Barometr Regionalny
Tom 12 nr 4

Birdwatching as a Potential Factor in the Development of Tourism and Recreation in the Region

Magdalena Szczepańska
Adam Mickiewicz University, Poland

Michał Krzyżaniak, Dariusz Świerk, Miłosz Walerzak, Piotr Urbański
Poznań University of Life Sciences, Poland

Abstract

Ornithological tourism, also known as birdwatching, is a form of cognitive tourism. Poland has enormous natural potential and ornithological tourism is developing more and more dynamically, so it is important to understand and organise it well. The aim of this study is to review information about ornithological tourism as one of the branches of tourism. It is also to prove that birdwatching may be the basis for tourism and economic development both in its local and regional aspects. The article also attempts to indicate the needs of tourist infrastructure for the development of ornithological tourism on the basis of a survey of 356 respondents, including 87 women. Most of the respondents were young people, aged under 35 (66,4%). 78% of them were urban inhabitants. Most had higher (64,4%) or secondary education (27,8%). The respondents indicated Biebrza National Park (18,3%), Warta River Mouth National Park (16,5%), the Gulf of Gdańsk (8,7%), Milicz Ponds (7,2%), Lake Jeziorsko (7,1%) as the most popular places of ornithological tourism. 34% of the respondents were of the opinion that birdwatching sites in Poland were poorly prepared for the activity.

Keywords: ornithological tourism, birdwatching, regional development, questionnaire surveys

Introduction

After the industrial revolution the governments of many countries began to promote the idea of sustainable development, creating a wide range of new forms of wildlife conservation. The interest in the natural values of protected areas enforced actions to organise tourist traffic and to provide appropriate infrastructure. The contemporary forms of nature tourism, which is oriented to wildlife exploration, include ornithological tourism, also known as birdwatching. The most dynamic development of this form of tourism can be observed in the United States and in Western Europe. There are more than one million members of the Royal Society for the Protection of Birds in the UK and there are more than two million birdwatchers in Holland. The number of birdwatching enthusiasts is growing in Poland, at present there are about 7–10 thousand of them. The appropriate birdwatcher-oriented organisation of tourist infrastructure may generate considerable profit. Phillip Island Nature Park in Australia is famous for its spectacular penguin parade. Every year the place is visited by about half a million tourists, who leave more than USD 60 million in the park. Birdwatching is also very popular in the US. It generates the profit of more than USD 5 billion and provides employment for about 200 thousand people. The international Bird Life Federation reports that the people who travel abroad to watch birds spend more than USD 70 billion in the countries they visit (Gawlik 2006). Poland has a significant natural potential and the significance of ornithological tourism is growing. Therefore, it is very important to understand and develop it well. Nature tourism should be organised so that its development will cause minimal consequences

to the natural environment and thus, it should contribute to the maintenance of natural diversity in the areas where it is being developed (Kurek 2007). As a form of nature tourism, birdwatching enables the tourist to observe birds in their habitat and simultaneously, it is a minimal threat to the natural environment and scenic values. However, it is necessary to set the guidelines for the criteria of demarcation of the areas to be used for ornithological tourism and to make the rules concerning their development. As far as ornithological tourism is concerned, these are all types of birdwatching facilities, educational paths and routes. However, the tourist's love of nature and specialist knowledge are the most important. Ornithological tourism, which has great economic and social potential, is beginning to develop. Therefore, it is so important to understand and organise it well from the beginning. It is recommended that birdwatchers' needs should be analysed.

The aim of this study is to review information about ornithological tourism. The aim of this article is also to prove that birdwatching may be the basis for tourism and economic development both in its local and regional aspects. The article also attempts to indicate the needs of tourist infrastructure for the development of ornithological tourism on the basis of a survey.

