

# A profile of modern hunters in Antalya province, Türkiye

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## Abstract

The aim of this study was to investigate the socio-demographic and cultural characteristics of modern hunters in Antalya province based on the data of the Game Management Information System (AVBİS) being overseen by and under control of the General Directorate of Nature Conservation and National Parks, the Ministry of Agriculture and Forestry of Türkiye. According to the study results, the educational status of hunters was the following: the group with the primary school level made 7.8%, with the secondary school level made 4.5%, with the high school level made 9.9%, with the associate level made 0.6%, with the undergraduate level made 3.9%, with the master level made 2.7%, and with the unknown educational status were determined to be 70.06%. Considering the professional status, it was determined that 79.3% were of unknown status, 1.6% were retired persons, 3.4% were tradesmen, 1.6% were workers, 2.9% were public sector employees, 0.8% were students, 2.0% were employees from the private sector and 8.4% were self-employed persons. It was revealed that for gaming the hunters visited Aksu State Hunt, Serik State Hunt, and Gebiz State Hunt (3.29%) most frequently. The least preferred gaming areas were Gazipaşa Sivastı Çığlık State Hunt and Kaş Asas Hunt (1.41%). Usually, hunters prefer to gun for common blackbird (*Turdus merula* L.) foremost (9.69%) and coot (*Fulica atra* L.) least of all (1.07%). As is evident from this study, socio-demographic profiles of hunters in Antalya province, Türkiye, and in Europe appears to be similar. However, a significant difference was observed in the number of women hunters registered. While the average number of women hunters in some European countries reached 10.5%, no women hunters were registered in Türkiye.

**Keywords:** game management, information system, hunter, game animals, wildlife, profile

## Introduction

Hunting, which parallels the development of human history, has been a source of food and livelihood for common people, as well as venues for strengthening political ties and entertainment for noble families, military estate, high-ranking officials, top diplomats, visiting dignitaries, and members of royal families. In Turkish history, hunting was considered as preparatory and training activities for warfare first of all (Küçükosmanoğlu and Arslangündoğdu 2009). Today hunting mainly is a type of recreation. Recently a rapid increase in the number of hunters is observed in Türkiye. This increase puts pressure on wildlife resources. Illegal hunting and poaching pose problems in protecting, developing, and managing wild game populations (Keleş 2014).

Specific measures should be taken to ensure the sustainable use, management, and protection of wild game populations (presence). To ensure the sustainability of wild game it is necessary to protect wild animals together with their natural habitats. Poaching must be under con-

trol, hunting should be regulated, and natural resources should be evaluated in a way that would benefit the national economy. In Türkiye, Land Hunting Law No 4915 aims to protect wildlife with its natural habitats and to manage controlled hunting by transferring it to future generations within the framework of a particular order (İğircik et al. 2008, Küçükosmanoğlu and Arslangündoğdu 2009).

Although Türkiye started to use the Game Management Information System (AVBİS) in 2013 (AVBİS 2018) extensive studies on hunting in Antalya province using AVBİS data was not done before. The academic studies about hunter profile in Türkiye are limited to a few survey studies with the use of questionnaires performed in the Aegean region (Ay et al. 2005), in Thrace (Hafizoğulları 2006), in Bartın (Keleş 2014), and in Giresun provinces (Yavuz 2018). There are many studies analyzing environmental, social and economic significance of hunting in European countries (Pinet 1995, Martínez et al. 2002, BIPE 2015, NÖ Jagdverband 2019, Kupren and Hakuć-Błażowska 2021). Similar studies investigate hunter profiles in oth-

er countries around the world. In this study, the profile of hunters from Antalya province was compared with those obtained in the studies carried out in Europe due to the similarity of the continental fauna and flora in Türkiye and European countries. This study aims to determine the profile of Antalya hunters based on the data retrieved from the Game Management Information System (AVBİS). These study results discussed considering results obtained in other regions of Türkiye and Europe.

