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The effect of corvid shooting on the populations of owls, kestrels and cuckoos in Cyprus, with notes on corvid diet

By E. HADJISTERKOTIS, Nicosia

1 Introduction

In Europe and North America magpies *Pica pica*, as well as other corvids, have long been considered serious predators of eggs and young gamebirds, particularly pheasants *Phasianus colchicus* and partridges *Alectoris* sp. and *Perdix perdix* (BIRKHEAD, 1991; TAPPER, 1992). Similarly on the island of Cyprus, Corvidae are considered pests (KOURTELLARIDES, 1998). Cyprus is located in the eastern part of the Mediterranean sea, and is host to six species of Corvidae. Five of them, the magpie, hooded crow *Corvus corone cornix*, raven *Corvus corax*, jackdaw, *Corvus monedula* and Cyprus jay *Garrulus glandarius glaszneri* are resident breeders. The sixth species, the rook *Corvus frugilegus*, is a winter visitor. All of them are considered as vermin by Cypriots (KOURTELLARIDES, 1998) but only the magpie, hooded crow and jackdaw are considered problematic to the extent of requiring population control. The raven was traditionally considered a serious predator to young gamebirds and an agricultural pest, but recently is threatened by extinction. To reduce numbers of corvids, they may be shot whenever hunting is permitted, i.e. in August and September (Wednesdays and Sundays and in some areas daily), from November to December, (Wednesdays and Sundays only), from January to March (Wednesdays and Sundays and in some areas daily). In addition, their shooting is allowed during the closed season for hunting, in April and May which is the nesting season, with the issue of special permits to groups of hunters. Although it is illegal to destroy the eggs of wild birds in Cyprus, it is permitted to destroy the eggs of corvids and house sparrows (*Passer domesticus*) (Law 39 of 1974 article 19(a), for the protection and development of game and wild birds). Because of this, it is popular practice during the nesting season to shoot individuals of these species but also their nests. The nests of magpies and hooded crows, which are built on trees, are particularly vulnerable to shooting. Jackdaw nests are located on cliffs, roofs and in tree holes, and are less vulnerable.

The destruction of these nests threaten a number of protected species, because they use old nests of magpies and hooded crows for nesting. These species are the long-eared owl *Asio otus*, the endemic subspecies of scops owl *Otus scops cyprius* and the kestrel *Falco tinnunculus*. In addition, the great spotted cuckoo *Clamator glandarius* parasitizes corvids by laying one or more eggs in each nest, and leaving them to the care of the nest owner (ASH-TON-JOHNSON, 1961; KOURTELLARIDES, 1998; STASTNÝ, 1990). Presently there are no studies in Cyprus on the effect of nest shooting on the species that use old nests for breeding (KOURTELLARIDES, 1998).

Magpies and hooded crows are common residents (BANNERMAN and BANNERMAN, 1958; FLINT and STEWARD, 1983; KOURTELLARIDES, 1998), and shooting them, poses no real threat to their current population. However, the long-eared owl is a very rare resident (FLINT and STEWARD, 1983; KOURTELLARIDES, 1998), and every bird killed represents a considerable reduction in the local population. In addition the Cypriot scops owl and the kestrel are declining in abundance.

The purpose of this paper is to examine the effect that corvid spring shooting might have on the non-corvid species that breed in the nests of magpies and hooded crows. In addition, the feeding habits of magpies and jackdaws were examined in order to measure to what extent these species might be destructive to game bird species. The status of these species in Cyprus is examined and conservation measures are suggested.