1 History and Forms of Birdwatching

1901 is considered to be the beginning of birdwatching. It was then that Edmund Selous, a well-known ornithologist, used this term in the title of his book. He propagated non-invasive methods of bird observation and exploration. At the time it was a new approach, as opposed to the commonness of collection of specimens of birds and their eggs. The United Kingdom is the home of birdwatching as a form of tourism and recreation. The British Isles are the place where the largest group of bird lovers can be found. At the turn of the 19th century the world's two greatest societies for bird conservation were established — i.e., the Royal Society for the Protection of Birds in the UK (more than one million members now) and the National Audubon Society in the United States. Birdwatching has become fashionable in a large part of Western Europe. The leading birdwatching countries are: the UK (more than 4 million people admit that they watch birds), Holland (2 million birdwatchers), Denmark, Germany and Finland, where the number of amateur ornithologists is still growing. On a global scale the leading birdwatching countries are the United States and Canada (Janeczko and Anderwald 2011). The birdwatching movement began to develop in Poland in the 1970s and 1980s, when several ornithological organisations were established and they started explorations in Poland. At present there is a large number of active Internet forums and societies, which organise different ornithological events (e.g., the Polish Society for the Protection of Birds). The calendar of events includes: Winter Bird Count, European Bird Days, World Wetlands Day. Today the aim of such societies is to promote birdwatching and to encourage people to watch birds as a form of recreation. In Poland ornithological tourism is developing more and more dynamically, bringing economic benefits to the organisers of birdwatching events, the inhabitants of areas visited by birdwatchers and to the manufacturers of birdwatching equipment. There is a great number of travel agencies (e.g., Bird Service) and individual guides, who specialise in birdwatching expeditions. Books and periodicals about birds are published and CDs with recordings of birds' voices are very popular (Kurek 2007). The fact that this form of tourism can be practised at any age is a significant asset of birdwatching. Above all, birdwatchers are wildlife lovers, who are involved in its protection.

In recent years the development of the forms of tourism oriented to wildlife exploration has been noticeable. According to Kurek (2007), trips to observe animals in their natural habitat are a particular form of nature tourism. Ornithological tourism, also known as birdwatching, is a popular example of nature tourism. It consists in the observation of birds in their natural habitat with the naked eye or optical devices. The word "birdwatching" derives from English and combines two words: "bird" and "watch." Unfortunately, there is no Polish equivalent for the word "birdwatcher." The main difference between the birdwatcher and ornithologist is that the latter is a professional and scientific birdwatcher (Graszka-Petrykowski 2005). Apart from the term "birdwatching" there are two other words related with the observation of birds. "Birding" is a broader term than "birdwatching." It refers to the involvement of other senses (e.g., hearing, in bird observation).

"Twitching" is a specific form of birdwatching. The twitchers' chief pursuit is to identify and photograph as many different species of birds as possible. They take part in "Bird Race" competitions, where teams of a few competitors have the task of observing and noting as many species of birds as possible in one day.

1.1 Bird sanctuaries of international importance (IBA) as birdwatching sites in Poland

As a country with a highly diversified environment, Poland has a large number of ornithologically valuable places not only on a national but also the European scale. These areas are diversified in terms of the habitat type (its area and geographical position) and the protection regime. 174 bird sanctuaries have been identified and inventoried in Poland, including 4 sanctuaries in Polish territorial waters, occupying the total area of 6 418 171 ha (Wilk et al. 2010)—i.e., 18,6% of the total land area of Poland and 69,7% of Polishterritorial waters (tab. 1).[1] The largest number of sanctuaries can be found in Lubelskie Voivodship (25), whereas the smallest number is in Łódzkie Voivodship (3). The highest percentage (more than 30%) of the bird sanctuary area in the total voivodship area is in Podkarpackie, Podlaskie and Lubuskie voivodships, whereas the highest percentage of bird sanctuaries (14,4%) can be found in Lubelskie Voivodship. As far as the spatial aspect is concerned, the areas of eastern, western and northern Poland can be regarded as the most attractive birdwatching regions, where this activity can develop best (fig. 1 and 2).

Tab. 1. Polish bird sanctuaries of international importance by voivodship in 2010

Voivodship	*n*	% of *N*[a]	Area (ha)	% of voiv.[b]	% of coun./terw.[c]
Dolnośląskie	13	7,47	392 205	19,66	1,25
Kujawsko-Pomorskie	7	4,02	463 838	25,81	1,48
Lubelskie	25	14,37	577 291	22,98	1,85
Lubuskie	6	3,45	475 414	33,99	1,52
Łódzkie	3	1,72	33 341	1,83	0,11
Małopolskie	12	6,90	134 413	8,85	0,43
Mazowieckie	16	9,20	599 877	16,87	1,92
Opolskie	3	1,72	39 773	4,23	0,13
Podkarpackie	7	4,02	646 763	36,24	2,07
Podlaskie	12	6,90	623 066	30,86	1,99
Pomeranian	12	6,90	243 065	13,27	0,78
Śląskie	6	3,45	117 162	9,50	0,37
Świętokrzyskie	4	2,30	175 166	14,96	0,56
Warmińsko-Mazurskie	15	8,62	390 715	16,16	1,25
Wielkopolskie	13	7,47	282 278	9,46	0,90
Zachodniopomorskie	16	9,20	618 468	27,02	1,98
Subtotal	170		5 812 835		18,59
Polish territorial waters	4	2,30	605 336		69,72
Total	174		6 418 171		

Source: Authors' compilation based on Wilk, Jujka, Krogulec, and Chylarecki (2010)

[a] Percentage in total number of bird sanctuaries

[b] Percentage of voivodship area

[c] Percentage of country's area / percentage of territorial waters

1. [In the journal (in both Polish and English texts) European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style). Furthermore in the International System of Units (SI units), fixed spaces rather than commas are used to mark off groups of three digits, both to the left and to the right of the decimal point.—Ed.]

