

Study on Hunting Activities in Macedonia: Past, Present and Future

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Executive Summary

The great richness of biodiversity present within Macedonia, including game for hunting, has been an exciting challenge for hunters since time immemorial. Since the 1912 Law on Hunting, all hunting activities have been regulated, necessitating that hunters be associated with hunting societies. Seasonal and temporary prohibitions on the hunting of particular species of game were also established under this law.

In 1948, a prohibition against the hunting of rare or thinly distributed game was passed in an attempt to increase the numbers of these protected game species. This prohibition remained in force until 1951, but birds of prey were only partially included (Vultures and Red-footed Falcons).

In the year 1965, in accordance with the new Macedonian law for Natural Rarities Conservation, a decision for the permanent protection of 48 species of birds within the entire territory of Macedonia was passed. Most of the birds of prey were included on this list, with the exception of hawks, kites and harriers. In practice, however, the list of permanently protected bird species did not achieve its desired effect, not only among poachers, but also within the hunting societies themselves, probably because of the lack of an appropriate control mechanism for its implementation.

Tardily, in the year 1973, a law for ratification of the International Convention for Bird Protection (1950) was adopted within former Yugoslavia. Consequently, the Hunting Association of Macedonia incorporated all of the protection measures of the Convention within the new Macedonian hunting law (also adopted in 1973). Within the term, "game," two groups of wild animals were included: furred game (mammals) and feathered game (birds). The subgroup, "birds of prey," encompassed: falcons, eagles, vultures, buzzards, harriers, kites, hawks and owls. Except for hawks, all birds of prey were permanently protected.

The current Hunting Law was officially proposed on April 17, 1996. In accordance with this law, the term "hunting" is defined as "reproducing, raising and exploiting game." In Article 4, a list containing 127 species of game is presented, consisting of 24 mammal and 103 bird species. Of the total of 103 game bird species, 70 are included within the category, "permanently protected species." All birds of prey, including the four vulture species, are within this category - except the Goshawk (*Accipiter gentilis*).

After adopting of the Hunting Law in 1996, the Macedonian Ministry of Agriculture, Forestry and Water Economy prepared the additional regulations necessary for implementation of the law. The Department of Hunting, within the Faculty of Forestry in Skopje, also prepared a General Long-term Management Plan for hunting activities within the entirety of Macedonia which was first adopted by the Ministry of Agriculture, Forestry and Water Economy, and then by the Government on May 5, 1997. This document addresses the development of hunting activities over a period of 20 years, as well as establishes the borders of hunting grounds within Macedonia in accordance with their use for big or small game.

On the basis of this Plan, the government adopted specific regulations allowing for the establishment of a total number of 249 hunting grounds (104 for big game and 145 for small game). Four of the 249 have been established as "State Hunting Grounds." A total of 233

hunting grounds were awarded. Four in the area of Skopje and 12 in the area of Bitola were not taken under concession.

Because of a lack of money, many users of the hunting grounds are not paying their membership fees to the Macedonian Hunting Association and it is slowly collapsing. This is also the reason why the hunting journal, "Hunter," is no longer being published. The last issue was No. 1 of the year 2000. We are concerned that, unless the confusion concerning the hunting grounds is clarified, there will be a further reduction in the general biodiversity, including vultures, resulting from the lack of an organised game warden service to prevent unscrupulous hunters from killing whatever they want.

The existing experiences with biodiversity conservation and sustainable use of natural resources demonstrate that Macedonia has an urgent need for reorganisation at the governmental level, implementation of international conventions and agreements, as well as adoption of European and international methodologies and criteria in this field. This determination is the result of considerable experience gained through the execution of many projects funded by foreign donors or with international exposure. The foundation for further activities within the field of biodiversity conservation and the sustainable use of natural resources, including hunting activities, must be the National Strategy on Biodiversity, which will be finished before the end of this year.

One of the strategic options within the Strategy is the preparation of improved National Red Data Lists and Books of threatened plants and animals, as well as management plans for protected areas. In the Strategy, within the chapter on threatened species, 113 vertebrate species are included (66 bird species, 30 fish species, 16 mammal species, and 1 reptile species). Concerning future hunting activities, it is obvious that the current hunting law should undergo significant changes because, otherwise, it will not be in accordance with the National Strategy.

Overview

The Republic of Macedonia (herein after referred to as Macedonia) is a southeastern European state, situated in the central part of the Balkan Peninsula. It is located between 40° 51' 16" and 42° 22' 21" North Latitude and 20° 27' 32" and 23° 02' 12" East Longitude. Bordering Bulgaria to the east, Greece to the south, Albania to the west and Serbia to the north (Figure 1), it covers an area of 25,713 km².

According to the 1994 census, Macedonia has 1,945,932 inhabitants, with a population density of approximately 81 persons per square kilometre. About 60% of the population live in urban areas, and during the last few decades there has been a significant exodus from many rural areas.

Macedonia is predominantly a mountainous country, cut by larger or smaller valleys and gorges, plateaus and highlands. There is a considerable difference in altitude between the lowest and highest point (from about 60 m to 2764 m msl). About 15 mountain ranges are higher than 2000 m. Only the Shara Mountain has more than 20 peaks higher than 2500 m. From a geomorphological point of view, Macedonia can be divided in two main regions: the western part with its carbonaceous rocks and the eastern part with a great diversity of siliceous rocks. The territory of Macedonia includes 25% pastureland; 25% arable land, meadows, vineyards and orchards; 8% barren land; 37% designated forestland; 2% lakes and 3% urban or industrial land.

