sparrows	25
Woodpeckers	18
Crows/Ravens	14
Swallows/Swifts	13
Waterfowl	13
Gulls	11
Robins	9
Vultures	7
Raptors	5
Wading birds	3
Waxwings	3
Mockingbirds	2
Monk parakeets	1

bait traps and trap sites in rotation rather than continuously trap one particular location.

Population reduction as a method of area control for an extended period requires a high percentage kill rarely achieved. Shooting, particularly on a campaign style, is generally considered ineffective, but it can be used under certain circumstances (Hoy & Bivings 1987). The chemosterilant ORNITROL[R], while attractive psychologically to anti-control individuals, is slow, requires repeated treatments, and is generally ineffective in reducing an individual flock that is constantly recruiting birds from adjacent flocks.

To move individual flocks from particular sites, AVITROL[R] is the chemical of choice. This is a toxicant. However, it is exposed in such diluted quantities only a portion of a flock is fatally affected, but their reactions serve to frighten the remainder resulting in an area repellency. Where they can be used, artificial perches saturated with endrin or fenthion (RID-A-BIRD[R]) are very ef-

fective in warehouse areas (Jackson 1978).

While several toxicants can be used for widespread poison campaigns against city flocks, these present public relations problems that must be handled carefully. Strychnine is available in ready-made baits such as B&G's PIGEON 9[R]. While it is fast-acting, a slower material with less secondary hazard is STARLICIDE[R]. Some states have a registration to use the rodenticide diphacinone against pigeons. The city-wide one-shot poison program gives immediate reduction in the pigeon problem; and if over 80% of the population is killed the results last for a time, but it must be done quickly and inconspicuously, accompanied by favorable media coverage and swift pickup of the dead birds.

Ordinances have been passed to restrain the public from feeding birds in parks and other public places. Besides being difficult to enforce, the effectiveness of these rules is questionable.

Blackbirds/Starlings

As mentioned above it was felt attempting to name the species of "blackbirds" involved in a roost would be confusing in view of the poor taxonomic background of most of the respondents. Thus "blackbirds" include: redwing blackbirds (Agelaius phoeniceus'). Brewer's blackbirds (Euphagus cvanocephalus*). cowbirds (Molothrus ater), grackles (Ouiscalus spp.), and, less commonly, yellow-headed (Xanthocephalus xanthocephalus) and rusty blackbirds (Euphagus carolinus). Also starlings (Sturnus vulgaris) are inevitably lumped in the group by the layman. A survey of urban blackbird/starling problems by Sally Erdman (1982) showed starlings were considered a problem in 79% of the 29 cities queried, followed by grackles (Q. quiscula) (31%), redwinged blackbirds (17%), cowbirds (10%), long-tailed grackles (Q. mexicanus) (7%), and mixed species (14%).

Blackbirds were native here when the Europeans first arrived but the replacement of forests with grain crops have caused a population explosion of these birds. Starlings are a European import, a small colony having been released in New York City in 1890-91. Since then they have multiplied to become one of the most populous species in the country (Robbins et al. 1986).

The main problem with these birds in cities is the vast migratory and winter flocks they form. These move into cities for the warmth and form noisy and odoriferous roosts on city buildings and trees. The roosts are also hazardous breeding grounds for histoplasmosis. Heavy concentrations of manure can kill the vegetation under the roosts. Grackles, in particular, are damaging to backyard fruit crops.

Unlike the more sedentary pigeon these roosts can be moved if a frightening program is started as early as possible before the roost becomes firmly established, is persistently continued until the birds are successfully routed, and well diversified both as to location and types of scares used. Pyrotechnics, such as propane cannons (SCARE-AWAY[8]), two-shot shotgun shells, rope firecrackers, etc., that move in noisily among the flock emitting light and sound are generally successful. Synthetic or recorded alarm/distress cries can be used, particularly against starlings. Shooting is no more effective than pyrotechnics and more dangerous. There is some indication that early morning hazing before the birds are ready to leave the roost may assist in making up their minds (Booth 1983). Visual repellents, such as owl effigies, rubber snakes, helium-filled balloons, eyespots, reflective tapes, etc., may be only temporarily effective.