Fig. 1. The percentage of bird sanctuary areas of international importance (IBA) in the voivodships in 2010

Source: Authors' compilation based on Wilk, Jujka, Krogulec, and Chylarecki (2010)

Fig. 2. The percentage of the number of bird sanctuaries of international importance (IBA) in the total number of sanctuaries by voivodship in 2010

Source: Authors' compilation based on Wilk, Jujka, Krogulec, and Chylarecki (2010)

1.2 The legal basis for bird conservation in Poland

Conservation of nature in Poland is chiefly based on the Nature Conservation Act of 16 April 2004.[2] In order to protect the diversity of bird species and birds' habitats the Natura 2000 protected areas were established in 2004. It is the latest form of nature conservation in Poland. Protected areas under the Natura 2000 scheme are established in all the member-states of the European Union, making the European Ecological Network of protected areas Natura2000. The programme is based on two EU directives:

- the Birds Directive — specifies the criteria of establishment of sanctuaries for endangered bird species
- the Habitats Directive — sets the rules of conservation of other animal species, plants and natural habitats and the procedures of conservation of the areas which are particularly important to nature

2. See: Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody, DzU z 2004 r. nr 92 poz. 880.

From the ornithological point of view the protection of wetlands is particularly important. For this reason in 1971 the Convention on Wetlands of International Importance was drawn up in Ramsar, Iran. It focused on the waterfowl habitat. To date the Ramsar Convention has been ratified by 163 countries all over the world. Poland accepted it in 1978.

According to the current Regulation of the Minister of the Environment, Polish law provides full protection to all species of birds, except 9 species under partial protection and 13 game species. According to the aforementioned Regulation, the list of partially protected species includes: the grey heron (*Ardea cinerea*), Caspian gull (*Larus cachinnans*), European herring gull (*Larus argentatus*), rook (*Corvus frugilegus*), common raven (*Corvus corax*), Eurasian magpie (*Pica pica*), hooded crow (*Corvus cornix*), great cormorant (*Phalacrocorax carbo*), rock pigeon – urban form (*Columba livia urbana*). The list of game species includes the following: greylag goose (*Anser anser*), bean goose (*Anser fabalis*), greater white-fronted goose (*Anser albifrons*), mallard duck (*Anas platyrhynchos*), Eurasian teal (*Anas crecca*), common pochard (*Aythya ferina*), tufted duck (*Aythya fuligula*), Eurasian coot (*Fulica atra*), Eurasian woodcock (*Scolopax rusticola*),common wood pigeon (*Columba palumbus*), hazel grouse (*Bonasa banasia*), common pheasant (*Phasianus colchicus*), grey partridge (*Perdix perdix*).

When watching wildlife, above all it is necessary to protect it. The benefits for birds and their natural habitat will always take priority over birdwatchers' interests. The American Birding Association has formulated 5 rules for birdwatchers:

- Promote the welfare of birds and their natural environment.
- Respect the law and the rights of others.
- Ensure that feeders, nest structures, and other artificial bird environments are safe.
- Group birding, whether organised or impromptu, requires special care.
- Record and document interesting observations and inform other birdwatchers or appropriate organisations about them, especially if this is important for bird conservation.[3]

1.3 Bird habitats and birdwatching methods in Poland

The Polish landscape includes mountains, sea, meadows and urbanised areas. Birds have adapted to the conditions in those areas, inhabiting the spaces which give them shelter and where they can breed and prey safely. The species composition of avifauna depends not only on the climate of a particular area but also on the type of plants covering that area. Five types and 21 subtypes of habitats are distinguished in Poland — they are listed in table 2.

Land development plays a particularly significant role in birdwatching: nature educational paths and routes with information boards,observation towers, hides, observation platforms and walls (figures 1, 2, and 3).

There are different birdwatching methods. The simplest and most common method is observation by means of binoculars or spyglasses. Birdwatching involves the need to notice and memorise many details. It is also useful to record all interesting events taking place in nature during observations (Graszka-Petrykowski 2005). It is recommended that birdwatchers should be able to recognise species of birds by the eggs they lay or the way they build their nests (Gotzman and Jabłoński 1972). The recognition of birds' voices is helpful but it is a particularly difficult birdwatching method. It is easier to hear than notice some species of birds. Therefore, it is so important to be able to recognise birds by their singing. The clothing used during birdwatching expeditions should have subdued colours and it should match the environment (shades of green and brown). It should be waterproof, warm and noiseless.