From the aspect of landscape diversity, hydrographic features are particularly noteworthy, with the three tectonic lakes being of special significance. In addition, there are over 30 glacial lakes, 23 large artificial lakes and more than 100 smaller accumulations, with about 15 valleys and approximately 35 large and small rivers. Numerous aquatic ecosystems with rich shore vegetation exist, and deep gorges are sources of considerable endemism and relict species.

Due to its diverse edaphic features (topography, climate, hydrography and soils) as well as human influences, Macedonia is one of the few countries in Europe having such a rich diversity of habitats. According to a recent analysis of biodiversity, Macedonia is at the top of the list of states called "European Hotspots".* The great biodiversity within Macedonia is a result of its lengthy historical development. The country contains between 3,200 and 3,500 species of vascular plants, 525 species of vertebrate animals (including the four vulture species) and more than 9,000 invertebrate species.

A total of 7.16% of Macedonia is under some form of protection (Table 1). Management of the protected areas is varied in terms of both the responsible institutions and of their conflicting roles and responsibilities; the situation can be problematic and confusing at times.

Table 1. Protected Areas in Macedonia by IUCN Category.

IUCN Category	Number of Areas	Areal Extent (in ha)	Percent of Surface Area of Macedonia
IUCN Category I – Strict nature reserves (scientific)	2	12,730	0.49 %
IUCN Category II – National parks	3	108,388	4.20 %
IUCN Category III – Natural monuments	48	58,084	2.25 %
IUCN Category IV – Nature reserves	3	2,338	0.09 %
IUCN Category V – Individual plant and animal species outside nature reserves	14	2,647	0.10 %
TOTAL	69	184,137	7.16 %

* Gaston, K.J. and R. David. 1994. Hotspots across Europe. *Biodiversity Letters* 2, 108-116.

Figure 1 – General location map of Macedonia.

Hunting Activities in the Past

The great richness of biodiversity present within Macedonia, including game for hunting, has been an exciting challenge for hunters since time immemorial. According to historical records from the Middle Ages, during that period hunting was the most popular leisure activity among kings, rulers, their retinues and dignitaries, and it was restricted just for them.

During the occupation of the territory now known as the Republic of Macedonia by the Turkish Empire (1371 – 1912), the Turkish pashas and beys continued the hunting tradition of the former rulers. They were especially fond of falconry (i.e., hunting using falcons). Data exist concerning the privileges the falconers enjoyed through accompanying the pashas and beys in their hunting activities.

Throughout the period of the Turkish occupation, hunting activities were not organised, and there were no temporary or permanent prohibitions against hunting. After its liberation from Turkish occupation in October 1912, Macedonia was included within the Kingdom of Serbia and, after the First World War - from December 1, 1918 - within the Kingdom of Yugoslavia.

After 1912, the Law on Hunting organised all hunting activities, necessitating that hunters be associated with hunting societies. Seasonal and temporary prohibitions on the hunting of particular species of game were also established. In addition, this law specified which animals could not be hunted, including birds of prey, especially falcons and hawks, as well as eagles,** not conclusively distinguishing them from vultures. With the exception of Karaman's sporadic data, the inventory records of the Macedonian Museum of Natural History (Figure 2) and the City Museum in Struga, we have no data concerning the number of vultures killed per year during the period from 1912 until the Second World War.

Figure 2 – Griffon Vulture exhibit in the Macedonian Museum of Natural History.

In 1948, a prohibition against the hunting of rare or thinly distributed game was passed (Official Register of the People's Republic of Macedonia 34/48) in an attempt to increase the numbers of these protected game species. This prohibition remained in force until 1951, but birds of prey were only partially included (Vultures and Red-footed Falcons). The existence of the Paris International Convention for the protection of wild birds (1950) was probably not known in Macedonia. On the contrary, even after the establishment of prohibitions, hunters were rewarded by the hunting organisations for presenting legs from birds of prey.

The most accurate information about hunting activities during the last 50 years is best obtained from the hunting magazine, "Lovec" (Hunter) (Figure 3). Based upon data from this

** The Macedonian common name for vultures is "Carrion Eagle," therefore, the general term, "eagles," also includes vultures.

magazine, we have separated chronologically the most striking examples of threats to game, especially to birds of prey.

Figure 3 – First issue (July 1948) of the popular hunting magazine, “Lovec” (Hunter).

Examples of hunting activities which threaten either vultures or birds of prey in general