Sustainability of hunting resources means that resources are planned by considering the balance of conservation and their utilisation as needed (Güneş 2008). In developed countries, resource management, the number of hunters, the time allotted for hunting, the number of times a year hunted, the type and number of animals pursued, the number of people hunting, the money spent on hunting, and the demographic and socio-economic characteristics of hunters are determined periodically (NSSF 2011, US FWS 2015, FACE 2022). Using this information, governments calculate the contribution of hunting to the national economies and plan the game management. Conserving and developing the natural resources while making hunting activity a sector that benefits the country's economy can be achieved with conscious hunting and proper management (İğircik et al. 2005). To hunt in Türkiye, a hunting license, and a hunting permit from the AVBİS are required in the areas where hunting is allowed.

### Materials and methods

The Game Management Information System of the Ministry of Agriculture and Forestry, Antalya province, affiliated with the VI Regional Directorate, has been selected as the study area. Antalya is located within the borders of the Mediterranean region; its climate is warm and rainy in winter and hot and dry in summer. Antalya region, with its Mediterranean climate characteristics and rich vegetation, brings the richness of wildlife. The vegetation of the province (elevation ranges between 0–600 meters a.s.l. BSE) consists of the maquis that is well adapted to extreme summer drought. The vegetation belt between 600–1,200 meters a.s.l. is formed by mixed forests of red pine, oak species, larch, and Aleppo pine. At the elevations between 1,300–2,000 meters a.s.l. these species are replaced with fir, cedar, beech, yellow pine, and juniper species.

The data concerning the research subject (hunters' education, occupation, the hunting ground, and animal species they prefer to gun) were selected and retrieved from the Game Management Information System (AVBİS 2018). The Game Management Information System (AVBİS) is an official database, in which information about hunters is recorded and it operated by the General Directorate of Nature Conservation and National Parks of the Ministry of Agriculture and Forestry of Türkiye. Hunters registered in this information system are obliged to enter data about their education, occupation, the preferable hunting grounds

and game species they prefer to gun to the information system, respectively. Since the hunters can access the database from individual accounts with their own passwords and national ID numbers, database pictures could not be included in the article due to the principle of protection of personal data and confidentiality of official documents. The database can be accessed at the AVBİS for the hunters with national ID numbers. Only the system administrator can see the hunter's data provided to the system by entering own administrator's password. Since hunters left some fields in the system blank, we encountered data deficiencies in this fields. Although there was a separate title on the age of the hunter in the system, none of recorded information was found in it. Therefore, the age status of the hunters in Antalya province was not evaluated. Some parts of the system should be reviewed, and missing information must be entered into the system by the AVBİS administrator. Only in this way, hunter profile can be accurately determined.

Permission was obtained from the Ministry of Agriculture and Forestry, General Directorate of Nature Conservation and National Parks, by the decision under number 53741894-622.99-E.3090130, dated October 25, 2018, to access AVBİS data relating to Antalya Province. As a result of interviews with the system users and officials, it was determined that the AVBİS was established in 2013, but accumulated data was accurately and fairly processed in the system since 2015. This study evaluated the data for the 2015–2018 hunting periods. It was determined that 2,863 hunters were registered in the system and a comparison was made with the percentage calculation method over this number.

Percentage distribution is one of the four major types of descriptive statistics. In this study, the percentage distributions of the hunters were taken as a basis in the interpretation of their gender, educational status, occupation, hunting ground and prey type preferences. Percentage calculations given in the study were obtained by dividing the values in the columns by the total value of relevant survey and then multiplying by 100. SPSS 22.0 software package (IBM 2013) was used to calculate the percentage of the findings obtained from the AVBİS system. The purpose of selecting percentage values as a statistical evaluation method in the study is to make it easy for readers to compare the results of studies conducted in other regions of Türkiye and in different European countries.

### Results

#### *Educational status of the hunters*

The education level data, which obtained from a total of 2,863 enrollee hunters in the AVBİS, show that 7.8% of the hunters are primary school leavers, 4.5% are secondary school leavers, 9.9% high school leavers, 0.6% are graduates with associate's degree, 3.9% are persons with undergraduate degree and 2.7% of them have master's degrees. It was determined that 70.6% of hunters are regis-

tered in the system as “unknown” in the education status field (Table 1). In Antalya province, among hunters with known educational status, the high school leavers represent the highest share in the System (9.9%), while persons with master’s degree represent the lowest percentage, or 2.7%.