It is recommended to choose areas situated at the interface of a few avifauna habitats as observation points (e.g., the edge of a forest and the shore of a lake). Birds are the most active before sunrise. Midday is the worst time for birdwatching, because birds stop singing then. They begin to be active before sunset again. The weather is also important — on rainy, cloudy days much fewer birds can be seen, but when unfavourable weather conditions are over, birds immediately begin

3. See: Kodeks obserwatora ptaków (na podstawie [based on] American Birding Association). Accessed: 2014.12.10, [@:] http://forum.przyroda.org/download.htm?id=42075.

Tab. 1. The types and subtypes of bird habitats in Poland

Type of habitat	Subtype	Examples of bird species
Mountain habitats	rocks and crags	Eurasian eagle-owl (*Bubo bubo*) [puchacz zwyczajny] peregrine falcon (*Falco peregrinus*) [sokół wędrowny] alpine accentor (*Prunella collaris*) [płochacz halny] common swift (*Apus apus*) [jerzyk zwyczajny] golden eagle (*Aquila chrysaetos*) [orzeł przedni]
	mountain pastures	pipit (*Anthus spinoletta*) [siwerniak, świergotek górski] shore lark (*Eremophila alpestris*) [górniczek] common rock thrush (*Monticola saxatilis*) [nagórnik zwyczajny, drozd skalny]
	wooded mountain zones	ring ouzel (*Turdus torquatus*) [drozd obrożny] white-backed woodpecker (*Dendrocopos leucotos*) [dzięcioł białogrzbiety] Western capercaillie (*Tetrao urogallus*) [głuszec zwyczajny] hazel grouse (*Bonasa bonasia*) [jarząbek zwyczajny] willow warbler (*Phylloscopus trochilus*) [piecuszek]
Open space habitats	grassland	black grouse (*Tetrao tetrix*) [cietrzew zwyczajny] northern lapwing (*Vanellus vanellus*) [czajka zwyczajna] hoopoe (*Upupa epops*) [dudek zwyczajny] common quail (*Coturnix coturnix*) [przepiórka zwyczajna] citrine wagtail (*Motacilla citreola*) [pliszka cytrynowa]
	farmland	common pheasant (*Phasianus colchicus*) [bażant zwyczajny] corncrake (*Crex crex*) [derkacz zwyczajny] common cuckoo (*Cuculus canorus*) [kukułka zwyczajna, gżegżółka, zazula] bean goose (*Anser fabalis*) [gęś zbożowa, posiewnica]
	dunes and beaches	common tern (*Sterna hirundo*) [rybitwa zwyczajna] little tern (*Sterna albifrons*) [rybitwa białoczelna] little ringed plover (*Charadrius dubius*) [sieweczka rzeczna] terek sandpiper (*Xenus cinereus*) [terekia]
Forest habitats	coniferous woodland	marsh tit (*Parus palustris*) [sikora uboga, szarytka, błotniczka] crested tit (*Parus cristatus* / *Lophophanes cristatus*) [czubatka] great spotted woodpecker (*Dendrocopos major*) [dzięcioł duży] three-toed woodpecker (*Picoides tridactylus*) [dzięcioł trójpalczasty] boreal owl (*Aegolius funereus*) [włochatka zwyczajna, sowa włochata] great grey owl (*Strix nebulosa*) [puszczyk mszarny, sowa mszarna] short-toed snake eagle (*Circaetus gallicus*) [gadożer zwyczajny, krótkoszpon] European honey buzzard (*Pernis apivorus*) [trzmielojad zwyczajny, pszczołojad]
	broadleaf woodland	middle spotted woodpecker (*Dendrocopos medius*) [dzięcioł średni] white-backed woodpecker (*Dendrocopos leucotos*) [dzięcioł białogrzbiety] long-eared owl (*Asio otus*) [uszatka zwyczajna, sowa uszata] golden oriole (*Oriolus oriolus*) [wilga zwyczajna]
	riparian forests	Eurasian woodcock (*Scolopax rusticola*) [słonka zwyczajna] willow tit (*Poecile montanus*) [czarnogłówka zwyczajna, sikora czarnogłowa] common crane (*Grus grus*) [żuraw zwyczajny] icterine warbler (*Hippolais icterina*) [zaganiacz zwyczajny]
	alder forests	Eurasian siskin (*Carduelis spinus*) [czyż zwyczajny, czyżyk] Eurasian pendulinetit (*Remiz pendulinus*) [remiz zwyczajny] common chiffchaff (*Phylloscopus collybita*) [pierwiosnek]
	tree-covered areas	common pheasant (*Phasianus colchicus*) [bażant zwyczajny] common blackbird (*Turdus merula*) [kos zwyczajny] common wood pigeon (*Columba palumbus*) [grzywacz, gołąb grzywacz] greenfinch (*Carduelis chloris*) [dzwoniec zwyczajny]
Water habitats	lakes	Eurasian teal (*Anas crecca*) [cyraneczka zwyczajna] great egret (*Egretta alba*) [czapla biała] great cormorant (*Phalacrocorax carbo*) [kormoran zwyczajny] common gull (*Larus canus*) [mewa siwa, mewa pospolita]
	breeding ponds	Eurasian bittern (*Botaurus stellaris*) [bąk zwyczajny] spotted redshank (*Tringa erythropus*) [brodziec śniady] grey heron (*Ardea cinerea*) [czapla siwa] greylag goose (*Anser anser*) [gęgawa, gęś gęgawa]

