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RAPTORS AND RACING PIGEONS: AN ANALYSIS OF AVIAN PREDATION ON DOME PIGEONS

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Abstract: Relationships among pigeons, raptors, and man are well documented. However, there has been little effort to study conflict between pigeon fanciers and raptors that prey upon racing pigeons. A questionnaire concerning the characteristics raptor predation on pigeons was distributed to members of the American Racing Pigeon Union (ARPU). Three hundred and sixty seven responses were received from ARPU members in 39 states. Cooper's hawks were the most often implicated raptor. Lots located at the edge of wooded areas experienced the most attacks *(n* =182). Most fanciers *(n* =154) indicated that raptor attacks were distributed throughout the day.

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INTRODUCTION

Interactions between rock doves, or pigeons *(Columba livia),* and raptors are well documented. The relationship between pigeons and raptors has been further defined through the names of certain predators (e.g., "pigeon hawk" or merlin *[Falco columbarius]).* Kenward (1978) studied the factors influencing goshawk *(Accipiter gentilis)* predation on woodpigeons (C. *palumbus).*

Humans have used pigeons in religious sacrifices, to assist in military service during war, and as a hobby (Levi 1963). Sketch (1991) notes that the domestication of pigeons may be traced back over 6,000 years to the Bronze Age of the Middle East.

Racing pigeons for sport involves flying the pigeons from a liberation site, ranging from 160 -1,600 km from the loft. The unique homing instinct of these birds allows them to return to a precise location where they were reared. To train birds for these long-distance endurance flights, the fancier must exercise the birds on a regular basis. This exercise involves giving the birds free-flight outside the loft where the birds can strengthen wing muscles and identify pertinent landmarks assumed to aid in the homing ability. It is during these exercise periods that raptor attacks generally occur.

Popular pigeon literature is replete with references to avian predation on domestic pigeons. Practically every issue of the *Racing Pigeon Bulletin, American Racing Pigeon News, The Thoroughbred,* and *American Pigeon Journal* contains references to hawk and falcon attacks. However, there is little mention of this problem in the scientific literature. Levi (1963) observed that the appearance of a hawk causes pigeons to become motionless. He further states that good flying pigeons generally can outmaneuver hawks, unless the hawk dives from some height, or is working in partnership with another hawk. When chased by a raptor, feral and domestic pigeons fly at great speeds, dodging and swerving to avoid capture. Pigeons may fly headlong with reckless abandon into a natural cavity to avoid capture (Levi 1963, Goodwin 1983).

Suhling (pers. common.) recently conducted a national survey of members of the National Birmingham Roller (NBRC) concerning raptor problems. Cooper's hawks (*A. cooperii)* were most often implicated in the attacks, followed sharp-shinned hawks *(A. striates),* and goshawks. Suhling found attacks to be evenly distributed throughout the day, most heavily concentrated from September to April.

Traditionally, wildlife damage management has for on species that impact production-oriented clients, ranging from deer *(Odocoileus virginianus)* in orchards to coyotes *(Canis latrans)* preying upon sheep, and human health and safety. Minor exceptions have involved animals which are a nuisance to homeowners. A clientele often overlooked are those people whose hobbies are affected by depredation. These complaints are usually dismissed as unjustified, insignificant, or on the periphery of the wildlife damage umbrella. In fact, the U.S. Fish and Wildlife Service has a policy of not approving depredation permits if birds are a problem with hobby pursuits. This paper presents insight into the nature of conflicts between federally-protected raptors and hobbyists participating in the sport of pigeon racing.

I wish to express my appreciation to the American Pigeon Fancier's Council and the American Racing Pigeon Union for their assistance and partial financial support of this study. Melissa Hutchins assisted with data entry, and 3 anonymous reviewers commented on the manuscript.

METHODS

A questionnaire was distributed to members of the ARPU via the Winter 1991 *AU Update,* a quarterly newsletter. To increase response rate, the Fall 1991 AU *Update* contained a brief announcement concerning the upcoming survey and its purpose.