2 Materials and Methods

Information on nesting birds was obtained from nests found while I carried out research on the nesting phenology of the woodpigeon *Columba palumbus*, from 1992 to 1996 in Pafos district (HADJISTERKOTIS, 2000). A number of nests were reported to me by hunters, game wardens or foresters. I also reviewed the literature for nesting records of birds using corvid nests for breeding. Observations on habitat loss and the loss of old trees with cavities began in 1985, mainly in Pafos Forest where I spent four years studying the management and conservation of the Cyprus mouflon *Ovis gmelini ophion* (HADJISTERKOTIS, 1993, 1996a,b, 2001)

For the study of magpie and jackdaw diet during late spring and summer of 1990 all the hunters that had been issued special permits to shoot corvids in the Pafos district were requested to return the shot birds for examination of gizzard contents. The items present in each gizzard were identified visually.

3 Results and Discussion

3.1 Nesting

3.1.1 Long-eared owl

According to TUCKER and HEATH (1994), the long-eared owl in Europe is classified as secure, and the minimum European breeding population is estimated at about 200 000 pairs. According to HAGEMEIJER and BLAIR (1997), the European population is 185 000 to 239 000. It is listed in Appendix I of the birds directive 72/409/EEC. Although this species is considered secure in Europe, breeding records in Cyprus are very rare (KOURTELLARIDES, 1998). The first breeding record in Cyprus was in Salamis. One or two pairs bred in 1968-71 in a hooded crow's nest in a fir plantation (STAGG, 1968; C. O. S., R16, R18). No other nests were seen until 1993, when I discovered a nest in Souskiou village in Pafos district (Table 1). I found the next nest in 1995 in Athalassa park in Nicosia. A photograph of this nest was published by KOURTELLARIDES (1998). Since then five more nests were discovered which are published here for the first time (Table 1). From the nine nests recorded, four were within permanent game reserves, and one in the U.N. buffer zone in Athienou, where no hunting is allowed. The other four nests were located in hunting areas. One was near the village of Mathiatis, high on a eucalyptus tree. It was shot by a Game Warden who was surprised to see a long-eared owl dropping dead from the nest (KALLENOS pers. comm.). People collected the nestlings in the other two nests. The fourth nest successfully fledged at least three birds. From the 5 nests found in game reserve area, only one nest was unsuccessful because a hunter collected the nestlings and gave them to Larnaca Zoo, where they died a few days later.

The above findings confirm that the long-eared owl breeds on the island but remains a rare species. The study also indicates that the long-eared owl relies on the nests of corvids for breeding. In Europe the long-eared owl breeds in old nests built by birds of prey, crows, pigeons and squirrels as well as in nest boxes (STASTNÝ, 1990). In Cyprus there are no squir-

Table 1. Nests of long-eared owls recorded in Cyprus

Date	Locality	Tree	Original nest builder	No. of nestlings	Outcome
1968	Salamis*	Acacia <i>Acacia cyanophylla</i>	Hooded crow	?	?
1993	Souskiou	Olive <i>Olea europaea</i>	Magpie	4	1 taken by man
June 28, 1995	Ergates village	<i>Ceratonia ciliqua</i>	?	2 juveniles	Died
May 5, 1995	Athalassa Park*	Acacia	Hooded crow	6	Fledged
Early May 1995	Athienou*	Cypress <i>Cupressus sempervirens</i>	Jackdaw	2	Taken to the zoo
June 6, 1995	Athalassa Park*	Pine <i>Pinus brutia</i>	Magpie	3	Fledged
May 3, 1996	Athalassa Park*	Acacia	Hooded crow	5	Fledged
May ?	Mathiatis	Eucalyptus <i>Eucalyptus globulus</i>	Hooded crow	?	Shot

*Game reserves

rels, and there are no breeding records in old nests of species of birds other than crows and magpies.

Birds nesting in game reserves in Cyprus are more successful in producing flying young than birds nesting in areas where hunting is allowed. Birds in hunting areas are collected by hunters, or are shot in the nest. Therefore, it is possible that the long-eared owl in Cyprus would increase in numbers if the nesting pairs were protected by banning hunting of Corvidae in spring, and by educating people not to collect the nestlings.