Tab. 1. (*continued*)

Type of habitat	Subtype	Examples of bird species
Water habitats (*continued*)	river banks and islands	whimbrel (*Numenius phaeopus*) [kulik mniejszy] Eurasian stone-curlew (*Burhinus oedicnemus*) [kulon zwyczajny] common kingfisher (*Alcedo atthis*) [zimorodek zwyczajny] mallard duck (*Anas platyrhynchus*) [krzyżówka]
	wetlands andswamps	common crane (*Grus grus*) [żuraw zwyczajny] aquatic warbler (*Acrocephalus paludicola*) [wodniczka] Eurasian coot (*Fulica atra*) [łyska zwyczajna] pintail (*Anas acuta*) [rożeniec zwyczajny]
	oxbows	red-necked grebe (*Podiceps grisegena*) [perkoz rdzawoszyi] moustached warbler (*Acrocephalus melanopogon*) [tamaryszka] black-headed gull (*Larus ridibundus*) [mewa śmieszka]
	marine coastal waters	great cormorant (*Phalacrocorax carbo*) [kormoran zwyczajny] yellow-billed loon (*Gavia adamsii*) [nur białodzioby] great crested grebe (*Podiceps cristatus*) [perkoz dwuczuby] razorbill (*Alca torda*) [alka zwyczajna] velvet scoter (*Melanitta fusca*) [uhla zwyczajna] common murre (*Uria aalge*) [nurzyk zwyczajny]
Urbanised habitats	villages and settlements	white stork (*Ciconia ciconia*) [bocian biały] common blackbird (*Turdus merula*) [kos zwyczajny] house sparrow (*Passer domesticus*) [wróbel zwyczajny, jagodnik] fieldfare (*Turdus pilaris*) [kwiczoł] great tit (*Parus major*) [bogatka zwyczajna, sikora bogatka] serin (*Serinus serinus*) [kulczyk zwyczajny] little owl (*Athene noctua*) [pójdźka zwyczajna]
	built-up areas	common swift (*Apus apus*) [jerzyk zwyczajny] common kestrel (*Falco tinnunculus*) [pustułka zwyczajna, sokół pustułka] peregrine falcon (*Falco peregrinus*) [sokół wędrowny] rock pigeon – urban form (*Columba livia f. urbana*) [gołąb miejski] rook (*Corvus frugilegus*) [gawron, gapa] house sparrow (*Passer domesticus*) [wróbel zwyczajny, jagodnik]
	ruderal areas	black redstart (*Phoenicurus ochruros*) [kopciuszek zwyczajny] common cuckoo (*Cuculus canorus*) [kukułka zwyczajna, gżegżółka, zazula] crested lark (*Galerida cristata*) [dzierlatka zwyczajna, śmieciuszka]
	parks and gardens	western jackdaw (*Coloeus monedula*) [kawka zwyczajna] mute swan (*Cygnus olor*) [łabędź niemy] robin (*Erithacus rubicola*) [rudzik] common chaffinch (*Fringilla coelebs*) [zięba zwyczajna]

Source: Authors' compilation based on Graszka-Petrykowski (2005) and information published at http://ptaki.info/
Note: Polish common names in brackets

Fig. 1. A nature educational path with information boards and an observation tower in Warta River Mouth National Park. Photo by D. Świerk

Fig. 2. A hide and an observation platform in Warta River Mouth National Park, which enables observation during river floods. Photo by A. Przybył

Fig. 3. A nature observation wall in Hoge Veluwe National Park in Holland enables birdwatching from a hide. Photo by M. Szczepańska

to be more active. The season of the year is also important. Spring is the best season to observe many species of birds in one area. Marshes, swamps and breeding ponds are ideal places to observe migratory birds. When the nesting season begins, it is necessary to be even more careful during observation not to disturb the peace near bird nests. Unfortunately, summer is the worst season for birdwatching, because the moulting season begins then. Birds are less mobile and stop singing, because it is not necessary after the end of breeding. Birdwatchers need to wait until birds' autumn migrations to observe their activity again. At the appropriate time birds assemble to fly south. It is possible to observe young birds, which differ in plumage from older generations. At the end of the year, when migratory birds have left Poland, birds from northern regions arrive to spend winter here (Graszka-Petrykowski 2005; Hudec 1993).