**Table 1.** Educational status of the hunters

Educational status	Total enrollee hunter number	%
Unknown	2020	70.6
Primary school leavers	223	7.8
Secondary school leavers	130	4.5
High-school leavers	282	9.9
Persons with associate’s degree	17	0.6
Persons with bachelor’s degree	113	3.9
Persons with master’s degree	78	2.7
<b>Total</b>	<b>2863</b>	<b>100</b>

#### *Professional status of the hunters*

When the occupational status of the hunters was evaluated, the occupational group of 79.3% of the hunters registered in the System was found to be of unknown status, 8.4% of hunters were self-employed, 3.4% were tradesmen, 2.9% were public sector employees, 2.0% were employees from the private sector, 1.6% were retired persons, 1.6% were workers, and 0.8% were students. It was seen that the hunters whose profession was unknown constituted 79.3% of the total, and the students had the lowest share with 0.8% (Table 2).

**Table 2.** Professional status of hunters

Professional status	Total enrollee hunter number	%
Unknown	2269	79.3
Retired persons	46	1.6
Tradesmen	97	3.4
Workers	47	1.6
Public sector employees	82	2.9
Students	23	0.8
Private sector employees	58	2.0
Self-employed persons	241	8.4
<b>Total</b>	<b>2863</b>	<b>100</b>

#### *Hunting ground preferences of the hunters*

When data from the system were evaluated to determine preferences of hunting ground in the hunters, their percentages were examined (shown in Table 3).

**Table 3.** Hunting ground preferences of the hunters

Hunting Ground	General data on hunting ground preferences	%
Akbaş	11	2.58
Akseki Cevizli Yarpuz	9	2.11
Akseki	8	1.88
Akseki Geriş	8	1.88
Aksu	14	3.29
Alanya Alara	11	2.58
Alanya Güzelbağ	11	2.58
Alanya Kargı	11	2.58
Alanya Mahmutlar Demirtaş	12	2.82
Alanya Merke	10	2.35
Alanya Söğüt	12	2.82
Demre	10	2.35
Doyran	11	2.58
Döşemealtı	10	2.35
Elmalı	11	2.58
Elmalı Gölova	9	2.11
Finike	8	1.88
Gazipaşa Doğanca	12	2.82
Gazipaşa Karatepe	12	2.82
Gazipaşa Merkez	12	2.82
Gazipaşa Sivastı Çığılık	6	1.41
Gündoğmuş Eskibağ	10	2.35
Gündoğmuş Merkez	10	2.35
Gündoğmuş Oğuz	9	2.11
İbradı	7	1.65
Kaş Asas	6	1.41
Kaş Gömbe	8	1.88
Kaş kalkan	10	2.35
Kaş Kasaba	10	2.35
Kaş Lengüme	8	1.88
Kemer	8	1.88
Kepez	11	2.58
Korkuteli Bahçeyaka	9	2.11
Korkuteli	8	1.88
Korkuteli Yeşilyayla	7	1.65
Kumluca Adrasan	9	2.11
Kumluca Alakır	9	2.11
Manavgat İkizpınar Burmahan	10	2.35
Manavgat Taşağıl Sağırın	10	2.35
Manavgat Yalçıdibi	10	2.35
Manavgat Yaylaalan	10	2.35
Serik	14	3.29
Serik Gebiz	14	3.29
<b>Total</b>	<b>425</b>	<b>100</b>

#### *Preference for game species among hunters*

When the hunter preference for game species were examined, it was determined that European hare and partridge were the species with the highest share of preference comprising 10.12%. On the other hand, the coot was of the least hunting preference with only 1.07% (Table 4).

**Table 4.** Preference for game species among hunters

Game animals	Total number of hunted animals	%
Quail ( <i>Coturnix coturnix</i> L.)	86	9.15
European turtle dove ( <i>Streptopelia turtur</i> L.)	87	9.26
Blackbird ( <i>Turdus merula</i> L.)	91	9.69
Rock dove ( <i>Columba livia</i> G.)	87	9.27
Eurasian woodcock ( <i>Scolopax rusticola</i> L.)	68	7.27
Wood pigeon ( <i>Columba palumbus</i> L.)	93	9.9
Coot ( <i>Fulica atra</i> L.)	10	1.07
Gadwall ( <i>Mareca strepera</i> L.)	12	1.28
Song thrush ( <i>Turdus philomelos</i> B.)	87	9.27
Partridge ( <i>Alectoris chukar</i> L.)	95	10.12
European hare ( <i>Lepus europaeus</i> L.)	95	10.12
Stone marten ( <i>Martes foina</i> E.)	16	1.7
Wild boar ( <i>Sus scrofa</i> L.)	93	9.9
Red fox ( <i>Vulpes vulpes</i> L.)	19	2
<b>Total</b>	<b>939</b>	<b>100</b>