3.1.2 Cypriot *Scops* owls

The Cypriot scops owl is a common endemic resident (BANNERMAN and BANNERMAN, 1958; FLINT and STEWART, 1983; KOURTELLARIDES 1998). The Cypriot scops owl lays its eggs in tree holes or walls and ruins (KOURTELLARIDES, 1998; pers. obs.), in wells and in roofs of houses (BANNERMAN and BANNERMAN, 1958) and in old magpie nests (ASHTON-JOHNSON, 1961). Consequently, the scops owl it is less threatened by being shot in magpies nests than long-eared owls. This may be one reason why this species is less rare than the long-eared owl.

However, a problem which the Cypriot scops owls may face is finding sufficient tree holes for nesting. Inside the forests of Cyprus the main trees with cavities are the pine *Pinus brutia*, golden oak *Quercus alnifolia*, and plane trees *Platanus orientalis* etc. For many years the policy of the Department of Forestry of Cyprus was to fell old trees located in state forest, not including national parks for wood production. Because of the dry weather conditions in Cyprus it takes scores of years and sometimes hundreds of years for a tree to grow large enough for cutting, and even more to develop cavities. Therefore, every old tree that is cut down is almost irreplaceable.

Outside the state forest areas, mainly two type of trees provide cavities for nesting, the olive tree *Olea europaea* and the carob tree *Ceratonia ciliqua*. Carob trees are no longer

being planted because carob is no longer an economically profitable business. Often old carob trees are felled for wood or to make room for other crops.

The preservation of old trees would be beneficial, and the use of nest-boxes may be appropriate, as it has been demonstrated in various countries that scops owls accept these in areas with insufficient natural sites (ARLETTAZ, 1990; VOOUS, 1988).

In summary, it is possible that killing females on the nest might not be a limiting factor for the Cypriot scops owl, but with a few simple management measures the population can become secure.

3.1.3 Kestrels

The kestrel breeds on cliffs, rock ledges (BANNERMAN and BANNERMAN, 1958), in buildings (KOURTELLARIDES, 1998), in tree holes or crevices in rock and clay walls or even nest-boxes (STASTNÝ, 1990) and in the nests of crows and magpies.

According to BirdLife International (TUCKER and HEATH, 1994), the kestrel is classified in SPEC Category 3 and is considered to be declining throughout Europe since the 1960s, owing mainly to pesticide residues in prey (NEWTON, 1979; SHRUBB, 1993). In the Bern Convention it is listed in Annex II, and in the Bonn Convention in Annex II. The total European population is estimated at 260 000 to 325 000 pairs (HEGEMEIJER and BLAIR 1997), and the species is considered to be the most common falcon in Europe. Recent widespread declines in Europe are due mainly to intensification in agriculture, including crop specialization, high stocking levels, pesticides and the loss of old trees and hedgerows. As was noted earlier with scops owls, it seems that the kestrel faces a similar problem in Cyprus with respect to the lack of tree holes for nesting.

3.1.4 The great spotted cuckoo

The great spotted cuckoo parasitises the nests of crows, mainly magpie, jay and hooded crow. It lays eggs similar in color to those of the host birds, i.e. they are mostly greenish blue, with brown spots. The female cuckoo may lay several eggs in one nest, and lays a total of 12–15 eggs throughout the breeding season. The chicks grow alongside the host's young, in contrast to the young of the European cuckoo *Cuculus canorus*, whose young hatch first and push the eggs of the host out of the nest (KOURTELLARIDES, 1998).

Out of 11 magpie nests examined during the spring and summer of 1990, two were found to contain the nestlings of great spotted cuckoo. The first nest had only one nestling. The second contained two cuckoos about fist size, and 3 magpie chicks that were much younger and smaller in size. It seemed that the magpies were hatched very late, or the great spotted cuckoo received most of the food brought by the parents, and the magpies chick remained undeveloped. Only after the cuckoos left the nest, did the magpie chicks receive enough food to speed up their growth. A similar case was noted by CHRISTOFOROU (1998), showing a photograph of two well feathered great spotted cuckoos in a crow's nest, together with two featherless crow chicks.