2 Material and methods

Surveys were conducted in Łódzkie, Wielkopolskie, and Lubuskie voivodships, with particular focus on wetlands, which are attractive to tourists and ornithologists (Warta River Mouth National Park, Sieraków Scenic Park, Lake Jeziorsko). In order to find out what birdwatchers need, they were surveyed on 26 questions. These were related to general ornithological problems and to the areas inhabited by avifauna. The survey was conducted on Internet ornithological forums and there were also direct interviews with tourists in those areas. It was partly based on a questionnaire related to ornithological tourism in Lublin Voivodship.

3 Research results

356 respondents took part in the survey, including 87 women. Most often the respondents were young people, aged under 35 (66,4%). 78% of them were urban inhabitants. Most of the respondents had higher (64,4%) or secondary education (27,8%). 39,4% had been interested in birds for more than 10 years. 34,6% declared that they had started their birdwatching experience at least 6 years before. The others responded that they had been interested in ornithological tourism for less than 5 years. This means that birdwatching is not a new phenomenon in Poland.

The respondents had the choice of more than one answer to the question: "What made you start ornithological tourism?" The vast majority of the respondents answered that they were interested in birdwatching because of their general interest in nature (83%). The following factors were also important: the Internet (29%), friends who have been involved in this form of tourism for some time (24,3%) and the activity of ornithological associations (21%) (fig. 4).

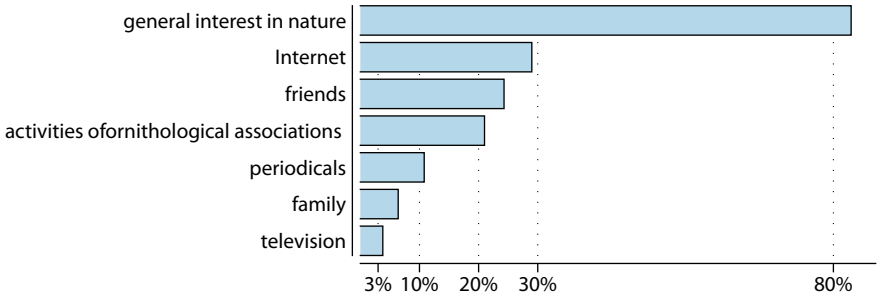

Fig. 4. The reasons for interest in birdwatching (the respondents had the choice of more than one answer)

As results from the respondents' answers to the question: "Which aids do you use in birdwatching?", during their observations they always aid themselves with atlases of birds (98,3%), binoculars (95,6%) and cameras (94,7%). Internet cameras, CDs with birds' voices and spyglasses were also indicated (fig. 5).

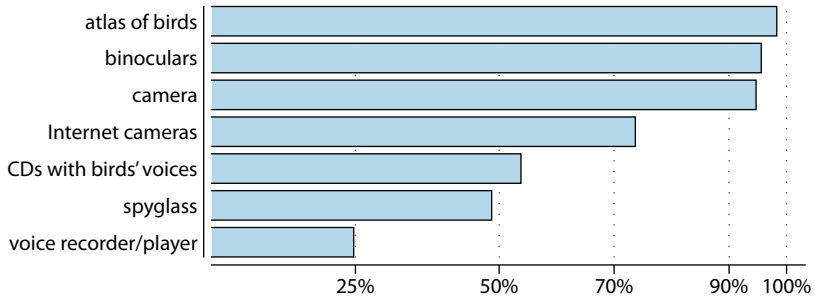

Fig. 5. Useful equipment in ornithological tourism (the respondents had a multiple choice)

More than a half of the respondents plan two- or three-day trips, whereas 34% make one-day trips. Only 4% of the respondents answered that they had taken part in expeditions which had lasted longer than 7 days.

As far as the questions related to the choice of the birdwatching season are concerned, the respondents almost unanimously answered that they were guided by the birds' life cycle. The respondents had the possibility to give more than one answer in the questions about their choice of the cycle period and season of the year. 71% ofthe respondents found the time of arrivals to be the best period of observation in the life cycle. The breeding season was found to be the least suitable (24%). The most popular seasons of the year for birdwatching were: spring (86%) and autumn (64%), whereas summer (14%) and winter (12%) were the least popular.

The respondents had the choice of more than one answer to the question: "How did you learn about birdwatching sites?" More than 90% of the respondents learnt from the Internet about the

places where they could observe avifauna. 32,5% learnt about them from friends interested in ornithology, whereas about 25% indicated television as the source of information about birdwatching places (fig. 6).