## Discussion

In Antalya province, among the hunters with known educational status, the highest share of those who were recorded in the system comprised high school leavers (9.9%), while persons with master's degrees amounted the lowest percentage (2.7%). The educational status among the hunters from the Aegean region distributed as follows: 40.94% were primary school leavers, and 16% of them were college graduates (Ay et al. 2005). According to Bora (2009), 45% of hunters were the leavers of primary school and 12% of them were college graduates. According to the data from the survey carried out in Bartın, among hunters the leavers of high school comprised 34% and the leavers of primary school amount 18% (Keleş 2014). In Giresun, hunters who finished primary school were 21%, and 48% were high school leavers (Yavuz 2018). Results of these studies (Ay et al. 2005, Bora 2009, Keleş 2015, Yavuz 2018) have shown that among Turkish hunters the leading role play the groups with the educational status at the level of primary or high school. The highest share of hunters in France, Germany, Spain, and Poland were persons with secondary or higher education (Kupren and Hakuć-Błażowska 2021).

According to Antalya data in the AVBİS, the highest share among hunters by professional status belonged to self-employed persons (8.4%), while the students comprises the lowest share (0.8%). It was reported that within the Aegean region, 24% of hunters are retired persons, and civil servants comprises below 1% (Ay et al. 2005). Bora (2009) reported that among the hunters were mainly self-employed persons (28%), and at least 1% were tradesmen. Keleş (2014) pursued a questionnaire survey in Bartın province and found that 24% among the hunters were students and tradespeople, with 4% who formed the group of hunters that were least interested in hunting (2015). Ac-

ording to a study based on data from Giresun province, it was reported that 26% of the hunters were workers, and 6% were students (Yavuz 2018). It was shown that most hunters were self-employed persons, retirees, and workers in Türkiye (Ay et al. 2005, Hafizoğulları 2006, Bora 2009, Keleş 2015, Yavuz 2018). In Poland, among hunters by professional status unemployed persons comprised <0%, students amounted 10%, active participants of the labour market formed the most numerous group (68%), and the next largest group was formed by retirees (22%). In France, 26.1% of hunters were farmers, 5.2% were unemployed persons, and employees formed the smallest group (Martínez et al. 2002, BIPE 2015).

In Türkiye (Ay et al. 2005, Hafizoğulları 2006, Bora 2009, Keleş 2015, Yavuz 2018), like in Europe (Kupren and Hakuć-Błażowska 2021), hunting is a part of rural socio-economic activities. In 1995, Pinet (1995) in his study on European hunting reported that by using the ratio of hunters to overall population of a country, it is possible to identify four areas in Europe, namely: "1- The Scandinavian area, where hunting is a spontaneous leisure pursuit across all social classes, regardless of social geographical origin (rural or urban); 2- The Latin area, including Ireland, where hunting is a regularly practiced pursuit, even more among rural people and in the middle to lower income brackets; 3- The Anglo-Saxon area where hunting traditions and disciplines are probably more closely linked to land ownership and hunting has a more sporty character; 4- The German and Dutch areas which are influenced by long-standing aristocratic traditions and heavily urbanised territories. Standard hunting practice calls for high income. It is possible to develop a representative national sample of hunters as a basis for statistical and typological processing. Studies can only be repeated every four to six years, because this activity shows a strong cultural inertia".

When compared with the data taken from the System, it has been observed that hunters select for hunting the region close to Antalya. That fact that the hunting ground is close to the settlements of the hunters is economically essential and increases the preferability of the hunting ground.