Although the great spotted cuckoo parasitises the nest of Corvidae, the destruction of corvid nests is not considered detrimental to the population of the cuckoo. The mother cuckoo is present in the nest only during laying, and is never killed when a nest is shot. The large number of eggs laid is a safety factor for the cuckoo population.

3.2 Feeding habits of corvids

3.2.1 Magpies

A total of 66 magpie gizzards were examined, from birds shot by hunters during the season (Table 2). Thirty (45.4%) of the gizzards examined contained cereal seeds, four (6.0%)

gizzards contained legume seeds, 16 (24.2%) contained fruit, 50 (75.8%), gizzards contained insects, one (1.5%) gizzard contained earthworms, millipedes, and snails. Twenty three birds were collected in May, 32 in June and 11 in August 1990. The number of gizzards collected and the number of gizzards containing each food item is presented in Table 2.

Although my study did not include data from March and April, which corresponds to the main breeding season for gamebirds, it was evident that there was no magpie predation on gamebirds eggs or chicks. Magpies mainly took insects such as grasshoppers and cicadas: 27.3% of all gizzards examined contained at least one cicada and 30.3% of all gizzards contained at least one grasshopper. Overall 75.8% of gizzards contained cicadas, grasshoppers or some other kind of insect, which indicates that insects are the main food items for magpies in the late spring and summer. The second most important food group was cereals, either wheat or barley, found in 45.5% of all gizzards. Wheat was found mainly in spring and barley more or less throughout the summer. Wheat was most probably taken from the fields after harvesting. Since wheat is produced mainly for bread making, and barley for animal food, it is possible that more magpies were found with barley in their gizzards later in summer when field supplies are depleted, owing to feeding on sheep and goat farms or even in chicken runs. During 1990 and 1991, I visited many livestock farms in the district of Pafos and regularly recorded magpies escaping from food troughs of sheep and goats.

Grasshoppers, or locust, in Cyprus have been considered a serious problem for agriculture for many centuries. Fra FRANCESCO SURIANO, from Venice, visited Cyprus in August 1484. SURIANO wrote that: "Almost every year it is smitten with locusts, and the result is great barrenness and death. When the locusts do not come they harvest grain enough for four years" (COBHAM, 1908). Similar historical records, all cited by COBHAM (1908), were noted by the astronomer and geographer BENEDETTO BORDONE, a native of Padua, in his book *Isolario* first printed at Venice in 1528, by M. JOHN LOCKE who visited Cyprus in 1553, by Fra ANGELO CALEPIO, Vicar General of the Province of Terra Santa in 1556, by the Seigneur DE VILLAMONT in Britany who visited Cyprus in 1589, by CORNELIS VAN BRUYN, a Dutchman, native of The Hague who visited Cyprus in 1683, by ALEXANDER DRUMMOND, Esquire, His Majesty's Consul at Aleppo, in 1745, by CONSTANTIUS, Archbishop of Sinai in 1819, and Ali Bey during his visit to Cyprus in 1806 (COBHAM, 1908, 410-412).

In the first week of May 2000, in the region of Troulli village, a population explosion of grasshoppers took place after a long winter drought followed by an unusually rainy April and high temperatures. These insects consumed green grass over large areas, causing serious damage to sheep farming. Several magpies and hooded crows were seen in the area feeding on the grasshoppers. A similar problem with grasshoppers arose on June 8 and 9, 2000 near the village of Athienou. To eliminate the problem, the Department of Agriculture of Cyprus sprayed the area with insecticides, fearing that these insects could migrate also to other areas of the country. Such population explosions of grasshoppers are usually an annual phenomenon in Cyprus, appearing in several parts of the island. It seems that magpies as well as other corvids are important natural enemies of grasshoppers, helping to control the grasshopper population. However, the large number of magpies and hooded crows shot each year reduces the corvid populations, thereby benefiting the grasshoppers.