- A hunter from the town of Resen received a bounty of 20 denars for a hawk he killed (Hunter, 11/12, 1951).
- In the vicinity of the town of Gostivar, as a consequence of poisoning wolves, 10 vultures were poisoned in addition to other animals (Hunter, 3/4, 1958).
- The hunters of Berovo, just within the month of April 1952, exterminated over 100 harmful birds - without details as to species (Hunter, 5/6, 1952).
- In the city of Skopje, 42 groups of hunters were established in order to poison wolves using strychnine ($C_{21}H_{22}N_2O_2$) (Hunter, 9/10, 1952).
- Report on a large number of shot and poisoned harmful birds, without any further details (Hunter, 11/12, 1952).
- A column with instructions about how to use hydrogen cyanide ampullae in the poisoning of harmful game (Hunter, 11/12, 1952).
- Report written by Prof. Jovetic on the results of activities for the elimination of birds of prey using a stuffed Eagle Owl specimen as a lure. On that occasion his group of hunters succeeded in killing 35 hawks, 26 falcons, 2 eagles** and several owls (Hunter, 2, 1953).
- The Macedonian Hunting Association presented a table with points assigned for each bird of prey killed. If a hunter brought in the legs (with claws) of an eagle,** he would receive 100 points, for the legs of hawk, 50 points, and for a harrier, 50 points. When the hunter had collected 1000 points, he would get a golden badge (Hunter, 2, 1953).
- On the outskirts of the town of Kavadarci, hunters exterminated 79 hawks, among other animals (Hunter, 2, 1953).
- Report written by Prof. Jovetic explaining the best way to exterminate harmful feathered game, under which category he included: hawks, sparrow-hawks, falcons, eagles** and owls. Later, he presented a table with the numbers of birds of prey exterminated within the hunting grounds of the Faculty of Agriculture and Forestry (Skopje) during the period 1951-1954. Within this period of time, a total of 109 falcons, 92 hawks, 47 harriers, 18 eagles** and 14 owls were killed (Hunter, 5, 1954).
- Report written by the Hunting Subassociation of the town of Stip regarding their success in the extermination of harmful feathered game and the collection of eggs. In the report, one hunter who collected 22 falcon eggs, another who collected 17 etc. were specifically mentioned (Hunter, 6, 1954).
- Information written by the Macedonian Hunting Association concerning its decision for the mandatory extermination of harmful game within the year 1955. A list of points awarded for each killed specimen of harmful game was included in the text. For a pair of legs from an eagle,** the hunter would get 10 points, for a hawk, 7 points, sparrow-hawk, 5 points etc. (Hunter, 1, 1955).
- Information on the activity by a schoolteacher from the village Siricino, near Tetovo, in exterminating harmful birds. During a two-day period, this teacher and his pupils

succeeded in destroying 205 nests of various species of birds and collecting 947 eggs. Among them, eight nests and 24 eggs were from hawks (Hunter, 2, 1955).

- Report on Mr. Trajce Sojlev (with photo) from Veles, as an example of a successful exterminator of harmful game. In addition to other animals, the report pointed out that he had killed four eagles,** three hawks and eight falcons. For his activities, he was awarded prize money as well as a golden badge by the Macedonian Hunting Association (Hunter, 3, 1957).
- Report written by Prof. Jovetic that gives a survey of the collected game within the hunting grounds of the Faculty of Agriculture and Forestry (Skopje) during the period 1951-1957. Among other species, he gives data for 197 falcons, 171 hawks and 43 eagles** killed within this period of time (Hunter, 5, 1958).
- Essay dedicated to Mr. Vlado Denkovski, game warden within the Republic of Macedonia hunting ground and pheasant farm, “Katlanovo,” near Skopje. In the essay, the successful work of the game warden in protecting the hunting ground from harmful game is described. He killed 30 eagles** and many more hawks and falcons within a period of only three months (Hunter, 6, 1958/59).

In the year 1960, a State institution having responsibility for cultural and natural conservation was established, the Macedonian Institute for Cultural Monuments Conservation. Within this Institute, a Department for Natural Rarities Conservation was created. In the same year, this Institute proclaimed the “Demir Kapija Gorge” as a “Monument of Nature” and placed it on the list of protected areas because of its geomorphological values and particular wild flora and fauna, especially the high incidence of birds of prey. Consequently, the local municipality became obliged to incorporate the status of this locality into its plan of Physical Planning.

In the year 1965, in accordance with the new law for Natural Rarities Conservation (Official Register of SRM, 16/65)[†], specifically with Articles 2, 4, 20 and 23, a decision for the permanent protection of 48 species of birds within the entire territory of Macedonia was passed. Most of the birds of prey were included on this list, with the exception of hawks, kites and harriers. In practice, however, the list of permanently protected bird species did not achieve its desired effect, not only among poachers, but also within the hunting societies themselves, probably because of the lack of an appropriate control mechanism for its implementation.

The Macedonian Hunting Association wrote an article which was published in the journal, “Hunter” (No. 1, 1960/61), entitled “Protection of Game in Accordance with Changes in the Criminal Statutes.” In the article, hunters were informed about increases in the severity of penalties associated with violations of the new hunting law, especially in cases of shooting protected or rare game species, or using traps, nets or certain other equipment. In general, however, these measures did not improve the situation in practice. One of the reasons was a misunderstanding of the terms: protected, rare and harmful game.

As evidence of this, note the following examples from the journal, “Hunter”:

- In an article written by the Macedonian Hunting Association, the decision to increase the number of points required per hunter per year from 40 to 60 was explained. Regarding birds of prey, however, nothing was changed. Again, for the legs of an eagle,** a hunter would get 10 points, for a hawk, 7 points, and for the legs of falcon, 5 points (Hunter, 4, 1960/61).

[†] Publication in which Federal governmental regulations of the Socialist Federal Republic of Yugoslavia (SFRY) were printed.

