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Procedia Social and Behavioral Sciences 19 (2011) 165–172

Procedia Social and Behavioral Sciences

The 2nd International Geography Symposium GEOMED2010

Ornitho -Tourism and Antalya

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Abstract

The goal of this study is to evaluate the bird richness along with the bird watching activities in order to put forward the ornitho-tourism potential of Antalya. Bird watching is an in-situ activity to monitor, recognize and protect birds in their natural habitats. Antalya has different types of habitats such as long coastal band, wetland, woodland, mountainous and scrub areas. The province looks like a natural museum and/or laboratory for ornitho-tourism activities. Many protected areas have been declared as National Park and/or Special Protected Area due to the biodiversity and habitat richness of the region. During the surveys conducted in Antalya from 1988 to 2009, a total of 316 bird species was observed. It was seen that the region is important both for overwintering as well as a stopover for resting and feeding during bird migration. The region is also important for breeding of many birds. The bird diversity and protected areas of Antalya region seem to us very important factors which can attract many local and foreign tourists as a whole year activity.

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Selection and/or peer-review under responsibility of The 2nd International Geography Symposium- Mediterranean Environment

Keywords: Tourism, Bird watching, Ornitho-Tourism, Antalya.

1. Introduction

The contribution of tourism to the economies of the countries and regions has been one of the most influential factors in adoption of the approaches that the tourist activities should be spread over whole year. The success of this approach is associated with the features of the country or region's tourism supply, demand and expectations and implementation plans and policies. Antalya is a touristic area where diversity can be obtained easily in tourism because of its rich natural flora, wild animals, vegetation types, caves, rivers, mountains, plateaus and historicai remnents from different civilizations dating back to thousands of years. More than eight million foreign tourists came to Antalya in 2009 and this stresses the importance of the region in terms of tourism. Antalya is an eyecatching place not only in Turkey but also in the world, the use of this wealth has always been ignored uptill now. The whole concept was revolving around the triple themes of sea, sand and sun in the coast [18]. The tourism activity needs to be upgraded and varied by including natural activities for tourists. The bio-diversity of Antalya can prove very helpful in this connection. The natural and cultural values, infrastructure facilities, and skilled manpower will add to this. A number of investigations have been carried out on different aspects of tourism in Antalya however, these studies are not adequate to evaluate alternative touristic activities. Turkey's top tourist attraction in the center of the city

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doi:10.1016/j.sbspro.2011.05.120

(approximately 8 million in 2009), especially in alternative tourism resources has not been studied in detail. Ornitho tourism was chosen as the subject of research to contribute in this regard with the aim to determine the potential of Antalya Ornitho tourism.

2. Location of Study Area

Antalya is located in the South of Turkey within the Mediterranean Region. It lies between 36° 06' and 37° 27' north latitude and 26° 14'and 32° 27' east longitude, and is surrounded by Isparta and Burdur in the north, Konya in the northeast, Mersin and Karaman in the east, Mugla in the west and Mediterranean Sea in the south. There are 15 districts (Center, Gazipasa, Alanya, Manavgat, Serik, Kemer, Kumluca, Finike, Demre, Kas (between 5-44 m in the coastline), Gundogmus, Akseki, and Elmali districts Korkuteli (between 900-1000 m altitude from the sea - in the inner part).

3. Conceptual Framework

Bird watching is the field of observing and identifying birds in their natural areas during the cycle of life activity [22]. From 1970 uptill now the number of birdwatchers has increased day by day in the world and also in Turkey [16]. The numbers of birdwatcher trips has increased and this has led to an increase in the impact of bird-watching. Therefore, bird watching is attracting the attention of the environmental organizations, local authorities and national press [19]. Birdwatchers have created a new market for the tourism industry through travelling and staying in the region [21]. Natural areas are becoming an attraction center for birdwatchers and thousands of visitors. There are many examples to show how important to build up this industry in Antalya and other parts of Turkey. Taiwan Chang-Hua City was visited by 30 000 birdwatchers within the Falcon Monitoring Day in 1999 [1]. There are 16 Special Protection Areas for water birds in Patagonia and these are visited each year by more than 100,000 people [24]. Penguin colony near Cape Town in South Africa has been visited by 200,000 people during the years of 1996-1997 [16]. Hawk Mountain Protected Area in the State of Pennsylvania was visited by 53 583 birdwatchers in 1990-1991, more than 100,000 tourists visited Australia's Phillip Island Nature Park in 1995 to observe the penguin colony and U.S. Pat Rock in the State of Texas County was visited by 4000 birdwatchers during the Hummer Bird Festival held for 4 days [19]. These activities have resulted in a new market and allow the institutions to get more money for local people and support funding to protect natural areas. For instance, birdwatchers spent 32 billion dollars for bird-watching activities in 2001 and total income in the U.S. economy created by bird-watching is reported as 82.5 billion dollars. In addition, more than 1 million people were employed due to the bird-watching activities [13].