Altering the roost to make it less attractive is sometimes successful. Heavy trimming of branches, up to 30% (Good 1976), may break up tree roosts. Ledges on buildings, as in the case of pigeons, can be made untenable by mechanical devices. Trapping has been attempted in agricultural areas but offers little promise in urban environments.

Poisoning of starlings is not successful on building roosts (Fitzwater 1958). Better results are accomplished when feeding areas such as feedlots within flight range of the roost can be poisoned. Another approach would be to bait preassembly areas as the birds often like to feed before going into the roost at night.

A limited technique that requires a delicate combination of meteorological and environmental circumstances, has been successful in knocking down populations with little environmental contamination. This involves the use of a detergent, PA-14[R]. The spray is applied to the birds on the roost at night from aircraft or ground sprinkler systems (Stickley et al. 1986). The detergent breaks down the protective oil in the feathers and, if accompanied with a low chill factor and natural precipitation, will result in extensive kills.

House Sparrow

The English or House sparrow (Passer domesticus) is as common a sight in our cities as the pigeon. It is another import from Europe. Numerous plantings were made between 1850-90 by immigrants who missed this cheery little bird. By then it had spread across the country and was causing enough agricultural damage for the government to start a reduction campaign against it.

Being smaller than the pigeon it is not as obviously evident as the latter. It is a pest on backyard gardens and fruit trees. The bulky nests (the bird is of the weaver finch family) are unsightly. Roost areas in constant use are objectionable nuisances as their droppings pollute patios, swimming pools, fast food drive-ins, etc. When nests are crowded into space around outside air conditioners, they are a source of ectoparasites that can get into homes to the discomfort of the residents.

More persistent and sedentary than the blackbirds, these are difficult to dislodge from roost areas with scare devices. Low night roost sites might be discouraged by spraying with water from a garden hose for several nights. They can be trapped though this is of marginal value. Ele-

vator-type traps are more escape-proof than the cheaper funnel-shaped entrances. They are more easily poisoned with strychnine grain, such as B&G's SPARROW CRACKS.

Woodpeckers

Woodpeckers will often forsake a strictly arboreal habitat to sharpen their skills on house siding, having a particular fondness for cedar, redwood, and plywood. Needless to say, homeowners are not deliriously happy about ragged holes appearing in their expensive dwellings or being aroused by early morning pounding on the walls by an energetic bird. Property damage can be quite extensive as Craven (1984) found it averaged about $300 in the survey he made in Wisconsin. The species that seem most involved are the flickers (Coloptes auratus). downy (Dendrocapus pubescens"). and acorn woodpeckers (Melanerpes formicivorus) though other species have been implicated.

Attempts to repel the birds rather than kill them have included: large shaving mirrors (supposedly magnifying his size so he sees a much larger rival for the territory than himself), foil strips, pinwheels, sticky bird repellents (often messier than the damage caused), hawk silhouettes, and wood preservatives. While some may be effective, they are generally discarded by the homeowner as being as unsightly as the damage (Graves and Andelt 1987). A permit must be obtained from the U.S. Fish and Wildlife Service for permission to kill individual birds when all else fails.

Crows/Ravens

Crows (Corvus spp.) and the smaller Chihuahuan ravens (Corvus cryptoleucus) have invaded many cities, large and small, to attack garbage containers creating a public nuisance as they scatter the debris. They are common on waste disposal sites around the country. Crows will also form large and noisy tree roosts to the dismay of nearby residents. In an "odd ball" incident, one respondent reported they had become a $1000 nuisance on a golf course by stealing golf balls probably under the mistaken illusion these were eggs that had rolled out in the open.

Crows are found all over the country. They have limited federal protection but state regulations must be known. A very wary bird, it will generally react to the standard frightening devices mentioned above and also react markedly to shooting. Some states have registrations for strychnine and STARLICIDE^{R} as toxicants.