- In the report of the Hunting Society “Tikves” from Kavadarci, for the period 1960/61, several successful hunters who killed large numbers of birds of prey were mentioned. In this report, a hunter was singled out because he killed four eagles, ** three hawks and one falcon, and received a large number of points. In the same article, a summary of the numbers of harmful birds killed was given, within which - among others - 3,500 hawks were recorded. In the conclusion of the report, this was considered to be a “huge contribution to hunting in general” (Hunter, 1, 1961/62).
- The frequent contributor to the journal, “Hunter,” Mr. Milan Gligorov, in his editorial on harmful game, includes within this category all birds of prey except vultures and the Common Buzzard (*Buteo buteo*). He recommends extermination of harmful game at all costs. In the same column where he excludes vultures from the list of harmful game, however, the author suggests that only the Bearded Vulture should be protected, explaining that this is not because this vulture is not harmful, but because its population is reduced and the species is threatened (Hunter, 2, 1962).
- Hunters from the village Kostenci, near Bitola, and especially the teacher from the village, killed four eagles, ** four falcons and two Eagle Owls, among other species, in the previous hunting season (Hunter, 2, 1962).
- In the report of the Macedonian Hunting Association for the hunting seasons 1961/1962 and 1962/1963, in addition to the 60,495 Magpies and 71,678 Hooded Crows destroyed, the combined number of other harmful feathered game (birds of prey) killed for all species was 26,931 for the first hunting season and 24,244 for the second (Hunter, 6, 1962).
- Prof. B. Trpkov, in his article on the extermination of harmful birds, described using a stuffed specimen of an Eagle Owl as a lure. He reported that at the hunting ground, “Trubarevo”, near Skopje, within a period of two hours, 58 harmful birds were killed, and in the afternoon of the same day, another 45 birds (Hunter, 1, 1967).
- In the same issue, the Macedonian Hunting Association presented the new Law on Hunting passed on February 13, 1967 (Official Register of SRM, 5/67). In Article 2 of this law, all groups of birds of prey were listed: eagles, falcons, hawks, buzzards, kites, harriers, vultures and owls. However, within the group of protected species, only vultures were included. The other birds of prey were excluded from protection (Hunter, 1, 1967).
- Report written by the Macedonian Hunting Association on the activities undertaken to poison wolves using strychnine in the region around the city of Bitola. The report pointed out that March is the best month for extermination of furred harmful game, while May is the best month for harmful feathered game. Later in the report, it was mentioned that educational workshops to teach hunters how to use poison had been organised (Hunter, 3, 1967). Unfortunately, no data on the consequences for vultures as a result of this activity were presented.
- Report written by the Hunting Society of Tetovo on the results of the Animal Hunting Plan. Among other species in the report, data concerning the killing of 277 hawks was given (Hunter, 3, 1967).
- Information that Prof. Jovetic has published the procedure for using 90% hydrocyanic acid and strychnine (both bottled in glass ampullae) for the successful elimination of harmful game (Hunter, 4, 1967).
- Report on the intensified activity to eliminate poaching in the Bitola region. It was pointed out that just within the previous year, 112 criminal charges for illegal hunting were brought before the court, and that the police had confiscated 90 weapons. The cases became stalled in the courts, however. In the same issue of the journal, it was

mentioned that additional information had been forwarded to the Chief of Police in Bitola concerning night hunting with spotlights. It was later determined that members of the Board of the Hunting Society of the town of Makedonski Brod were hunting within a protected area at night with four-wheel drive vehicles and headlights. When the poachers were reported by the game wardens, instead of the violators being punished, the game wardens lost their jobs (Hunter, 5, 1970).

- Report from the Macedonian Hunting Association on the hunting season 1968/1969. In addition to other species, data concerning 1,060 killed hawks were given (Hunter, 6, 1970/71).
- Information for hunters - written by Mr. Ivan Doncev, Executive Secretary of the Macedonian Hunting Association - on obtaining strychninum nitricum imported from Germany, with instructions on how the poison should be used to kill harmful game (Hunter, 4, 1972).

Tardily, in the year 1973, a law for ratification of the International Convention for Bird Protection (1950) was adopted (Official Register of SFRY, No. 7/73). Consequently, the Hunting Association of Macedonia incorporated all of the protection measures of the Convention within the new hunting law also adopted in 1973 (Official Register of SRM, 5/73).^{††} In this law, the definition of the term, "hunting," was explained as: "reproducing, keeping, hunting and exploiting game." In addition, within the term, "game," two groups of wild animals were included: furred game (mammals) and feathered game (birds). The subgroup, "birds of prey," encompassed: falcons, eagles, vultures, buzzards, harriers, kites, hawks and owls. Except for hawks, all birds of prey were permanently protected.

In the following years, the hunting journal published fewer cases of violations of the existing hunting laws, even though such cases were not so rare. The following reports illustrate the situation with hunting activities during that period of time:

- In the report of Prof. Jovetic on the birds of prey and their taxonomy intended for the education of hunters, he recommended further killing of hawks, while for falcons and kestrels he was noncommittal. Concerning eagles, primarily because of the reduction of their frequency and abundance, he recommended their protection. Jovetic's opinion of buzzards was that they were beneficial birds which were becoming victims because of their similarity with hawks. Regarding harriers, he believed they should not be allowed to become too abundant. According to Jovetic, vultures were the only true beneficial birds in nature because of their role in cleaning the environment (Hunter, 5/6, 1974).
- The Hunting Association of Macedonia organised a two-day workshop in order to educate hunters on how to exterminate harmful game using thallium sulphate (Hunter, 4, 1975).
- Report on the hunter from the village, Zashle (Demir Hisar), who killed 500 birds of prey, of which 20 hawks were prepared as stuffed specimens to keep as trophies in his home (Hunter, 6, 1978).
- The Hunting Society of Veles made a determination of the denar amount of fines for hunting permanently or temporarily protected species. The penalty for killing an eagle, falcon, buzzard or vulture was 400 denars, for a rabbit, 800 denars, and for a wild boar, 3,000 denars (Hunter, 4, 1980).
- The Hunting Society of Tetovo organised the poisoning of a wolf that had eaten 28 beef cattle. For that purpose, they prepared animal carcasses with strychnine. As a

^{††} Publication in which governmental regulations of the Socialist Republic of Macedonia (SRM) were printed.

result of this activity, five wolves were poisoned, but no information was given as to whether vultures were also poisoned (Hunter, 4, 1980).