Cicadas are not a major agricultural pest, but during the summer this insect is abundant, found anywhere with green vegetation, including the cities and villages. It is extremely noisy, causing a high level of noise pollution particularly during midday when most Cypriots rest (because of the summer heat, all work ceases during noon time).

Table 2. Late spring and summer diet of magpies in Pafos district of Cyprus.
Data show the number and percentage of gizzards containing each food item

	17.5.1990	17-26.6.1990	17.8.1990	Total gizzards	%
No of gizzards examined	23	32	11	66	
	Presence in gizzards	Presence in gizzards	Presence in gizzards		
Food item					
Cereals					
Barley <i>Hordeum vulgare</i>	7	8	2	17	
Wheat <i>Triticum durum</i>	12	3	1	16	24.2
Total no of gizzards containing cereals				30	45.4
Seeds legumes					
Vetch <i>Vicia sativa</i>	1			1	1.5
Peas <i>Lathyrus ochrus</i>	1			1	1.5
Broad beans <i>Vicia faba</i>	1	1		2	3.0
Other Seeds	1	1		2	3.0
Total no of gizzards containing seeds				4	6.0
Vegetation					
		1		1	1.5
Fruit					
Cherries <i>Cerasus avium</i>	1			1	1.5
Figs <i>Ficus carica</i>	2	2	4	8	12.0
Grapes <i>Vitis vinifera</i>		4	1	5	7.6
Malberry <i>Morus nigra</i>	1	1		2	3.0
Plums <i>Prunus domestica</i>	2		2	4	6.0
Olives <i>Olea europea</i>		1		1	1.5
Other Fruit	1	1		2	3.0
Total no of gizzards containing fruit				16	24.2

Continue Table 2. Late spring and summer diet of magpies in Pafos district of Cyprus.
Data show the number and percentage of gizzards containing each food item

	17.5.1990	17-26.6.1990	17.8.1990	Total gizzards	%
No of gizzards examined	23	32	11	66	
	Presence in gizzards	Presence in gizzards	Presence in gizzards		
Insects					
Coleoptera	6	7	4	17	25.8
Orthoptera Acrididae Grasshoppers	3	10	7	20	30.3
Diptera, <i>Musca domestica</i> (pupae)		1		1	1.5
Heteroptera		1		1	1.5
Homoptera Cicadas	8	9	1	18	27.3
Other insects	9	7	2	18	27.3
Total no of gizzards containing insects				50	75.8
Earthworm		1		1	1.5
Millipedes		1		1	1.5
Snails	5	3	1	9	13.6
Lizzards	6	4		10	15.2
Carrion					
Carrion (goat)		3		3	4.5
Carrion (sheep)			2	2	3.0
Total no of gizzards containing carrion				5	7.6
Feathers (chicken)			1	1	1.5
Egg shells (Chicken)		2	2	4	6.0
Rodents			1	1	1.5
Stones	2	2	1	5	7.6

According to BIRKHEAD (1991), the numerous analyses of magpie diet indicate that, although eggs and young gamebirds are eaten, they form only a small proportion of the diet. Nonetheless, from the gamekeeper's point of view, the loss of any gamebird eggs or young can appear as a serious problem.

VESEY-FITZGERALD (1946), in his book *British Game*, concludes that while magpies undoubtedly take the odd gamebird chick, overall they do not do much harm. In contrast, predators that kill adult partridges or pheasants, such as fox *Vulpes vulpes*, stoat *Mustela erminea* and cat *Felis catus* are a much more serious threat because of their impact on gamebird breeding populations. In Cyprus it was found that foxes are the main predator of captive-bred chukar partridges *Alectoris chukar* released for restocking, killing up to 40% of the released birds within the first 10 days. In contrast, no magpies were noted to attack any of the released birds, although they were fairly tame (HADJISTERKOTIS, 1999).