4. Findings

4.1. Bird Areas of Antalya

There are approximately 9000 bird species living with us in this world. A total of 502 bird species have been observed in Turkey and are classified as summer and winter visitors, resident and passage migrants [14, 15, 17]. Turkey forms as a bridge between 3 continents and therefore shows a rich bird fauna.The country is therefore an important bird watching zone and just on the route of migration. In particular Antalya has a significant potential in terms of bird-watching tourism. Gulluk Mountain National Park, Kursunlu Falls Nature Park, Yamansaz Lake and Surroundings, Manavgat and Surroundings, Belek Specially Protected Area, Akseki Forest area and Dalyan (Demre) are the major bird-watching areas. There are many projects run at several special places to determine bird species of Antalya [3, 23, 20, 5, 6, 7, 8]. Based on these projects and our personal observations, 316 bird species were detected from 1988 to 2010. Observed number of bird species in the region based on the area and years is given as follows; 151 (Campus of the Akdeniz University-between 1998 and 2003), 149 (Demre-between 2002 and 2003), 113 (Termessos National Park- between 1998 and 2000), 161 (Yamansaz-between 1997 and 2001), 214 (Bogazkent/Kocagöl-between 2000 and 2002), 188 (Manavgat River-between 1988 and 1995) and 152 (Kursunlu Waterfall-between 1992 and 1995). In addition to these projects, 220 bird species have been identified through other studies conducted at different times and at different places (Table 1).