- A list of 48 permanently protected bird species was given, in accordance with the decision that was handed down in 1965 by the Macedonian Institute for Cultural Monuments Protection (Official register of SRM, 16/65). Included in this list were falcons, kestrels, buzzards, eagles, vultures and owls, but not hawks, harriers or kites. In the same edition of the journal there was a sad essay written by the miners of the Catino Mine - situated in the Rozdenska River canyon in the foothills of Kozuf Mountain - entitled "Empty Nest in Catino." The miners reported that for generations a pair of Egyptian Vultures had been nesting over the entrance to the mine. The miners had become used to the vultures; they had become a symbol of the mine. Each year in early Spring, they watched for the vultures' return from over-wintering, and in late Autumn they saw them off again. Every day throughout the nesting season the vultures flew over the mining settlement in search of dead tortoises and other animals. Because of the wolf extermination program, local hunters in several areas set out poisoned carcasses of sheep and a dog. The result of these activities were six poisoned wolves and one fox. The consequences were much greater for the vultures, however. In the area around the village of Garnikovo, six dead Griffon Vultures were found. One of the two Egyptian Vultures nesting over the entrance of mine landed in the front of the mine and died. The other bird never appeared again. Two juvenile birds that had been left alone in the nest died of starvation. After this event, the nest was never occupied again. The miners, through their essay, were expressing their indignation at this event, and requested that appropriate measures for the protection of vultures, and the environment in general, be undertaken by the responsible authorities (Hunter, 6, 1982).
- Brief note from the Hunting Society of Tetovo explaining that they forbade the hunting of migratory birds in the year 1981 and, because of the very positive effects, they would continue the same prohibition in 1982 (Hunter, 7, 1982).
- A new column in the journal "Hunter" was started, focusing on permanently protected bird species. In the first report, drawings, descriptions, and photos of Griffon Vultures, Golden Eagles and Ospreys were presented. In the second report, the Peregrine and the Lanner (illustrated), as well as the Hobby (without illustration) were described (Hunter, 8, 1982).
- A column contained a suggestion for a wide range of activities to be taken against birds of prey. The author pointed out the extremely high existing numbers of birds of prey, especially the goshawk. Therefore, he suggested a broad range of methods for the mass extermination of birds of prey, their nests, eggs and juveniles. Furthermore, the author insisted that other citizens, in addition to hunters, should be included in this action. In the same edition of the journal, the Hunting Association of Macedonia requested a ban be placed on any further use of strychnine for wolf poisoning, notwithstanding the fact that the current law allowed for its use. In this report, the motive for such a request was not clarified (Hunter, 4, 1985).
- The Presidency of the Hunting Association of Macedonia accepted an urgent request from the Committee for Agriculture and Forestry, from the Department for Natural Rarities Protection, as well as from the daily printed media of March 20, 1985, for cancelling the further use of strychnine. In particular, over a period of 30 years, strychnine had been used by most of the Hunting Societies for exterminating wolves, foxes and other harmful game, but the most notable consequences were the poisoning of vultures. Halting the further use of strychnine was a way to protect the already reduced populations of vultures. Later, the need for winter-feeding of vultures was

indicated because hunters had been finding cases of fatigued or dead birds as a result of starvation. Whenever possible, the hunters kept the fatigued birds and, after their convalescence, returned them back to the wild. In the same journal, the Hunting Societies and other responsible authorities were called upon to undertake measures to prevent acts of nest robbery and the smuggling of eggs, juveniles and adult birds (Hunter, 5, 1985).

