Wild boar population at the Vistula Spit – management of the species in forested and urban areas

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Abstract

The area of the spit of Vistula river spans 166 km^2 including 49 km^2 of forest. Population numbers of wild boars living in forests (n=290) and in urban areas (n=56-82) were determined. The city wild boars had a higher piglets/female ratio than forest wild boars (4.3 *vs*. 3.8). Among the culled forest wild boars (n=62), 20% of piglets had *corpora lutea* whereas 57.1% of subadult and adult females were pregnant. The size of the daily home range of city wild boars (n=7) was determined by radio-telemetry and found to be 3.5-5.8 ha. A questionnaire-based opinion survey was carried out among local residents and visitors regarding the conflict between city wild boars and humans. The paper also discusses possible solutions to the conflict.

Keywords: city wild boar, home range, human attitudes, population census, radio-telemetry, reproduction, Poland

Introduction

Increased population numbers in wild boars result in invading urban areas. In Western Europe, the best known examples are wild boar populations living in the urban areas of Barcelona and Berlin (Cahill et al., 2003; Kotulski and Konig, 2008). These city wild boars occur also in a number of cities throughout Poland, which is the case particularly in the Tricity of Gdańsk-Gdynia-Sopot (Szramka and Karbownik, 2009), Katowice, and Kraków. On the Baltic coast, wild boars have also colonized summer holiday resorts in forests. One such area is the Vistula Spit. The aim of this study was to present the conflict between the wild boar and man and to suggest solutions.

Methods

The area of the Vistula Spit is 166 km^2 of which 49 km^2 are covered primarily by coniferous and mixed coniferous forests. The local resident population is 14,900 people but in the summer season this number is increased by the 165,000 holiday-makers that visit the region. The estimation of population numbers of forest wild boars was carried out by analysis of collective hunting (Bobek et al., 2005). The population numbers of city wild boars were determined by direct observations. A certain number of culled animals (n=68) was examined, and their sex, age carcass mass, presence of *corpora lutea* and embryos, and the kidney fat index determined. The home ranges of city wild boars (n=7) were determined using the radio-telemetric technique. Questionnaire-based surveys regarding the conflict between city wild boars and humans were conducted among 300 residents and 300 visitors.

Results

The population density of forest wild boars was 76.6 individuals/1,000 hectares, and the calculated population number was 290 individuals. In August, the number of city wild boar was estimated to be 82 individuals while in November the number dropped to 56 animals. Among forest wild boars, the number of piglets per sow was 3.8. In August, among city wild boars there were 5.3 piglets per sow, while in November that number was 4.3. The city wild boars that were captured, were ear tagged with radio-transmitters and taken 30-40 km from their place of capture had returned to their place of capture within 24-48 hours. The average daily home range in these wild boars was 3.6-5.8 ha.

The results of the surveys indicate that all of the permanent residents and 74% of visitors saw city wild boars. Conflict-type encounters (involving ripped clothing, attacking dogs, snatching shopping bags, pestering people on beaches, collisions with vehicles, and destruction of vegetable gardens and lawns) were experienced by 21% of resident respondents and 11% of holiday-makers. Among permanent

residents, 62% respondents would like to see the number of city wild boars reduced, and 55% of holiday-makers had no idea how the conflict could be solved (Table 1).

Tab. 1 Human attitude regarding "urban" wild boar in Vistula Spit

Questions	Answers					
	Residents (n=300)			Visitors (n=300)		
	yes	no	no opinion	yes	no	no opinion
Urban wild boar encounter	300	0	-	222	78	-
Conflict Encounters	63	237	-	33	189	-
Harmful animals	282	12	6	102	51	147
Touristic attraction	141	150	9	135	60	105

Action	Proposed actions	
	Residents (n=300)	Visitors (n=300)
Extermination	39	9
Reduce number of animals	186	18
Increase number of animals	0	15
No change in number	39	93
No opinion	36	165
TOTAL	300	300

Discussion

During the most recent decade, the culling of wild boars in the study areas increased from 89-187 ind./y. This is probably due to the low food availability in forests and high population density in the habitat, from where wild boars to colonize urban areas. City wild boars have access to high-protein food of anthropogenic origin and therefore, the number of piglets per sow is higher than in forest wild boars. The decrease in the number of city wild boars between August and November could be due to emigration, caused by the low availability of food of anthropogenic origin (absence of visitors). It is thus highly probable that the animals migrated to the nearby conurbation of Gdańsk-Gdynia-Sopot, where a large population of city wild boars lives (Szramka and Karbownik, 2009). Illegal culling of these animals by locals might be another reason. The solution to the issue of the city wild boars should consist in reducing the population density of forest wild boars by half, which would probably alleviate the pressure of wild boars on urban areas. Killing captured animals would not be accepted by locals. Therefore, the only reasonable solution would be to erect a fenced enclosure covering a dozen or so ha, to house captured city wild boars in order to create a kind of local tourist attraction. The animals placed in such enclosures should be sterilized (Massei et al., 2008) in order to prevent reproduction.

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