Table 1: Important bird Species in the ornitho-tourism in Antalya, Turkey

English name	Scientific name	English name	Scientific name
Little Grebe	*Tachybaptus ruficollis*	Calandra Lark	*Melanocorypha calandra*
Great Cormorant	*Phalacrocorax carbo*	Wood Lark	*Lullula arborea*
White Pelican	*Pelecanus onocrotalus*	Horned Lark	*Eremophila alpestris*
Little Bittern	*Ixobrychus minutus*	Eurasian Crag Martin	*Hirundo rupestris*
Grey Heron	*Ardea cinerea*	Tawny Pipit	*Anthus campestris*
Black Stork	*Ciconia nigra*	White/Pied Wagtail	*Motacilla alba*
Eurasian Spoonbill	*Platalea leucorodia*	Wren	*Troglodytes troglodytes*
Greater Flamingo	*Phoenicopterus roseus*	White-spectacled bulbul	*Pycnonotus xanthopygos*
Ruddy Shelduck	*Tadorna ferruginea*	Hedge Accentor	*Prunella modularis*
Northern Pintail	*Anas acuta*	Rufous-tail Scrubrobin	*Erythropygia galactotes*
Red-crested Pochard	*Netta rufina*	European Rubin	*Erithacus rubecula*
Griffon Vulture	*Gyps fulvus*	Common Nightingale	*Luscinia megarhynchos*
Short-toed Snake eagle	*Circaetus gallicus*	Black Redstart	*Phoenicurus ochruros*
Eurasian Sparrow hawk	*Accipiter nisus*	Whinchat	*Saxicola rubetra*
Common Buzzard	*Buteo buteo*	Isabelline Wheatear	*Oenanthe isabellina*
Booted Eagle	*Hieraaetus pennatus*	Finch's Wheatear	*Oenanthe finchii*
Peregrine Falcon	*Falco peregrinus*	Blue Rock-thrush	*Monticola solitarius*
Chukar	*Alectoris chukar*	Redwing	*Turdus iliacus*
Corncrake	*Crex crex*	Cett's Warbler	*Cettia cetti*
Crane	*Grus grus*	Zitting Cisticola	*Cisticola juncidis*
Black-winged Stilt	*Himantopus himantopus·*	Savi's Warbler	*Locustella lusciniodies*
Eurasian Thick-knee	*Burhinus oedicnemus*	Sedge Warbler	*Acrocephalus schoenobaenus*
Eurasian Golden Plover	*Pluvialis apricaria*	Olivaceous Warbler	*Hippolais pallida*
Spur-winged Lapwing	*Vanellus spinosus*	Sardinian Warbler	*Sylvia melanocephala*
Ruff	*Philomachus pugnax*	Spotted Flycatcher	*Muscicapa striata*
Common Snipe	*Gallinago gallinago*	Bearded Reedling	*Panurus biarmicus*
Black-tailed Godwit	*Limosa limosa*	Long-tailed Tit	*Aegithalos caudatos*
Spotted Redshank	*Tringa erythropus*	Blue Tit	*Parus caeruleus*
Terek Sandpiper	*Xenus cinereus*	Krueper's Nuthatch	*Sitta krueperi*
Mediterranean Gull	*Larus melanocephalus*	Short-toed Treecreeper	*Certhia brachydactyla*
Common Tern	*Sterna hirundo*	Eurasian Penduline Tit	*Remiz pendulinus*
Common Wood-pigeon	*Columba palumbus*	Eurasian Golden Oriole	*Oriolus oriolus*
European Turtle-dove	*Streptopelia turtur*	Woodchat Shrike	*Lanius senator*
Barn Owl	*Tyto alba*	Great Grey Shrike	*Lanius excubitor*
Long-eared Owl	*Asio otus*	Eurasian Jay	*Garrulus glandarius*
Eurasian Nightjar	*Caprimulgus europaeus*	Common Magpie	*Pica pica*
Alpine Swift	*Tachymarptis melba*	Common Raven	*Corvus corax*
Common Kingfisher	*Alcedo atthis*	Spanish Sparrow	*Passer hispaniolensis*
European Bee-eater	*Merops apiaster*	Rock Sparrow	*Petronia petronia*
European Roller	*Coracias garrulus*	European Serin	*Serinus serinus*
Eurasian Hoopoe	*Upupo epops*	European Greenfinch	*Carduelis chloris*
Eurasian Wryneck	*Jynx torquilla*	Hawfinch	*Coccothraustes coccothraustes*
Great Spotted Woodpecker	*Dendrocopus major*	Cretzschmar's Bunting	*Emberiza caesia*

Source: Aslan, A. Et al. 2004:42

4.1.1. Gulluk Mountain National Park

113 bird species belonging to 32 families were observed in the National Park [20] .Out of these species, 51, 40, 14 and 8 species are resident, summer visitors, winter visitors and passage migrants respectively. This area is important for observing wintering, nesting, and feeding species and also migrants using it as a stopover point. In view of this, the Park is an extremely suitable site for bird watching, especially for forest and mountain birds. Actually the rich list of bird species of this Park gives year round opportunity to visitors to watch non-passerine (Snake eagle *Circaetus gallicus*, Sparrowhawk *Accipiter nisus*, Long-legged buzzard *Buteo rufinus*, Common buzzard *B. buteo*, Elenora's falcon *Falco Eleonora*, Lesser kestrel *F. naumanni,* Cuckoo *Cuculus canorus*, Little owl *Athena noctua*, Eared owl *Asio otus*, Wryneck *Jynx torrquilla*, and Gren woodpecker *Picus viridis*) as well as passerine species (House sparrow *Passer domesticus*, Crested lark *Galerida cristata*, forest lark *Lulula arborea*, Quail *Cotunix coturnix*, Nightjar *Caprimulgus europeus*, Hoopoe *Upopa epops*, Redstart *Phoenicurus ochruros*, Pied wheatear *Oenanthe pleschenka*, Serin *Serinus serinus*, Great tit *Parus major*, Greenfinch *Cardnelis chloris*, Goldfinch *C. carduelis*, Yellow hammer *Emberiza citrinella*) [20].



Fig. 1. Great tit *Parus major* from Güllük Mountain (Erdogan's archives, 2010).