- A column focused on the articles of the Paris Convention on Bird Protection (October, 18, 1950). This Convention was ratified by SFRJ in 1973. Therefore, the Hunting Societies of Macedonia were obligated to begin the protection measures that had been incorporated within the Hunting Law of 1973. Afterwards, separate articles within the law were discussed and thoroughly explained (Hunter, 1, 1986).
- An essay entitled “Salvation of Death” reported on a poisoned Griffon Vulture that had been discovered by children on the outskirts of the town of Kavadarci, where the citizens disposed of dead animals. Two local hunters took the vulture and, in accordance with medical instructions, nursed the vulture back to health and then returned it to the wild. In the conclusion of the column, an appeal was made to the public for dead animals to be buried rather than thrown in a garbage dump (Hunter, 7, 1986).
- A previously published essay on the Bearded Vulture in Macedonia was presented, written by the Serbian ornithologist, B. Grubac (Hunter, 7, 1986).
- A column from the daily newspaper “Nova Makedonija” (New Macedonia) entitled “Is the Eagle Nest Endangered?,” written by S. Suplinovski, was reprinted. The author explained the events that occurred after the opening of a quarry at the entrance of the Demir Kapija gorge. The residents of the town of Demir Kapija became alarmed and quickly reacted by seeking help from the responsible authorities. The Department for Natural Rarities Protection received an urgent call concerning this issue from the Croatian Institute for Natural Rarities Protection. The area was inspected and a decision made to halt further excavation of stones from the quarry. This decision was forwarded to the Committee on Industry and Energy, as well as to the municipality that had given permission for the opening of the quarry. However, the most striking fact was that the Department for Natural Rarities Protection had also given its permission for the opening of the quarry, without considering that this very same Department had proclaimed Demir Kapija gorge as a legally protected area in 1960. It became obvious that the municipality had not incorporated this law within its Physical Planning Register (Hunter, 6/7, 1987).
- In an interesting column written by S. Savevski and entitled “Migratory Bird Conservation,” the author pointed out that the country of Macedonia, in accordance with the Paris Convention, was required to develop several bird reserves. In such areas, birds could safely nest and raise their young, and migratory birds would have appropriate resting sites along their migration routes. The author suggested that such bird reserves should be established in the areas of former wetlands which had been previously drained (the marsh on the Crna River in Pelagonia, Monospitovo marsh, Struga marsh, Katlanovo marsh etc.). All of the areas that were often inundated were appropriate for such purposes (Hunter, 8/9, 1987).
- A column on the Bearded Vulture, with a description and illustration of the bird, written by B. Trpkov, professor in the Faculty of Forestry, Department of Hunting. The author described the Bearded Vulture as a rare and threatened species due to negligence toward its protection, whether by shooting, destroying of nests or poisoning. He reported that he had personally noticed three specimens along the

Vardar River near Negotino in 1981, and one specimen on the Vitacevo highland in 1987 (Hunter, 3/4, 1988).

- Another column by Prof. Trpkov concerned the Griffon Vulture and included general data on this species, which he considered threatened. He reported that he had monitored Griffon Vultures in the Demir Kapija gorge in 1981 and 1986, on the Crna River near Vrpsko in 1986, on Stogovo Mountain (Western Macedonia) in 1983, in the area of Brzovec on Bistra Mountain in 1978/79 and on the Bogoslovec hill in Ovce Pole in 1974. In 1962, one specimen was shot and stuffed for the zoological collection of the Faculty of Forestry (Hunter, 6, 1988).

Except for the data from Hunter magazine, little additional published data concerning hunting activities are available. One brief note by Limbrunner deserves mention. At the end of his 1988 article, "Mazedonien fuer Ornithologen," Limbrunner regretfully commented on one case of nest robbery in the Babuna River gorge in 1971. Limbrunner and his colleagues noticed an Austrian man reaching into the nest of a Long-legged Buzzard (*Buteo rufinus*) and taking something from the nest. Clearly, he was taking either eggs or juveniles. As a result, Limbrunner notified the police in Veles, as well as the police in Austria.

Hunting Activities in the Recent Period

For this study, the current situation regarding hunting will consist of activities within the last 12 years, the period after Macedonia gained its independence in 1991. In order to better understand these recent hunting activities, a short survey of the general strategy and policy framework concerning biodiversity conservation is necessary.

Strategy and Policy Framework

Policy Framework

The National Environmental Action Plan (NEAP) was completed in 1997. NEAP priorities related to biodiversity include:

- Improved management of the Lakes Ohrid, Prespa and Dojran
- Renewal and preservation of forests
- Strengthening the environmental management capacity of institutions
- Development of improved management plans for protected areas

A few years ago, a National Committee for National Biodiversity Strategy was founded within the framework of the Ministry of Environment. The Committee is currently working on preparing a National Biodiversity Strategy.

Legislative Framework

Laws

Following the recommendations of the NEAP, in December 1996 the Council of the Republic of Macedonia established the Law for Protection and Promotion of the Environment and Nature as the basic and preferred strategic goal. Through the passage of this law, a legal framework was established for the realisation of the dedicated strategy for protecting and promoting the environment (NEAP).

There are numerous general environmental laws in Macedonia. The main problem is in their implementation. Laws relevant to biodiversity conservation include the following:

- Protection of Natural Rarities Law (1973) amended 1976, 1990, and 1993
- Law on protection of Lakes (1977)
- National Parks Law (1980), amended 1990, 1993
- Regional and Urban Planning (1985), amended 1990, 1996, 1997, 1999
- Forests Law (1997)
- Waters Law (1981)
- Fishing (1993)
- Hunting (1996)
- Management and Use of Pastures and Abandoned Fields and Meadows (1974), amended 1998, 2000
- Geological Investigations and Exploitation of Mineral Resources (1988)
- Construction Investment (1990)

These laws may be affected by or amended/modified by other laws in related sectors. This results in problems where overlaps occur and where there are conflicts of character.

International Conventions

Macedonia has ratified several major international conventions in the field of biodiversity conservation. They include the following:

- Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus), as of 22 July 1999
- Convention on Biodiversity (CBD), as of 2 December 1997
- Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), as of 4 July 2000
- Convention on the Conservation of European Wildlife and Natural Habitats, as of 17 December 1998
- Convention on the Conservation of Migratory Species of Wild Animals, as of 1 November 1999
- Convention Concerning the Protection of the World's Cultural and Natural Heritage, as of 30 April 1997
- Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar), as of 8 September 1995
- Convention on Environmental Impact Assessment in a Transboundary Context, as of 31 August 1999

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, as of 16 February 1997
- Vienna Convention for the Protection of the Ozone Layer, as of 10 March 1994
- Convention on Long-range Transboundary Air Pollution, as of 17 November 1991
- Framework Convention on Climate Change, as of 28 January 1998

In addition, Macedonia has also signed agreements of co-operation in the field of environmental protection with its neighbouring states, Albania and Greece. On February 2, 2001 – World Wetlands Day – Prime Ministers from all three countries declared “Prespa Park” a new trilateral transboundary protected area.