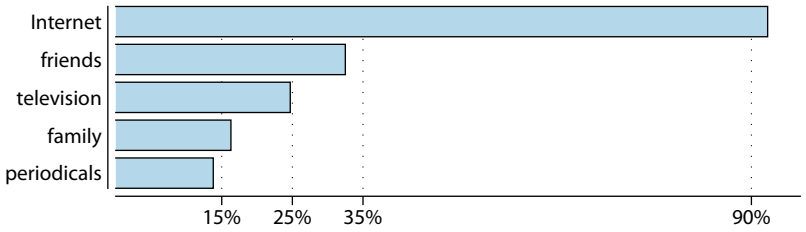

Fig. 6. The sources of information about birdwatching sites (the respondents had a multiple choice)

The respondents had the choice of a few answers to the question:"Which elements of infrastructure are necessary for birdwatching?" As results from the survey, equipment rentals and public spyglasses are the most useful for ornithological tourism. Ornithological paths and hides are also important. In their answers the respondents also pointed to the demand for smartphone applications which facilitate the location and recognition of birds. This information may be useful to the companies making programs for smartphones, phablets and tablets (fig. 7).

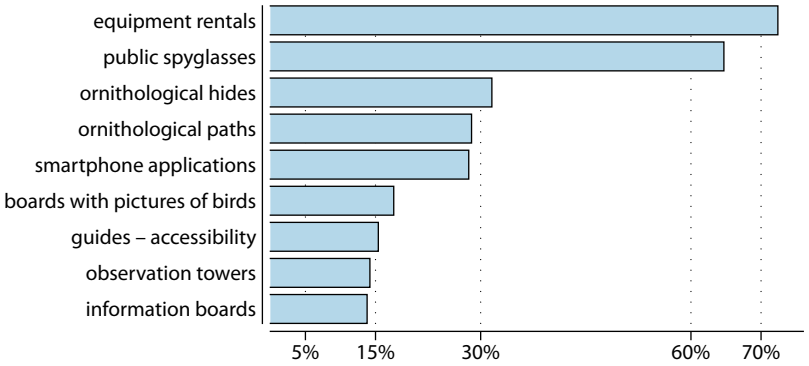

Fig. 7. The ranking of the demand for elements of birdwatching infrastructure

As results from the respondents' answers to the question: "Which actions do you think should be taken to promote birdwatching places as an area of ornithological tourism?", the Internet (75,7%) may be the best medium of promotion. 59,5% of the respondents indicated publishing activity (e.g., albums, guidebooks) as a significant element. To a lesser extent the respondents pointed to two equivalent forms of promotion: school education and radio and press promotion. Less than 3% of the respondents thought that no promotional actions should be taken. We can expect that this answer was given by the respondents who were aware of the need to protect the areas of natural value from tourist pressure (fig. 8).

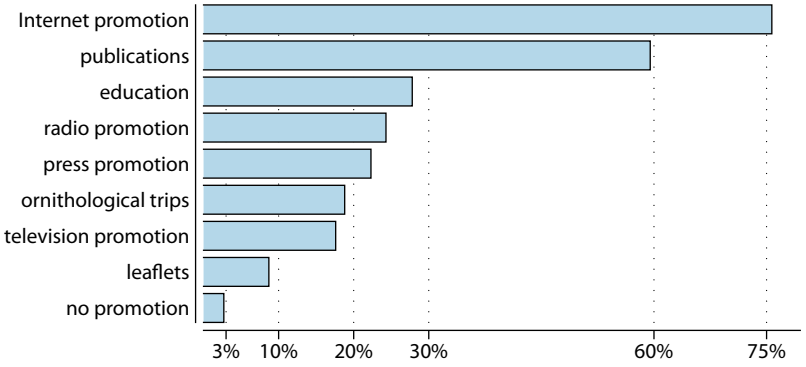

Fig. 8. The forms of promotion of birdwatching places (the respondents had a multiple choice)

In the question: "Which birdwatching places have you visited before?"the respondents indicated a total of 69 places, which they found attractive for ornithological tourism. Most often they listed: Biebrza National Park (18,3%), Warta River Mouth National Park (16,5%), the Gulf of Gdańsk (8,7%), Milicz Ponds (7,2%), Lake Jeziorsko (7,1%). Most of the birdwatching locations (41,1%) that were indicated had a local character (fig. 9).