Questionnaires were designed in accordance with Dillman (1978), Fowler (1984), and Converse and Presser (1986). Questions dealt with frequency of raptor predation, color and patterns of attacked birds, habitat description around the loft,

demographics, time of day when predation occurred, and season when attacks occurred.

Because of financial constraints, mailing surveys to a random sample of ARPU members was not possible. Responses were probably skewed toward those experiencing the greatest problems, so findings cannot be generalized to all racing pigeon fanciers. Thus, the study does not purport to measure the extent of the problem. The survey was an assessment of the characteristics associated with avian predation on racing pigeons.

While questions were primarily close-ended and designed to collect quantitative information, a wealth of useful volunteer comments were written on the survey form. The combination of quantitative and qualitative data provides insight into the types and nature of this atypical wildlife damage management problem. Summary statistics (Norusis 1990) are provided in this report.

The cross-country nature of the sport makes racing pigeons susceptible to raptor attacks over a wide geographic area. To minimize speculation, the survey was restricted to known attacks in the vicinity of a pigeon loft.

RESULTS

Three hundred and sixty-seven responses were received from ARPU members in 39 states. These states were classified by their corresponding U.S. Fish and Wildlife Service region (Table 1). Region 3 had the most respondents (*n* = 120).

Table 1. U.S. Fish and Wildlife Service regions used for classifying American Racing Pigeon Union survey responses from 39 states.

Region	States	No. of Respondents
1	Wash., Oreg., Id., Nev., Calif.	58
2	Ariz., N.M., Tex., Okla.	14
3	Minn., Ia., Mo., Ill., Wis.	120
4	Alas., La., Miss., Tenn., S.C., N.C., Ky., Ala., Ga., Fla.	56
5	Vt., N.H., Me., N.Y., Conn., R.I., N.J. Del., Md., Pa., W.Va., Va., Mass.	86
6	Mont., N.D., Wyo., S.D., Nebr., Ut., Colo., Kans.	13

One hundred forty-four of 367 respondents (39%) chose the highest attack-frequency category, indicating that their racing pigeons were attacked more than 15 times during the last 2 years. Even though respondents could select a period of peak activity, 42% (*n* =154) indicated that attacks occurred throughout the day. The period from 1000 -1400 hours was the second most frequent choice (23 %, *n* = 84), while 1800 hours till dark was the period of fewest attacks (3%, *n* = 10). Thirty-five percent of pigeon losses (*n* =130) occurred during winter, the period of greatest depredation. Only 16 respondents (4%) indicated that summer was the time of greatest conflict. Thirty-four percent of the fanciers (*n* =123) reported having predation problems throughout the year.

Previous discussions with racing pigeon fanciers suggested a possible correlation between pigeon color and vulnerability to raptor attack. However, 235 of the respondents (64%) indicated that any color pigeon was likely to be taken. The second most frequent choice was blue or ash red (24%, *n* = 87). While 264 of the respondents (72%) indicated that any age bird could be taken, there did appear to be a bias toward young birds from those respondents who observed a difference (17 % young birds vs. 10% old birds).

Nationwide, 52% of the 367 respondents (*n* = 191) indicated Cooper's hawks were the raptor most often responsible for pigeon attacks (Table 2). Red-tailed hawks *(Buteo jamaicensis)* were the next highest (19%, *n* = 71).

Table 2. Number and percent of respondents reporting raptor species responsible for pigeon attacks in 39 states.

Species	Number	%
Cooper's hawk	191	52
Red-tailed hawk	71	19
Goshawk	59	16
Peregrine falcon	34	9
Sharp-shinned hawk	30	8
Other species	21	6
Prairie falcon	6	2
Merlin	2	1

Eighty-two percent of the lofts (*n* = 301) were located in either suburban or rural areas. The number of attacks was independent of the human population of the town W= 4.68, P = 0.58).