Swallows

The two species of swallows that regularly build mud nests attached to man's structures are the barn swallow (Hirundo rustica) and cliff swallow (Petrochelidon pvrrhonota). Barn swallows colonize mostly in rural areas. The cliff swallow is more apt to be a problem as it is more tolerant of people. The mud nests are aesthetically unsightly and the droppings fall in the wrong places. In addition there is the problem of ectoparasites that can cause human and domestic stock discomfort.

This is a protected bird and one cannot legally disturb the nests without a permit from the U.S. Fish & Wildlife Service. As the birds are attracted to former sites, all traces of the colony should be removed (under a permit) after the birds have left. The suitability of sites for the next generation must be altered by eliminating access to them with plastic nets or metal mesh preferably under 3-cm openings. If this is not practical, the surfaces should be made as smooth and slick as possible so the mud will not cling (Gorenzel & Salmon 1982).

Swifts

Chimney swifts (Chaetura pelagica) were grouped together with swallows on the questionnaire for convenience and fear of improper recognition. They cause completely different problems from swallows as they build large nests inside chimneys. This creates a fire hazard. While not as common today as they once were, the danger is easy to prevent by screening the exterior opening to the chimney stack with 3-cm galvanized mesh.

Waterfowl

The problem with geese and ducks is very similar. The species of goose most concerned is the large Canadian goose (Branta canadensis). while the main species of ducks are mallards (Anas platyrhvnchos) and coots (Fulica americana). These have become semi-tame and are drawn to certain landscaped habitats with open water and expansive lawns, such as golf courses and open municipal water reservoirs. Their large droppings constitute a physical hazard to golfers on the greens and a source of pollution of water supplies. A survey (Conover & Chasko 1985) reported 45% of water companies and 62% of the golf courses with geese on them considered the birds a nuisance. All waterfowl, because of their size, are dangerous to aircraft when their flight patterns take them across those of commercial air traffic.

Here again, native species protected by international law, they can be shot only under rigid restrictions. Trapping with cannon nets and walk-in traps can be done, but still leaves the problem of what is to be done with the captured birds. Relocating them to other areas is an expensive, uncertain solution. Scare devices, particularly propane cannons and two-shot shotgun shells, are generally successful if they are put into operation as soon as the birds invade a critical area. Once the feeding patterns are established, it is much more difficult to achieve success. In many urban habitats the residents object to the noise. Visual repellent devices, such as, balloons and scarecrows, must be constantly moved around rather than remain stationary which discourages successful application by the public. Scaring with the use of trained dogs, falcons, and motorized small-scale airplanes have been tried with varying success. Landscape planners need to be made aware that the combination of open water adjoining open, low vegetative expanses are most attractive to waterfowl and

conducive to creating an eventual nuisance. There is some indication that spraying the repellent methiocarb on grasslands may be effective in reducing feeding in the area by geese (Conover 1985).

Gulls

While gulls (Larus spp.) are normally seashore residents, they do move considerable distances inland near large freshwater bodies. Their "whitewashing" of boats, piers, and other structures is very disgusting to the property owners. They are commonly found on dump sites and pose a dangerous hazard to aircraft.

Scare devices such as pyrotechnics and recorded alarm calls will solve problems temporarily but they depend upon someone doing it all the time. Where permits can be acquired from the U.S. Fish & Wildlife Service, baiting with AVITROL^R has induced an area repellency without noticeable mortality around landfills, airports, and structures. Alteration of the habitat, by closing landfills, draining ponds, regulating vegetation growth, prompt disposal of wastes at fast food eateries, porcupine wires on nesting sites as discussed under pigeons, etc., will have a more permanent effect on reducing gull problems. Exclusion has been accomplished by stringing parallel wire or monofilament line at 2.5-m intervals (Blokpoel & Tessier 1983).

Robins

Robins (Turdus migratoriusi become problems in fruit areas and when they congregate in migration and winter roosts. These are very difficult birds to scare when they are feeding in fruit trees (Brown 1973). Even in winter roosts, their persistence makes it difficult to remove other species sharing the roost (Erdman 1983). The author did assist in breaking up a robin roost in Minneapolis (MN) with SHELLCRACKERS^R, but that was a migratory roost. Protective bird netting is only practical on low fruit trees and bushes.