Many of the observed birds in the Park were detected in April, which is the time of migration, and dependent on providing short-term nutrition, recreation, and accommodation to many bird species. Consequently, the majority of the species were observed during the spring migration months (April, May and June). In this context, most of the bird species (86) were observed in April. Many summer visitors were also observed as nesting in the park [20].

4.1.2. Kursunlu Waterfall Nature Park

Kursunlu Waterfall Nature Park is located in the east periphery of the city and is about 40 km far from Gulluk Mountain National Park. A total of 152 bird species were observed from the area during 1992-1995 by Turan and Erdogan [23], and 85 were nesting in the region. The area is an important waterfall for tourists and can also serve as a bird watching area due to the rich nesting and total number of bird species.

4.1.3. Yamansaz Lake

This very shallow freshwater wetland area is located on the east of Antalya, 14 km away from the city center and 2 km from the sea. It has partly the character of lakes and marshes, with a size of about 15 km^2. The area is covered with vegetation above water during spring and summer, whereas north and south parts are used for agricultural activities and a part is industrialized. The lake and its environs is a candidate to become an important bird observation station. In all 161 bird species belonging to 51 families were identified in this area [2], 54 being residents, 52 summer visitors, 40 winter visitors and 13 are passage migrants. The remaining 2 species could not determined as these were observed 1 or 2 times during the study [4]. The presence of rich bird species in the area and it's environs is due to variety of habitats such as scrub, cliffs, farmland, wetlands, and reeds. Especially, the presence of the kingfisher *Alcedo atthis*, Purple heron *Ardea purpurea*, Cattle egret *Bubulcus ibis*, Night heron *Nycticorax nycticorax*, Little bittern *Ixobrychus minitus* and Little grebe *Podiceps ruficollis* were nesting in the field, which depicts the region's clean wetland ecosystem. Bird-watching stations are established in the cliffs in and around the Yamansaz wetland which constitutes natural museum or laboratory in terms of the natural vegetation and wild fauna. It can contribute to the environmental education as well. It can serve as an open school for people to recognize, love and protect the nature and increase their awareness.

4.1.4. Belek Specially Protected Area

Bogazkent/Kocagöl and its vicinity host 214 bird species, 30 being summer visitors, 56 winter visitors, 60 passage migrants, 3 summer visitors and transit migrants, 2 found as summer and winter visitors, 7 as winter visitors and residents, 1 as passage migrant and resident, 5 passage migrants and summer visitors in transit, 3 as passage migrants and winter visitors, 1 as passage migrant and summer visitor. The remaining 11 species are known to be local and could not be adequately observed and therefore status could not be determined [5]. This area is the stopover point

during both spring and autumn migration to many bird species in particular long distance migrants. White stork *Ciconia ciconia*, Glossy ibis *Plagadis falcinellus*, Gadwall *Anas strepera*, Murbled duck *Marmoronetta angustrirostris*, Crane *Grus grus*, Collared pratincole *Glareola pratincola*, Spur-winged lapwing *Vanellus spinosus*, Little grebe *Tachybaptus ruficollis*, Cormorant *Phalacrocorax carbo*, Little egret *Egretta garzetta*, Great egret *E. alba*, Grey heron *Ardea cinerea*, White-fronted goose *Anser albifrons*, Shelduck *Todarna ferruginea*, Teal *Anas crecca*, Marsh harrier *Circus aeruginosus*, Kestrel *Falco tinunculus*, Merlin *F. columbarius*, Redshank *Tringa ochropus*, Little tern *Sterna albifrons*, Kingfisher *Alcedo atthis*, Robin *Erithacus rubecula*, Reed warbler *Cettia cetti* and Long-tailed tit *Aegitalos caudatus* are the species observed in the area [5]. A protection of the biodiversity of this area is important in view of the hotel activities of Belek, best known touristic center of Antalya. There is need to protect this special area both for birds as well as nesting sea turtles on the coast while extending the tourism activities. In addition, there is a newly built bird ringing station at Bogazkent and it is closer to Belek. The tourists can join and use the area in an additional way during their holiday.



Fig. 2. Tourists visiting the area from different countries (Bird ringing station at Bogazkent)(Erdogan's archives, 2002).



Fig. 3. Pied Wagtail *Motacilla Alba* from Sorgun (Erdogan's archives, 2009).