When the preferences of game animals were examined, it was determined that European hare and partridge are the most preferable species in the Antalya region. Our findings are like those obtained in the study conducted in the Aegean Region; Ay et al. (2005) reported that the most preferred game species were partridge and European hare. Similarly, it was observed that hunter gun for European hare at higher rate in Thrace (Hafizoğulları 2006). It was observed that hunters in Türkiye most prefer to gun for quail and partridge, and then European hare (Ay et al. 2005, Hafizoğulları 2006, Keleş 2015, Yavuz 2018). The quail and partridge are the key game species in France, Spain, Finland, the UK, and Portugal (Martínez et al. 2002). Although the preferences for game animals vary regionally among hunters, the most preferred game animals

are those are native to the region where hunters live. Religious beliefs, traditions, customs, and cultural transfers have a tremendous effect on the choice of game animals. In and around the Urfa region in Türkiye, pigeons are not hunted because they are considered sacred. Similarly, the nilgai (*Boselaphus tragocamelus*) in India is believed to have descended from a holy ancestor and is not hunted. In Muslim countries, the wild boar meat is not consumed as it is considered as an unclean animal, and wild boar is hunted only for trophies and with the aim to prevent the animal damage caused to crops.

Finally, it is worth to mention the number of women hunters registered in the game management system both in Türkiye and Europe. Hunting in the world was most considered as masculine activity; however, in recent years, it was observed that women's interest in hunting has increased in the most European countries. According to data of Federation of Associations for Hunting and Conservation of the EU (FACE), one can see the proportion of women hunters in different European countries in Table 5 (FACE 2022).

In academic studies performed in European countries, viz. Poland, Finland and Austria, it was demonstrated that 3% of hunters in the former country and ca. 10% in the latter both ones are women (Martínez et al. 2002, NÖ Jagdverband 2019, Kupren and Hakuć-Błażowska 2021). In other European countries, the percentage of women hunters varies significantly from 1% in Portugal and Spain, 1.7% in France, 4.1% in Finland, and 10.5% in the UK (Martínez et al. 2002). No data on Turkish women hunters

were found either in academic studies performed in Europe or in the studies conducted in Türkiye. There were no female hunters registered in the AVBİS system too.

## Conclusions

By this study, the profile of the hunters of Antalya province was presented and compared with the data of other studies conducted in Türkiye and Europe. Before the study, we expected that more accurate information would be reached with the information concerning Antalya province were entered in the hunting management system. However, the presence of data under the unknown status ( $\geq 50\%$ ) regarding age, education level, occupation, gender and other sections in the system has been misleading for the hunter profile of Antalya province. It is believed that accurate and reliable results will be obtained if the General Directorate of Nature Conservation and National Parks informs the hunter associations, hunter clubs, and hunters registered in the system about entering their personal information completely. According to the exact information obtained from the system, it has been revealed that the Antalya hunter profile is similar to the general Turkish hunter profile and the European hunter profile.

To protect our biological diversity and natural resources and to contribute to the economy by making wise use of them, we must collect accurate information with the aim to plan sound management. Only if the system will be audited and information gaps and deficiencies will be filled, we can reach the right results. Thus, we can use accurate data and management can be substantiated and sustainable.

In recent years, great progress has been achieved in the sphere of wildlife conservation, development, and utilization. This positive development has been thanks to the training given by the Nature Conservancy and National Parks and activities dissemination of knowledge and information pursued by the local hunter associations. Determining a country's hunter profile and preferences among hunters will guide wildlife ecology and management and will incentivise necessary economic arrangements. If the needs and preferences are known, the balance of protection and benefit will be established, and environmental and financial gains will be achieved.

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**Table 5.** Proportion of women hunters in different European countries

Country	Percentage of women hunters	Data date
Austria	7.50%	2013
Belgium	1%	2001
Bulgaria	1.30%	2013
Croatia	0.60%	2013
Denmark	5.70%	2013
Estonia	1.34%	2013
Finland	6.10%	2013
France	2%	2006
Germany	10%	2012
Hungary	1.20%	2004
Iceland	2%	2002
Ireland	< 3%	2008
Italy	< 1%	2013
Latvia	< 1%	2013
Lithuania	1.48%	2012
Netherlands	5%	2004
Norway	12%	2013
Poland	2.32%	2013
Slovakia	3%	2013
Sweden	5.30%	2013
Switzerland	5%	2013
UK	6.50%	2017

Note: Since the information was recorded in different years, the whole table is given exactly as it is in the reference (FACE 2022b).

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