Vultures

Turkey vultures (Cathartes aura) and to a lesser extent black vultures (Corapvps atratusi are moving into urban areas - mostly utility poles and stations but some residences. Not only the sight of the large, ugly creatures but also their whitewashing makes them undesirable neighbors. Where they can be used, propane cannons and two-shot shotgun shells have effectively broken up roosts. Stringing a heavy wire four inches above the peak of a roof top will prevent roosting on that site.

The Mississippi kite (Ictinia mississippiensis) occurs in the southern states, particularly the southern plains area. They become problems with their aggressive behavior by diving on and frightening persons who come close to their nests. This behavior increases in intensity until the young leave the nest. Though they rarely strike a person, they can be deterred by wearing a hat, waving the arms or an object in front of the birds, and avoiding nest sites from mid-June through mid-August. In extreme cases, a permit can be obtained from the U.S. Fish & Wildlife Service to move the nest to another site.

The great horned owl (Bubo virginianus) and various hawks (spp.) occasionally move into town. With the possible exception of city zoos, backyard chicken runs, and hotel guests shocked at the sight of gutted pigeons lying on the window ledges, they are not problems.

Wading Birds

This group of birds includes the herons and egrets, such as the little blue (Florida caerulea) and black-crowned night herons (Nvcticorax nycticorax) and the common (Casmerodius albus) and cattle (Bulbulcus ibis) egrets. With the exception of the cattle egret, these are all native species protected under international law. The cattle egret is the only migrant from the Old World (Africa) who made it over on its own power. Established first in South America it was reported in Florida in 1952. Today it has successfully colonized the USA and Canada (Heminway, 1987).

The problem with these birds is their locating of rookeries near human habitation. The open areas on airports offer an attractive assortment of food, especially for cattle egrets. The noise and filth associated with nesting concentrations of these large birds and the additional hazard to aircraft make them unpopular on certain sites,

Hazing as in the case of waterfowl is not effective. Extreme thinning or removal of the woody vegetation in the roost area is the only effective control measure at present.

Mockingbirds

These small, attractive and melodious songbirds (Mimus polyglottos) are found over most of the country. Their singing in the early morning hours disturbs some people. While not as big and dangerous as the kites mentioned above, their fierce defense of nest territory may frighten some and make life miserable for the family cat. Again a protected bird, the only solution is to bear with it until the young are raised or turn the nest and young over to a wildlife rehabilitation center.

Waxwings

Complaints against this beautiful bird (Bombycilla spp.) are for the damage it does to the fruit on backyard trees and shrubs in ornamental plantings. The birds can get disgracefully drunk on overripe Pyracantha berries, and the writer has seen a score of bodies littering the highways where they couldn't make it across after imbibing too freely on a Pyracantha planting in the median strip. A protected bird, the only recourse is not to plant these species in such vulnerable sites or to cover them with protective bird netting. While not registered for this purpose, it is possible methiocarb would be an effective taste repellent.

Monk Parakeets

There are several exotic species that escape or are released in this country that have the potential for great agricultural damage, such as the red-whiskered bulbul (Pycnonotus jocosus). Java sparrow (Padda oryzivora), etc., but the only one that recently has managed to get a foothold is the monk parakeet (Myiopsitta monachus). This exotic species has been brought in from Argentina/ Brazil as a pet. The colonies now appearing all over the country are individual cases of escapes or releases of pet birds. In addition to being a grain and fruit crop pest in South America, it has a great potential for dissemination of Newcastle disease. It also cuts twigs and buds from ornamental trees. They are one of the most raucous of birds. A householder in New York who refused to let authorities take two who had built on his property was begging them to come back and take the birds off his hands within a couple of weeks. They have apparently been able to adapt and breed in climates as cold as North Dakota.

As they build large colonial nests, control efforts — trapping or shooting — should center around the nests. Endrin, used to spray the nests successfully in Argentine probably couldn't be used in this country, but other contact toxicants might be substituted (Anonymous 1973?).

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