4.1.5. Manavgat Region

Manavgat region is another important area for bird watching activities which can be added to its tourism industry. According to Erdogan and Tunc [3], together with our observations to date, 188 bird species have been recorded from the area and majority of these are waterfowl species. Out of these 41 species are definitely nesting and 79 probably nesting in the area [20].

In all 22 tourist facilities are located in Sorgun/Manavgat with a total number of beds around 18 thousand and visitors staying here number around 300-400 thousand. Peak seasons are summer and autumn. The profile of the visitor is young in summer, but middle aged population in autumn and winter seasons. Summer visitors are benefiting from the sea and the beach, autumn and winter visitors are benefiting from the activities in the forest area in Sorgun and its environs wher thet enjoy sports like jogging, hiking, etc. Foreigners living in touristic places within the "Conservation-Development and Verification Project" prepared by the "Titreyengöl-Sorgun Investors Union" are generally using planned tracks, hiking, rod north walking (Nordic Walking), Direction Finding (Orienteering), brisk walking (jogging) and bicycle riding activities on the routes marked [10]. This planning must be expanded to include bird-watching as well.

4.1.6. Titreyengöl

Titreyengöl has a surface area of 2 acres and is 8.7 hectares wide together with its environs. It is located on the west of Manavgat River,78 km in the southeast of Antalya, within the borders of Manavgat district nearly 2.5 km to the south of county centre. The River replaces the bed of a small wetland area formed by the lake, which was previously connected with the sea but later on the connection disappeared. The area hosts 175 bird species in the used areas of residents, summer and winter visitor and passage migrants comng to feed, nest and rest [11]. Birds commonly observed in the area are; Little grebe *Tachybaptus ruficollis*, Crested grebe *Podiceps cristatus*, Great egret *Ardea alba*, Purple heron *Ardea purpurea*, Collared pratincole *Glareola pratincola*, European roller *Coracias garrulous*, Hoopoe

Upupa epops, Eurasian Wryneck *Jynx torquilla*, Syrian woodpecker *Dendrocopus syriacus*, Short-toed lark *Calandrella brachydactyla*, Crested lark *Galerida cristata*, Barn swallow *Hirundo rustica*, Tawny pipit *Anthus campestris*, Tree pipit *A.trivialis*, Meadow pipit *A. pratensis*, Yellow wagtail *Motacilla flava*, Grey wagtail *M. cinerea*, Pied wagtail *M. alba*, White-spectacled bulbul *Pycnonotus xanthopygos*, Greceful prinia *Prinia gracilis*, Dunnock *Prunella modularis* and Blyth's Reed Warbler *Acrocephalus dumetorum*. There is a bird ringing station at Titreyengöl and studies were undertaken there by the Akdeniz University during 2002-2007. A total of 55 411 individuals from 121 species were banded. The study was collaborated by foreign birdwatchers and many volunteers from different countries. A total of 36 individuals ringed in Titreyengöl were captured in 18 different countries and 71 individuals ringed in foreign countries were observed in Titreyengöl [11].



Fig. 4. Collared pratincole *Glareola pratincola* from Titreyengöl (Erdogan's archives, 2007).



Fig. 5. The study by bird watchers and volunteers from Titreyengöl (Erdogan's archives, 2010).

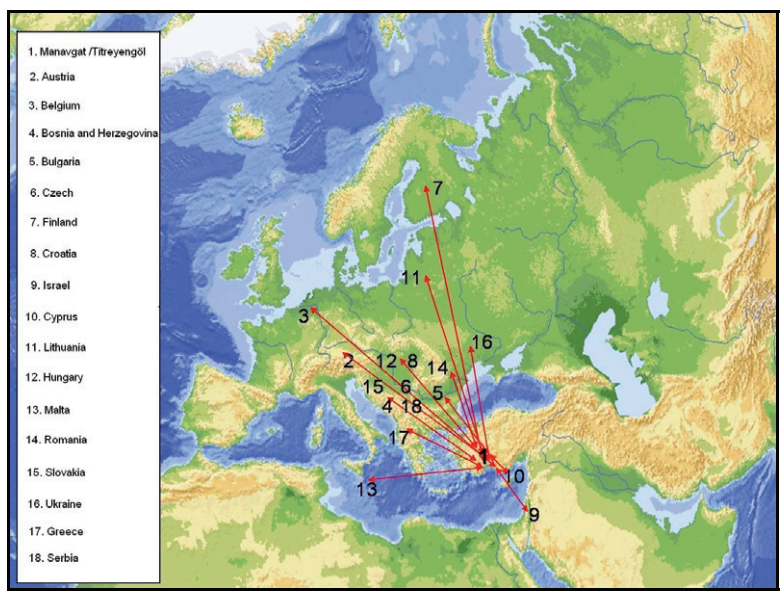


Fig. 6. The route of the ringed species in Titreyengöl and feedback from the European countries during the study period.

