

MAN AND WILD BOAR: A STUDY IN MONTESINHO NATURAL PARK, PORTUGAL

JOÃO PEDRO GALHANO-ALVES

Rua Costa e Almeida, 117, 4200-236 Porto, Portugal. (jgalhano@usa.net)

ABSTRACT

Scientific research on the relationships between humans and wild boar (*Sus scrofa Linnaeus*) are rare. Wild boar is a fundamental species in many ecosystems, but has been exterminated by man in most of the species' range. In the Montesinho Natural Park, Portugal, rural societies still coexist with wild boar, large wild herbivores, and wolves in a high biodiversity ecosystem. The study of their cultural representations of wild boar shows they have little knowledge of its ecology. They represent wild boar in the top of the trophic chains, more powerful than wolf, having not a buffer effect on wolf attacks on domestic herds. Few damages on crops have a strong psychological effect. People do not see any ecological nor social utility to the species, unless as a prey for hunters. Many people suggest that wild boar should be exterminated. Poaching might endanger the stability of the species. Environmental education and individual participation in conservation might bring a better balance to these ecological, cultural, and economical relationships surrounding wild boar.

Key words: Biodiversity conservation, Ethnobiology, Human/Nature relationships, Sustainable development, Wild boar.

INTRODUCTION

Wild boar (*Sus scrofa Linnaeus*) is a fundamental species in many ecosystems because it regulates a large number of plant, animal, and mushroom species, it contributes to vegetation renewal by tilling soil, and it is a key species in trophic chains.

In many cultures, the wild boar is sacred. For example, in Hinduism, the species is one of the incarnations of the supreme God Vishnu. In ancient Rome it was linked with the God Mars, along with the wolf. For Celts, the wild boar symbolised courage and knowledge, and was linked to burial ceremonies. In Christian iconography, particularly in Germany, the species has been a symbol of Jesus Christ.

In northern Portugal and northwestern Spain, the wild boar was sacred to the Veton nation, before the Roman invasion. Two thousand to 2,500 years ago, Vetons erected sacred wild boar statues in the region, which are called "Varrões" or "Varrascos" in Portuguese, and "Verrancos" in Spanish. The large number of these statues reflects the cultural significance of wild boar, which might have been a totemic

animal for this Iron Age culture. Later, Romans used these statues as burial monuments. Presently, several “Varrões” can be seen, for example, in Murça (Portugal), Salamanca, Ávila, and Toledo (Spain).

Until the 17th Century, wild boar existed throughout Europe, Asia, and North Africa. Since that time, the species has been exterminated by man in most of its distribution range, and has suffered because of massive biodiversity destruction. In Europe, Montesinho Natural Park, northeast Portugal, is one of the few regions where wild boar still coexists with man, wolves, and large wild herbivores in a high biodiversity ecosystem. As our anthropological and multidisciplinary field research in the region shows, that coexistence is now in conflict, mostly because of cultural factors, but the situation can be improved (Galhano-Alves 2000, 2002).

MONTESINHO NATURAL PARK: A HIGH BIODIVERSITY, HUMANISED ECOSYSTEM

Created in 1979, Montesinho Natural Park covers an area of 750 km². The climate is Mediterranean, with some influence from the Atlantic Ocean. Native forest cover was oak and chestnut trees. All of the trophic levels are present, and large carnivores and wild and domestic herbivores live in the region. A population of about 30 Iberian wolves (*Canis lupus signatus* Cabrera) lives in the Park and it is linked to a larger population of more than 120 wolves in neighbouring regions in Portugal and Spain. Wild boar, roe deer (*Capreolus capreolus* Linnaeus), deer (*Cervus elaphus* Linnaeus), and domestic herbivores also live in the Park.

Biodiversity is high, but it is not at historical levels because man has destroyed most of the native forests, bear and lynx have been extirpated, and the densities of wild populations are lower than in the past. At the beginning of the 20th Century, deer were exterminated, but by 1989, they came back via populations in Spain.

Presently, after centuries of destruction, wildlife populations are recovering in the region in response to the expansion of scrubs, the lessening of human pressure, better protection laws, the positive action of the Park, and a slow change in the attitude of individuals toward wildlife.

The Montesinho Natural Park has 92 small villages (8,000 people in total). In several respects, traditional family small farming and sheep herding have contributed to the conservation of biodiversity in the region. Traditionally, more than 50% of the territory was communitary, an ancestral Portuguese and European system of land property and management. But, most of that land was privatised or annexed by the State in the 19th and 20th Centuries (Galhano-Alves 2000, 2002).

THE RELATIONSHIP BETWEEN RURAL SOCIETIES AND WILD BOAR

During the 20th Century, wild boar populations decreased in the region because of swine fever, uncontrolled hunting, and habitat destruction. By 1970, wild boar (and other wild species) was almost extinct. Since 1980, the wild boar population has been recovering because swine fever disappeared, hunting is more controlled, and habitats are recovering.

