

Ecology, physiology and behaviour

Movement ecology of individual wild boar (*Sus scrofa*) in response to different management approaches

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The proliferation of wild boar populations has increased concerns about the transmission of African swine fever (ASF) from wild to domestic environments. This disease represents a serious threat to both wild and domestic pig populations, requiring extensive measures to prevent ASF contamination. In addition, the combination of intensive agricultural practices and landscape fragmentation and urbanisation has increased the human-wildlife interface, also escalating human-wild pig conflicts, with significant economic implications. In this context, the need for management methods of this highly plastic and opportunistic species has increased. Yet, little attention has been given, so far, to understanding the effect of individual removals on the movement ecology of the remaining components of the sounders.

In addition to culling and traditional trapping methods, a new trapping method based on a simple but effective trap, the Pig Brig® (Field Engine Wildlife Research and Management, FEWR), has recently been introduced. The Pig Brig® is a passive trapping system that works like a creel, exploiting the rooting behaviour of pigs. The aim of this trap is to increase the number of individuals captured in a single trapping event (aiming at the whole sounder), while reducing the impact on individuals and the cost of management operations. Our project aims to analyse the effects that removal events with different methodologies (trapping and hunting) may have on spatial behaviour of adult wild boar females. The proposed experimental design involves the use of Pig Brig® for the trapping operations, with captures run in triplets of two independent treatment groups and one control, and 10 independent repetitions in the same study area (Parco Regionale Colli Euganei, Padua, Italy). In each sounder, the largest adult female is fitted with bio-logging collars (GPS and 3D accelerometers), while other individuals are alternatively: (i) instantly culled inside the trap (*Treatment 1*); (ii) fitted with ear tags first and culled about 30 days after released (*Treatment 2*); (iii) fitted with ear tags and released with no culling operations (*Control*). *Treatment 1* and *2*, respectively, allow monitoring the effects of capture and removal using traps and hunting, with particular focus on space use and dispersal of large adult females. By doing this, we hope to highlight the consequences in terms of movement behaviour for the most commonly used management methods and therefore to define new strategies to control wild boar.