Notwithstanding the fact that the Government is making strong efforts in coordination the current legislative framework with that of European Union, the country is faced with transition period that is characterized with large recession in economy, enlargement of unemployment and fall of the living standard of the population. The political instability of the country, as well as the inter ethnic conflicts resulted with war in the year 2001. In such circumstances, it is impossible to expect complete implementation of current laws, concerning nature conservation in general, including the hunting law.

The Current Hunting Law

The current Hunting Law was officially proposed on April 17, 1996, and adopted by the Parliament on May 5, 1996 (Official Register of the Republic of Macedonia [RM] 20/96), amended 1997. In accordance with this law, the term “hunting” is defined as “reproducing, raising and exploiting game.”

In Article 4 of this law, a list containing 127 species of game is presented, consisting of 24 mammal and 103 bird species (Table 2). Of the total of 103 game bird species, 70 are included within the category, “permanently protected species.” All birds of prey, including the four vulture species, are within this category - except the Goshawk (*Accipiter gentilis*). The Goshawk is included on the list of eight bird species with no protection whatever, meaning they could be hunted at any time. On the one hand, this could lead to misidentification of Goshawks in nature by hunters. On the other hand, under the pretext of hunting Goshawks, other birds of prey, such as vultures, could become victims.

Table 2. List of Game Species of Macedonia (from 1996/97 Law on Hunting).

Category of Game	Total Number of Species	Mammal Species	Bird Species
Permanently protected	79	9	70
Seasonally protected	31	6	25
Without any protection	17	9	8
Total number	127	24	103

Hunting Grounds and Concessions

After adopting of the Hunting Law in 1996, The Ministry of Agriculture, Forestry and Water Economy prepared the additional regulations necessary for implementation of the law (Official Register of RM 16/97). The Department of Hunting, within the Faculty of Forestry in Skopje, also prepared a General Long-term Management Plan for hunting activities within the entirety of Macedonia which was first adopted by the Ministry of Agriculture, Forestry and Water Economy, and then by the Government on May 5, 1997. This document addresses the development of hunting activities over a period of 20 years, as well as establishes the

borders of hunting grounds within Macedonia in accordance with their use for big or small game.

On the basis of this document, the government adopted specific regulations allowing for the establishment of a total number of 249 hunting grounds (104 for big game and 145 for small game) (Official Register of RM 49/97, amended 19/2001). Four of the 249 have been established as “State Hunting Grounds” (Official Register of RM 56/97), as follows:

1. State Hunting Ground for Big Game “Polaki-Kocani”; 15,250 ha
2. State Hunting Ground for Big Game “Jasen-Skopje”; 24,000 ha
3. State Hunting Ground for Big Game “Lesnica-Tetovo”; 11,930 ha
4. State Hunting Ground for Small Game “Trubarevo-Skopje”; 1,475 ha

State Hunting Grounds are used exclusively for the needs of the State (i.e., hunting organised by the President of Macedonia, the annual hunt for the diplomatic corps and hunting organised in honour of official visits by high foreign diplomats).

As for the rest of the 245 hunting grounds, in October 2002 an open competition was held awarding concessions to the highest bidders. Users of a certain hunting ground are obliged to pay for their own specific management plan (which is made in accordance with the General Management Plan and adopted by the Ministry of Agriculture, Forestry and Water Economy). They must also pay an annual fee of 20% of the estimated value of the game present within the hunting ground as specified by their individual management plan (Official Register of RM 16/97).

After the open competition, leases for 233 hunting grounds were awarded. Four in the area of Skopje and 12 in the area of Bitola were not taken under concession. BIOECO scientists visited several of the larger hunting societies which have taken more than one hunting ground under concession. If one takes into consideration, on the one hand, the fact that the users of the hunting grounds (domestic and foreign hunting societies and other legal entities) had to make large financial investments in order to pay for the expensive management plans and concessions, and on the other hand, the slow movement of the legal system in punishing poachers, then it is easy to understand why the hunters are extremely dissatisfied. As a result, there is a strong movement among the users of these areas to make a request to the government to reduce the amount of their annual fee from 20% to 10%.

BIOECO’s assessment of the situation is that, under the current set of circumstances, the users of the hunting grounds are not complaining without cause. They are not able to obtain permanent and effective game warden service, and the poaching is considerably higher than it was before. Because of a lack of money, many users of the hunting grounds are not paying their membership fees to the Macedonian Hunting Association and it is slowly collapsing. This is also the reason why the hunting journal, “Hunter,” is no longer being published. The last issue was No. 1 of the year 2000 (Figure 4). We are concerned that, unless the confusion concerning the hunting grounds is clarified, there will be a further reduction in the general biodiversity, including vultures, resulting from the lack of an organised game warden service to prevent unscrupulous hunters from killing whatever they want.

Figure 4 – Last issue (August 2000) of “Lovec” (Hunter).