Presently, wolves regulate this population of between 2,000 and 4,000 wild boars. Large carnivores avoid huge fluctuations in wild boar demography, keep their sanitary conditions, and are a vector of positive natural selection.

Biologists have their opinion of wild boar, rural societies have another, one which we might call the «people's wild boar biology». Our research shows that villagers have a poor understanding of the species. When we compare their opinions with the science of the species, we conclude that:

- 53% of their opinions are correct.
- 34% are wrong.
- 8% are incorrect.
- 5% are unknown to science.

For example, the villagers know about the changes in wild boar demography, but ignore their causes. They know the species' diet, reproductive cycle, and timing of activities, but they have incorrect views about its social life and territoriality. They ignore its ecological functions, and a majority of villagers have a wrong interpretation of the wild boar and its relationship with wolves. In fact, only 20% say, correctly, that wolves hunt wild boar and regulate its demography, and 80% say a wolf is unable to kill a wild boar, or only kills piglets. Thirty percent even say that wild boars hunt wolf cubs and eat dead wolves.

These views might have ancestral underpinnings. As we indicated, above, 2,000 years ago, Vetons erected sacred wild boar statues in neighbouring regions, and these ancestral cultural representations may have influenced current views. Also, rumours to the contrary, wolves have never attacked people in the region. One myth says that a hunter was attacked by a hounded wild boar in 1930. Those beliefs might also be influenced by the villagers' comparative empirical evaluation of the impact of wolves and wild boar on agriculture. In fact, wolf attacks on herds are very rare, and they only take 0.1% of sheep per year because sheep herds are well protected by men and dogs. Additionally, as wildlife populations have recovered, wolf trophic behaviour have shifted toward wild prey. By comparison, crop damage by wild boar, even if it is small, occurs more frequently (Galhano-Alves 2000,

2002). Finally, sometimes a wild boar can defend itself against a wolf; so, for most people «*wild boar is the most powerful wild animal in the region.*» In reality, wild boar is the main wild prey of wolves in the region, representing about 30% of the wolf diet (Moreira et al. 1997). Consequently, most villagers have an inverted vision of the trophic chains. They believe, incorrectly, that wild boar, rather than the wolf, is at the top of the trophic chain.

For those reasons, most villagers do not know that wild boar proves a buffer against the likelihood of wolf attacks on herds, and wolves help regulate wild boar populations and reduce the effect of wild boar damage to crops.

The social virtues of both species are unknown to most people. At the same time, crop damage caused by wild boar affects about 10% to 20% of the farmers each year. In their lifetime, about 48% of farmers have experienced crop damage caused by wild boars. Most of the damage occurs in semi-natural pastures (33% of all damage), in corn and, at to a lesser extent, in potatoes, chestnuts, and cereals. Most damages cost less than 30 Euros, and few cost more than 75 Euros. Even small damages, however, have a strong psychological impact on farmers. From an agronomic perspective, some “damages” are not negative; e.g., small-scale soil tilling caused by wild boar in pastures can be beneficial.

The Montesinho Natural Park created a system of indemnities or special hunting permits for farmers that are affected by incursions by wild boar into crops. A few failures of this system generate hostility against the Park. Farmers also use traditional crop-protection methods, which can be improved. For example, some farmers hang from trees large empty cans and a stick. The wind moves the device, which acts as a simple noise mechanism, which keeps away wild boars and large wild herbivores. Some farmers put naphthalene in old cans, the smell of which protects vegetable gardens. Electric fences do not exist in the region but they could also be used, but their use must be seasonal, rather than permanent, and timely, so as to allow people and wildlife to move freely, which is essential to ecologic processes.

Encounters between wild boar and people are rare. Wild boar have been persecuted by humans in the region (and all over Europe) for many centuries. For that reason, wild boar avoid humans and run away from them. Despite that behaviour, 80% of villagers have seen a live wild boar. Of those individuals, only 40% have encountered wild boars more than 10 times. When they encounter a wild boar, villagers have a hostile attitude and shout at and insult the animal. Very few people have a positive, esthetical or peaceful attitude, saying they “*like to see wild boars.*” Some villagers fear wild boar, and wild boar distrust humans, but such behaviour is not universal. For example, in the Sariska Tiger Reserve, India, humans can walk near a wild boar without frightening the animal because local villagers have never persecuted

the species and they use passive methods to protect their crops from possible damage by wild boar (Galhano-Alves 1995, 2000, 2002).

In the Montesinho Natural Park region, most villagers ignore the social and ecological usefulness of wild boar, and say it is useful only “*because it can be eaten*” or “*because hunters might want to hunt it*”. For many villagers, the only useful wild boar is a dead one.