4.1.7. Demre St. Nicholas Bird Paradise

Demre is located on the west coast, 140 km far from Antalya. Cayagzı is the west point of the area and the wetland of Demre is approximately 100 hectares, with sulfur-based mineral property. Some aquatic plants such as sedges (*Juncus* spp.), spear (*Arundo donax*), bulrush (*Typha* spp.) and Common daisy (*Bellis perennis*) are widely distributed. These areas provide the feeding, recreation, protection and nesting opportunity to the water birds. In particular, scrub

vegetation, which is common in the north and south of this area forms suitable habitats for passerine birds. Demre St. Nicholas Bird Paradise shows different types of ecosystems, habitats and species. Erdogan et al. (2004) determined 168 bird species belonging to 46 families, in the area. Out of these 88 are non-passers and the remaining 80 are from passers group [11]. Fourty-one bird species live in the region as residents, 39 are summer visitors, 35 winter visitors, 40 passage migrants, and the rest (13 species) are summer visitors and passage migrants. In addition to the above areas the forest areas of Akseki and its vicinity, Cıglıkara Natural Forests, Avlan Lake, Bey Mountains and Antalya Plain are other areas to be considered for bird-watching tourism.



Fig. 7. White-spectacled bulbul *Pycnonotus xanthopygos* from Demre (Erdogan's archives, 2010). (left)

5. Conclusion and Suggestions

Bird-watching is increasing its important part played in the tourism activities in recent years, which is compatible with nature. Antalya and its surroundings are extremely important habitats for birds and more than half of Turkish bird species are present here. Gulluk Mountain National Park is rich in bird life. Kursunlu Waterfall Natural Park is one of the important places where bird-watching tourism can be followed. Belek Special Protection Area is on the road and one of the important wintering bird centers. Titreyengöl and its surroundings are an important area for the birds for sheltering, and nesting before and after the migration. On the other hand, Sorgun Forest, Titreyengöl and Boğaz (Straits) Forest and Manavgat River represent an ecological integrity. Demre St. Nicholas Bird Paradise is rich in ecosystem and species diversity.

In addition to these areas bird watching tourism can be done around Cıglıkara Nature Protected Area, in Avlan Lake, in Bey Mountains, in Tahtalı Mountains and around Antalya Plain. There is an immediate need for the preparation of a guidance manual and record with coloured plates dealing with the inventory of birds from Antalya.This can be used in the development of bird-watching tourism and its future planning. Bird-watching parks can be created in this region. These parks hand in hand with Yamansaz Lake, Akseki Forests, Dalyan (Demre) and the areas under various conservation statuses can be considered for parks and other locations can be added to these. In the parks bird observation towers, bird watching stations, museums, souvenir shops, seminar rooms and walking trails can be created. Bird observations in the field are currently being carried out by various civil society organizations. However, when considering the rich potential of the area, the expansion of the circle of participation seems inevitable. The activity on the whole can serve as an alternative tourism activity. The accommodation facilities should be created for the participants and planning done for its use as a tourism input. The areas should be used within a plan, protection measures should be clearly developed in order to avoid the destruction of nature areas and chalk out programme for sustainable development. The areas can also be used for promoting environmental educational at home and abroad. A large participation of national and international festivals, bird watching programmes can be arranged. The area must be opened to tourism after determining the absolute capacity of visitors in each area and local people should be encouraged to help in the ornitho tourism. The building of bird-watching platforms and avoiding road constructions in the middle of Bird Paradises (as done in Demre) will limit the threats to the the habitats of species. Brochures of the area showing the characteristics of bird species should be prepared and should be given to the trained tourist guides and tourists. These areas can be included in 'the tourism region'. In allcases it is necessary to cooperate with the local population, maximum support and service should be obtained from them.

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