On a positive note, over the last few years the public’s awareness of biodiversity in general, especially bird protection, has been raised as a result of the activities of the Ministry of Environment and Physical Planning, NGOs and the media. In this way, strong pressure has

been exerted upon hunters, and they are much more careful to avoid breaking hunting laws. Indirectly, even among the hunters, knowledge concerning nature protection has increased. Therefore, cases of the direct shooting of vultures are very rare.

Reduction of vulture populations is now mainly the result of other types of human activities. In the last decade, most unnatural deaths among vultures have been the result of accidental poisoning, especially as an unintended consequence of poisoning wolves. The last striking example (February 2003) was the unintended poisoning of seven Griffon Vultures and one Golden Eagle near the village Erdzelia, in Ovce Pole valley (east-central Macedonia) (Figure 5).



Figure 5 – Photos from the last poisoning incident in February 2003 (Ovce Pole valley).

Hunting Activities - Future Situation

In the period after gaining its independence, Macedonia is moving toward the establishment of a political and economic community with a legal system that should enable its fast integration with the European Union and the broader international community. Consequently, the future development of hunting activities will be regulated by a new hunting law, within the framework of the general policy of the State to harmonise its laws with those of the European Union.

The existing experiences with biodiversity conservation and sustainable use of natural resources demonstrate that Macedonia has an urgent need for reorganisation at the governmental level, implementation of international conventions and agreements, as well as adoption of European and international methodologies and criteria in this field. This determination is the result of considerable experience gained through the execution of many projects funded by foreign donors or with international exposure. The foundation for further activities within the field of biodiversity conservation and the sustainable use of natural resources, including hunting activities, must be the National Strategy on Biodiversity, which will be finished before the end of this year.

Unfortunately, since Macedonia has not prepared its own National Red Data List or Red Data Book of threatened species, for the needs of the National Strategy (within the Chapter, "Threatened Species"), the Macedonian list was prepared in accordance with the Red Data List of European vertebrates (that is, the species which are present within Macedonia were taken from the European List). This resulting list does not completely reflect the real situation within nature in Macedonia; it was merely the most appropriate solution at the moment.

On the other hand, one of the strategic options within the Strategy is the preparation of improved National Red Data Lists and Books of threatened plants and animals, as well as management plans for protected areas. In the Strategy, within the chapter on threatened species, 113 vertebrate species are included (66 bird species, 30 fish species, 16 mammal species, and 1 reptile species). Concerning future hunting activities, it is obvious that the current hunting law should undergo significant changes because it will not be in accordance with the National Strategy.

We shall mention only the most striking examples where conflicts are present:

1. In the current hunting law, three species on the list of threatened species in the National Strategy are within the category of hunting game without any protection.
2. Nine bird species listed as threatened in the National Strategy are placed within the category of seasonally protected game birds in the current hunting law.
3. The National Strategy on Biodiversity anticipates enlarging protected areas by 50% within a period of five years. This means that the size of certain hunting grounds will likely be reduced and the land re-designated as protected areas.

It seems clear that the current hunting law, even though it was adopted fairly recently (1996), will have to be changed to be in accordance with the National Strategy and the international conventions and agreements that the Macedonian Parliament has already ratified or is currently considering. In order to facilitate the future transformation of hunting activities into a more organised form and one in accordance with European standards, several general recommendations on biodiversity conservation proposed by BIOECO's scientists and accepted for incorporation within the National Strategy will be mentioned:

1. Co-ordination, including better definition of roles and responsibilities, information sharing and streamlining of procedures and operations between government agencies offers a significant potential for more effective planning, policy, and monitoring. This is particularly the case between the relatively new Ministry of Environment & Physical Planning and the Ministry of Agriculture, Forestry and Water Resources.
2. Environmental NGOs specialising in biodiversity conservation are still relatively in their infancy in Macedonia. Those that exist have played an important role in raising the general public's awareness and commitment to biodiversity conservation in the country. More remains to be done in co-ordinating the efforts of NGOs and supporting them in their efforts to increase awareness and education, advocacy and lobbying, information gathering and sharing, and developing on-the-ground initiatives supporting local communities, and others.
3. Due to its size and geographic position, transboundary issues are of critical importance to biodiversity conservation in Macedonia. Efforts need to be encouraged for greater regional co-operation.
4. The private sector has had a very limited role in biodiversity conservation in Macedonia. Opportunities for private sector involvement in biodiversity conservation include ecotourism development, sustainable forest management initiatives, hunting reserves, and protected area management.
5. Develop, implement and fund management plans for existing protected areas and increase the capacity of management to carry out the diverse level of management functions required.
6. Establish a protected area system plan/network which is representative of the various ecosystems in Macedonia, not just mountain ecosystems (although a large level of biodiversity does exist there), and which takes into account the criteria of the "Emerald Network" of the Council of Europe and the priorities of the European Biological and Landscape Diversity Strategy.
7. A certain level of skill, which is currently lacking, is needed within the NGO sector as well as within ministries, universities and academic institutions in order to address the economic and social aspects of biodiversity conservation, the development of local community involvement and social approaches to collaborative management.
8. Planned development of the National Biodiversity Strategy (and its implementation) should be supported and it should focus on the integration of nature conservation and biodiversity into the approaches for sustainable economic development in agriculture, forestry, tourism, water management and other related sectors.

This study was undertaken within the framework of the Action Plan for the Conservation, Recovery and Reintroduction of Vultures on the Balkan Peninsula and Adjacent Areas.

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