

## **Managing wild boar - considerations for wild boar management based on game biology data**

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### **Abstract**

The wild boar is a large ungulate which may produce serious economic problems. As the wild boar is highly reproductive, a fast dispersing species and flexible in behavior, management has to be adapted to the adaptive wild boar populations. On the other hand, the wild boar lives small scaled in family-groups, which enables management concepts on regional scale. Female wild boar of all age classes should be hunted in favour by comprehensive hunting methods for wild boar population regulation.

Keywords: game management, hunting management, radio-telemetry, reproduction, *Sus scrofa*, wild boar, wildlife biology

### **Introduction**

All over Europe hunting bags of wild boar *Sus scrofa* are increasing. Rising population densities and expanding distribution due to increased nutritional conditions, climate change and inefficient hunting require an effective and biologically based wild boar management to prevent economic problems (e.g. crop and grassland damage, transmitting zoonoses to livestock and humans). A lot of wild boar research has been done in the last decades. However, game managers were not able to incorporate this knowledge into the development of effective management strategies. Thus, further studies have to be accomplished aiming to combine wildlife biology and management.

Research results from radio-telemetric studies on wild boar ethoecology, estimation concepts, reproduction, mortality rates and efficiency of different hunting methods that provide a basis for management concepts.

### **Material and Methods**

I reviewed literature and own results on wild boar etho- and demecology and compared wild boar biology with hunting bag statistics, efficiency of hunting, and population models to describe adapted management concepts.

### **Results and Discussion**

Mean space use, especially of reproductive females within family groups, is small scaled; dispersal rates are low and male biased. Habitat use-availability-analyses showed that wild boar may prefer crop fields in summer. High damage of crops and grassland may occur. Moderate hunting has only small impact on wild boar behavior compared to seasonal influences. Changed space use patterns are mainly influenced by changed food availability. The wild boar is a flexible species, shown by high variation of all observed results between individual groups. Wild boar groups react flexible to several seasonal intrinsic and extrinsic factors. The omnivore wild boar easily adapts to various environments. Its wide eco-ethological plasticity allows the species to colonize new habitats and to enlarge its distribution.

Population estimations of wild boar are still insufficient. Thus further research has to be done to compare population data with hunting bag statistics to know exact harvest rates for regulation of populations. Some future attempts will be genetic analyses of hunting bags and phototrap counts.

Contrary to the high mean reproduction rate of wild boar with 262%, the mortality rate is in many European studies about 50%, the quota should be about 80%. Thus, the sustainable harvest rate was not exhausted. Life history models show that 80% of a year's piglets and additionally some older females have to be harvested to regulate the population. Single hunt from hides is the dominating and an efficient hunting method. Hunting efficiency should be raised by conducting more comprehensive drive hunts to

raise the proportion and amount of piglets and to shoot especially young adult females, which have the highest future reproductive success due to age class specific reproductive and mortality rates.

### **Conclusion**

All over Europe hunting rates seem to be lower than reproduction of wild boar. To reduce populations and thus, damages, hunting rates have to be increased especially for females, as all age classes of females are highly reproductive. The strong site fidelity of wild boar enables regional and even local management concepts. However, the high flexibility and learning aptitude require adapted flexible management strategies. Last but not least, game managers will have to incorporate willingness and ability of leisure hunters and stake holders into management concepts. The combination of different hunting methods is necessary to achieve efficient regulation or reduction in comprehensive areas.