3.2.2 Jackdaws

Only 8 gizzards were collected from jackdaws. Although the number of gizzards was small, their examination indicated that jackdaws have a diet similar to magpies, feeding mainly on insects and cereals (Table 3).

Table 3. Diet of jackdaws based on 8 gizzards collected on 24 June 1990 in the Pafos district of Cyprus. Data show the number and percentage of gizzards containing each food type.

Food item	No. of gizzards present	Frequency (%)
Wheat	8	100
Cicadas	3	31.6
Fruit	1	12.5
Legume seeds	1	12.5
Barley	1	12.5
Snails	1	12.5
Coleoptera	2	25.0

4 Conclusion

The traditional shooting of magpie and hooded crow nests has most probably contributed to the reduced numbers of breeding long-eared owls on the island of Cyprus, and perhaps to the reduction of the populations of other species such as the Cyprus scops owl and the kestrel. This shooting has also brought to near extinction the endemic Cypriot raven.

Cyprus is a candidate to join the European Union. According to EU council directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, Article 7.4, Member states, "shall see in particular that the species to which hunting laws apply are not hunted during the rearing season nor during the various stages of reproduction". Cyprus is not yet a member state of the European community, but is obliged to conform with the above directive by the end of the year 2002. This means that by the end of that year Cyprus should completely stop any form of spring shooting, even in corvids. In the year 2002, in compliance with Article 7.4 of the directive 79/409/EEC, no spring hunting was allowed. However, the directive allows for derogations. In the UK, crow, magpies, jays and rooks may legally be controlled all year round, under a general license renewed annually by the government applying a derogation (NICHOLAS AEBISCHER, pers. commun.). In Cyprus, there is

strong pressure from hunters to allow for derogations. However, it is necessary to continue the ban of the spring shooting of corvid nests, because the survival of certain protected species depends on their availability and protection. In addition, corvids are contributing towards the control of harmful insects.

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Summary

On the island of Cyprus the magpie *Pica pica*, the hooded crow *Corvus corone cornix*, and the jackdaw *Corvus monedula* have long been considered serious predators of gamebirds and pests of agriculture. They may be shot during the hunting season, but also during the nesting season, when birds and nests are shot for population control. The study confirms that old nests of magpies and hooded crows are used for nesting by the long-eared owl *Asio otus*, which is a rare resident breeder. The shooting of magpie and hooded crow nests in Cyprus has most probably contributed to the reduced number of breeding long-eared owls on Cyprus, and also to the reduction of the populations of other species such as the Cyprus scops owl *Otus scops cyprius* and the kestrel *Falco tinnunculus*, which also nest in old nests of Corvidae. The feeding habits of the magpies and jackdaws were investigated by examining 66 gizzards of magpies and 6 gizzards of jackdaws. The main items in their diet were grasshoppers and cicadas, followed by barley and wheat. No gamebird remains were found in any of the samples examined. It is suggested that the shooting of Corvidae during the breeding season should cease for the benefit of the rarer species using their nest for breeding, but also to comply with the European Union council directive 79/409/EEC, Article 7.4 on the conservation of wild birds.

Key words: Long-eared owl, Cyprus scops owl, magpie, jackdaw, Cyprus, feeding habits

Zusammenfassung

Die Auswirkung der Rabenvogel-Bejagung auf die Eulen-, Turmfalken- und Kuckuck-Bestände auf Zypern, mit Anmerkungen zur Nahrung von Rabenvögeln