Consequently, 75% of the people say, “*wild boar should be exterminate*”, primarily because “*it destroys crops*”. Twenty-five percent say it should be conserved, primarily for value as a game species. Some people defend control, or good indemnities, as conditions for conservation. Very few villagers defend the conservation of the species and believe that “*wild boar have the right to exist in liberty and belong to nature*”.

Wild boar is the most disliked animal in the region, even more so than the wolf. In fact, 50% of people are in favour of wolf conservation and 40% against it. We feel that most of the favourable opinions towards wolf conservation are linked to a local cultural representation of the species, which sees it as “*the mountain guardian*”. According to that view, the presence of the wolf forces sheep herders to watch their herds closely, preventing their intrusion in agricultural fields, and frightens potential night crop thieves, too.

For the reasons described above, the wild boar is a victim of heavy poaching, which is probably more intensive than legal hunting. In total, maybe up to 1,000 wild boars are killed each year in the region. Poaching techniques include shooting and steel-cable traps. Poaching might endanger the species’ stability and, consequently, perhaps, that of the wolf, too.

Legally, wild boar are hunted at waiting posts and, once a year in each village, in hunting parties (battues). Most legal hunters that participate in the battues are from outside the region. Each hunter pays a hunting fee of about 50 Euros, which is shared by the park and the village. Hunted animals (about 2 to 7 per battue) are sold at auction for about 250 Euros, which goes to the village (Galhano-Alves 2000, 2002).

Wild boar is a traditional source of meat for villagers, and it could become an economic resource, too, if villagers participate in the management of hunting, transformation, and selling, and eco-tourism. Existing community councils, which are traditional land management institutions in the villages of the region, could manage hunting and eco-tourism activities under the supervision and scientific advice of the park and regional research centres. That could stimulate the villagers’ participation in sustainable hunting management, and increase their incomes. Also, presently, traditional culinary uses of wild boar meat are only made for self-consumption in the villages; but such typical meats products could be economically viable if an adequate

commercial network was organised in the region. The network could be made by community management village councils, by the existing regional agricultural cooperatives, by the Park, and by private partners. Several other forest, agricultural, and typical native products could also be sold within such a structure.

ANALYSIS

The culture of the area is part of the European sphere, where animals and plants are defined as “*useful and useless*,” or “*good and bad*.” For example, in the case of wild boar, the species is considered by many as a “*useless*” and “*bad*” animal, independent of its ecological and social usefulness, and its potential economical importance. That traditional western representation of Nature is anthropocentric, dichotomic and Manichean. And, fundamentally, it is non-systemic, because it does not view natural and cultivated vegetation, wild and domestic herbivores, wild carnivores and humans as complementary elements of the ecosystem. We must say that systemic representations of Nature can be found in other rural societies, such as those in India. Since the late 19th Century, western scientific biology and ecology also developed a Systemic representation of Nature. The concept of the ecosystem is a systemic representation.

Cultural representations of Nature have a strong influence on agrarian and other production systems, and in the way each human society integrates itself in the environment. In the case of European rural societies, their non-systemic representations of wildlife and Nature reflect their conflicted relationship with biodiversity. Contrary to other cultures, these societies tried to “*dominate Nature*”, instead of integrating themselves in synergy with the ecosystem (Galhano-Alves 1995, 2000, 2002).

SOLUTIONS AND PROPOSALS

In the Montesinho Natural Park region, as in other regions that have similar ecological, agrarian and socio-cultural characteristics, the following actions should be implemented:

Massive environmental education to bring scientific systemic representations of Nature to people, leading them to attribute ecological and social usefulness to wild boar and other species.

Massive reforestation, mostly in the marginal and less productive lands, with autochthonous species of trees and bushes, in order to restore primary production. Simultaneously, exotic species should be eradicated.

Conservation and re-expansion of wild boar, wolf, and other species, in order to restore biodiversity and the ecosystem's functional structure.

Increase the practice of traditional communitary land property, which permits rational and equitable territory management together with family direct and private farming.

Diffusion of sustainable living techniques, and reforms on resource management systems, leading to an integration in synergy of human societies with Nature.

All of these actions must be done with the participation of the people, democratically, in collaboration with multidisciplinary scientific and technical experts.

Wild boar conservation and the restoration of biodiversity are linked. Historically, habitat destruction and the extermination of large carnivores lead to cycles of wild boar and large herbivores epidemics, overpopulation, human persecution and, finally, extinction. Balance depends on conservation and restoration of trophic chains, together with human sustainable development.

In that context, the few zones where large carnivores, large herbivores and biodiversity are intact should not be considered as «zoos» rather, they must be the poles of re-expansion of species and biodiversity restoration.

The restoration of biodiversity ensures a high degree of equilibrium and productivity to humanised ecosystems. Simultaneously, it improves human societies' food, energy, and economic security, and quality of life, too, by the conjugated use of agricultural, forest, fauna and technologic resources (Galhano-Alves 1995, 2000, 2002). The future of wild boar and biodiversity, but also human societies depend on this process.

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