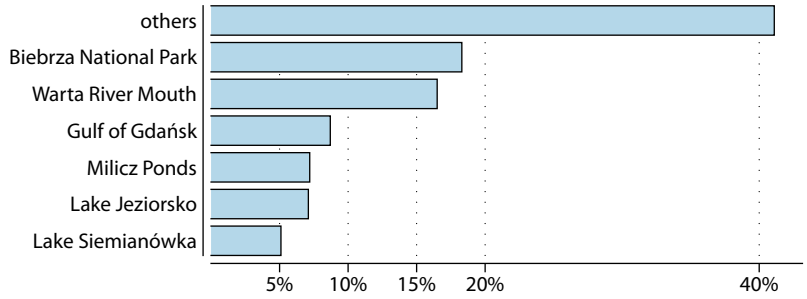

Fig. 9. The popularity of birdwatching places (the respondents could not show more than 5 locations)

34% of the respondents were of the opinion that birdwatching places in Poland were poorly prepared for the activity. Most of therespondents (48%) could not express their opinion about the infrastructure of those places – this may have been caused by the fact that they were more concerned with natural values and the biodiversity of the avifauna they observed. On the other hand, 18% of the respondents thought that birdwatching places in Poland were well prepared for this type of tourism, but the infrastructure of those areas needed modernisation.

Summary

Ornithological tourism forces birdwatchers to be involved in active protection of the environment — they must put the needs of the natural environment before their own needs. As a form of nature tourism, it may also contribute to the propagation of knowledge about the natural environment. There is a great number of places with significant natural potential in Poland. Most of them are frequently visited by tourists. The map of attractive places for ornithological tourism is very much the same as the map of places of high natural value. Ornithological tourism perfectly meets the assumptions of sustainable tourism; it enables people to admire the beauty of nature without causing danger to it. However, it is necessary to set the guidelines for the criteria of demarcation of the areas with the potential for ornithological tourism and to make the rules concerning their development. It is also recommended that birdwatchers' needs should be taken into consideration. In Poland ornithological tourism is developing more and more dynamically, so it is important to organise it well. It is important that birdwatchers should have some ornithological knowledge and they should be prepared to exhibit pro-ecological behaviours with full awareness and responsibility. In order to be satisfied with birdwatching the tourist should be able to make the right choice of the place and method of observation. Internet forums for bird enthusiasts, information and educational materials as well as virtual guides at the websites of places oriented to ornithological tourism are very helpful in the achievement of educational goals. Appropriate tourist infrastructure is also helpful in the development of the birdwatcher's awareness, knowledge and behaviours. The use of elements of ornithological infrastructure such as hides, walls and platforms enables hidden observation of birds and it simultaneously reduces the problem of disturbing birds in their natural habitat. However, it is necessary to remember that the infrastructure of spaces of natural value used by tourists must be introduced with due consideration and it should not disturb the landscape harmony. Therefore, it is important to make the right choice about the location of those elements and the material from which they are made. In order to ensure appropriate functioning of protected areas nature paths with accompanying tourist infrastructure should be made so as to organise tourist traffic well. As far as protected areas are concerned, it is necessary to remember that the implementation of educational goals may weaken protective goals.

References

Gawlik, R. 2006. "Birdwatching – bezkrwawe łowy." *Przegląd Komunalny* (4):175.

Gotzman, J., and B. Jabłoński. 1972. *Gniazda naszych ptaków*. Warszawa: Państwowy Zakład Wydawnictw Szkolnych.

Graszka-Petrykowski, D. 2005. *Ptaki. Profesjonalny przewodnik dla początkujących obserwatorów*. Warszawa: Bauer-Weltbild Media.

Hudec, K. 1993. *Ptaki*. Translated by W. Dudziński, Przewodnik/„Multico". Warszawa: „Multico".

Janeczko, E., and D. Anderwald. 2011. "Birdwatching jako nowa forma turystyki na obszarach zielonych i przyrodniczo cennych w Polsce." *Studia i Materiały Centrum Edukacji Przyrodniczo-Leśnej* no. 13 (2):307–314.

Kruszewicz, A. 2005. *Ptaki Polski. 1, Nury, perkozy, rurkonose, pełnopłetwe, brodzące, blaszkodziobe, szponiaste, grzebiące, żurawiowe, siewkowe, gołębiowe, kukułkowe, sowy, lelkowe, jerzykowe, kraskowe, dzięciołowe*. Warszawa: Oficyna Wydawnicza Multico.

———. 2006. *Ptaki Polski. 2, Wróblowe – ptaki śpiewające*. Warszawa: Oficyna Wydawnicza Multico.

Kurek, W. 2007. *Turystyka*. Warszawa: Wydawnictwo Naukowe PWN.

Wilk, T., M. Jujka, J. Krogulec, and P. Chylarecki. 2010. *Ostoje ptaków o znaczeniu międzynarodowym w Polsce*. Marki: Ogólnopolskie Towarzystwo Ochrony Ptaków.