Number of attacks was not independent of the loft's proximity to wooded areas (X'=42.59, P < 0.01). Fifty-percent of respondents (*n* = 182) indicated lofts located at the edge of wooded areas experienced attacks, whereas only 14% of respondents reported attacks at lofts in wooded areas.

DISCUSSION

Examining the regional distribution of reported raptor attacks indicated that most pigeon fanciers have at least a cursory knowledge of the potential predators in their area.

Raptors with a wide distribution (i.e., Cooper's hawks) were implicated as predators in each of the 6 regions. Predation by goshawks or prairie falcons was underrepresented (as expected) in regions where they are scarce or absent. Many fanciers admitted to being unable to identify hawks and did not select a response.

Color selection by raptors was most likely a function of relative pigeon abundance. Most fanciers keep blue or ash red pigeons. Three lofts flew only white racing pigeons, and indicated they experienced no more damage than surrounding fanciers. This anecdotal report casts doubt on the opinion held by many fanciers that white pigeons are more susceptible to attack.

Cooper's hawks were most often cited as the primary avian predator. Many fanciers had American kestrels (*Falco sparverius*) present in the area, but did not feel they were a threat. Red-tailed hawks received mixed reviews. Some fanciers who saw red-tails said they did not bother the birds. Other fanciers said the red-tailed hawk had learned to take the pigeons, especially on the ground or in the loft.

The high incidence of attacks during winter was a major problem for many fanciers, and some have been forced to keep their pigeons in the loft during winter. Providing fanciers with information on geographic periods of raptor migration might be useful in reducing predation losses. If fanciers were aware of times when large numbers of raptors might be migrating through an area, they could keep pigeons confined, or accordingly alter their flying times.

It has been suggested that racing pigeons are more vulnerable to predators when they enter or leave a loft located at the edge of wooded areas because raptors use forest cover as a means of surprise. However, the high number of attacks near open lofts suggests that pigeons are also susceptible in areas without escape cover. The low incidence of attacks in wooded areas may be due to the tendency to locate lofts away from dense forests because this increases homing difficulties. Thus, fanciers are faced with the difficult task of locating lofts to maximize the pigeons homing ability, while minimizing raptor pressure. .

Although the survey did not deal specifically with control measures, many fanciers volunteered information. One fancier in Pennsylvania paid a $500 fine and served 2 years probation for killing a Cooper's hawk on his property. He noted that authorities suggested using scare tactics and building a bigger loft to allow the birds to exercise. The latter suggestion indicates a lack of knowledge by the authorities. A pen would have to be extremely large to condition birds for 500-mile trips. Several fanciers have tried trapping and relocating the raptors. Some of these efforts were independent, while others were in conjunction with local falconers. The success of these efforts varied widely. These efforts range from placing leg-hold traps on poles, to leg-hold traps on top of a rabbit hutch. One anonymous fancier sent me wings from a Cooper's hawk he had killed in his loft.

MANAGEMENT IMPLICATIONS

While raptor predation on racing pigeons is not a problem of wide-scale economic importance, it does raise some management issues. Many fanciers indicated problems with raptors entering the loft as the pigeons returned from a flight. More research into effective loft modifications would be beneficial

Increasing agency awareness and sensitivity to this problem would greatly benefit pigeon fanciers. Unrealistic impractical suggestions from agency personnel serve or alienate this group of would-be constituents. Perhaps; relationship could be used to promote a system of family assistance. Additional surveys of agency personnel to a their knowledge of the subject would be helpful.

Many racing pigeon fanciers do have conflicts with rap In some instances raptor predation is being tolerated passive However, some raptors are being killed. Although it is until that a sufficient level of perdition by raptors can be documented to justify depredation permits, an awareness of the problem may lead to the development of alternatives for the mutual benefit of raptors and racing pigeon fanciers.

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