Auf Zypern wurden Elstern *Pica pica*, Nebelkrähen *Corvus corone cornix* und Dohlen *Corvus monedula* lange als bedeutende Flugwild-Prädatoren und landwirtschaftliche Schädlinge betrachtet. Die Arten dürfen während der Jagdsaison erlegt werden, zusätzlich aber auch während der Brutzeit, wenn zur Bestandskontrolle Vögel abgeschossen und ihre Nester ausgeschossen werden. Die Untersuchung bestätigt, dass alte Elstern- und Nebelkrähen-Nester von der Waldohreule *Asio otus*, einem seltenen Brutvogel, zum Nisten genutzt werden. Das Ausschießen von Elstern- und Nebelkrähen-Nestern hat höchstwahrscheinlich zur Abnahme des Brutbestandes der Waldohreule auf Zypern beigetragen, ebenso zur Abnahme der Bestände anderer Arten, wie der zyprischen Zwergohreule *Otus scops cyprius* und des Turmfalken *Falco tinnunculus*, die gleichfalls alte Rabenvogelnester zum Brüten nutzen. Die Ernährungsgewohnheiten von Elstern und Dohlen wurden anhand der Auswertung von 66 (Elster) beziehungsweise 6 (Dohle) Mägen untersucht. Heuschrecken und Zikaden bildeten die Hauptbestandteile der Nahrung, gefolgt von Gerste und Weizen. Überreste von Flugwild wurden in keiner der untersuchten Proben gefunden. Es wird vorgeschlagen, den Abschuss von Rabenvögeln während der Brutzeit einzustellen, um seltene Arten zu schützen, die Rabenvogelnester zum Brüten nutzen, und zur Einhaltung der Richtlinie 79/409/EWG, Artikel 7.4 des Rates der Europäischen Union über die Erhaltung der wild lebenden Vogelarten.

Schlüsselwörter: Waldohreule, zyprische Zwergohreule, Elster, Dohle, Zypern, Ernährungsgewohnheiten

Résumé

L'effet du tir des Corvidés sur les populations de hiboux, de faucons crécerelles et de coucous sur Chypre, avec des notes sur le régime alimentaire des Corvidés

Sur l'île de Chypre, la Pie bavarde (*Pica pica*), la Corneille mantelée (*Corvus corone cornix*) et le Choucas des tours (*Corvus monedula*) ont de tous temps été considérés comme de sérieux prédateurs d'oiseaux-gibier et comme des pestes pour l'agriculture. Ils peuvent être tirés pendant la saison de chasse et aussi durant la saison de nidification lorsque oiseaux et nids sont tirés en vue de contrôler la population. L'étude confirme que d'anciens nids de pies et de corneilles sont utilisés pour la nidification par le Hibou moyen-duc (*Asio otus*), lequel est un nicheur sédentaire rare. Le tir de nids de la Pie bavarde et de la Corneille mantelée sur Chypre a plus que vraisemblablement contribué à la réduction du nombre de hiboux sur Chypre ainsi qu'à la réduction de populations d'autres espèces telles que le Hibou petit-duc (*Otus scops cypricus*) et le Faucon crécerelle (*Falco tinnunculus*) qui niche également dans d'anciens nids de Corvidés. Les habitudes alimentaires des pies et des choucas ont été examinées en analysant le gésier de 66 pies bavardes et de 6 choucas. Les éléments principaux rencontrés dans ces gésiers étaient constitués de sauterelles et de cigales suivis d'Orge et de Blé. Aucun reste d'oiseau-gibier n'a été trouvé dans aucun échantillon examiné. Il est suggéré qu'il soit mis fin au tir de Corvidés pendant la saison de reproduction, non seulement pour le bien des espèces rares qui adoptent leurs nids pour y nicher mais aussi par respect de la directive du Conseil de l'Union européenne 79/409/EEC, Article 7.4 sur la conservation des oiseaux sauvages.

Mots-clefs: Hibou moyen-duc, Hibou petit-duc, Faucon crécerelle, Pie bavarde, Corneille mantelée, Choucas des tours, Chypre, régime alimentaire

Trad.: S. A. DE CROMBRUGGHE

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Author's address: E. HADJISTERKOTIS B.Sc., M.Sc., Ph.D., Ministry of the Interior, Nicosia, 1453 Cyprus, hjsterkotis@cytanet.com.cy