

STRUCTURE AND MONTHLY BIRTH DISTRIBUTION OF A WILD BOAR POPULATION LIVING IN MOUNTAINOUS ENVIRONMENT

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Abstract: 328 wild boars (*Sus scrofa*) killed during the hunting seasons 1986 - 1992 in two valleys in the South-Western part of Piedmont (Italy) were analyzed. The animals were aged by tooth eruption and wear and the age/sex pyramid was built. Average age of females and males was respectively 17.3 months and 15.2 months. About 76% of the sample was constituted by animals up to 2 years old. 118 animals (under 18 months old) were aged also by eye-lens weight thus allowing to estimate the birth date and to calculate the monthly birth distribution: 56% of births took place between April and July.

Keywords: Wild boar, *Sus scrofa*, Suidae, Sex ratio, Population structure, Age ratio, Italy, Europe.

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1. Introduction

The knowledge of the size and structure of a population of a wild species is the basis for any correct management plan. In the case of Wild boar, for its life style and for its preference for "closed" habitats, an accurate census can hardly be held on large areas.

It is possible to use hunt bags data to built an age/sex population pyramid and such data set can be used as an indirect method to study population trends provided that the hunting effort has been constant along the years. As in most areas of South Europe, the hunt in Piedmont is performed by drives with hounds; this method may be considered as a random sampling of the population since hunters do not seem to prefer any particular age/sex class.

2. Study areas, material and methods

Study areas are two valleys in South-West Piedmont (NW Italy):

- Varaita Valley is a typical alpine valley running West-Eastwards showing strong climatic differences between the North- and South-facing sides. Annual rainfall is 800-1,000 mm (150 mm in summer). Scots pine (*Pinus sylvestris*) on the warmer side and Fir (*Abies alba*) on the cooler one are the dominant trees. A large *Pinus cembra* wood is located on the South-facing side. Animals from this area were killed between 400 and 2,700 m u.s.l. (average 1,000 m).

- Tanaro Valley is located in the southernmost part of Piedmont, in the Maritime Alps. It runs SSE-NNO and it is characterised by an apenninic-mediterranean climate. *Pinus sylvestris* is the dominant tree in pure stands or mixed with *Castanea sativa* or *Betula sp.* On the bottom of

the valley *Quercus pubescens* is widespread. This valley represents the southern limit in the distribution of some typical alpine species, like *Lagopus mutus*.

Wild boars killed during the hunting seasons 1986 - 1992 were analysed. 328 of them were aged by tooth eruption and tooth wear following Iff (1978).

Aging Wild boar by the eye-lens weight is the more precise available method: its precision decreases while the age of the animal increases (Pépin *et al.*, 1987). In order to obtain a reliable birth distribution only 118 animals that were under 18 months of age have been considered. The limit of 18 months was fixed in order to obtain data from any month.

3. Results and discussion

The regional hunting regulation protects striped piglets, so the first age class (up to 6 months of age) is strongly underestimated (Fig 1). Nevertheless the population of hunted animals is fairly young: about 76% of the sample is constituted by animals up to 2 years old and only 5.2% is more than 3 years old. Average age was 17.3 months for females and 15.2 months for males. The oldest male was 6-7 years old and 125 kg of undressed weight. The fact that the sex ratio on the whole sample is almost 1:1 (considered to be the natural ratio) indicates that the hunters do not discriminate between sexes (Tab. 1).

During the period 1986 - 1992, 162 animals were collected in the Varaita valley while the collection of 166 wild boars in Tanaro valley took place in the years 1991-1992. So in the

Table 1: Sample size and sex ratio in the two study areas, (N = 328).

Age (months)	Sample size (n)	Total	Males/Females Ratio (M/F)	
			Tanaro	Varaita
≤6	60	0.82	0.94	0.66
7-12	75	1.50	1.05	1.72
13-18	57	0.90	1.00	0.73
19-24	65	0.85	0.85	1.00
25-30	41	0.64	0.61	0.70
31-36	13	0.85	0.33	4.00
≥37	17	0.54	1.00	0.33

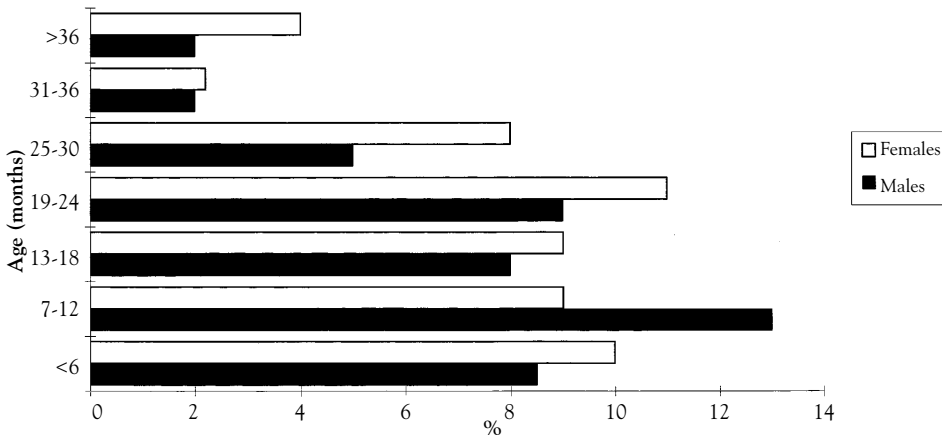


Figure 1 - Age/sex composition of total sample (N = 328).

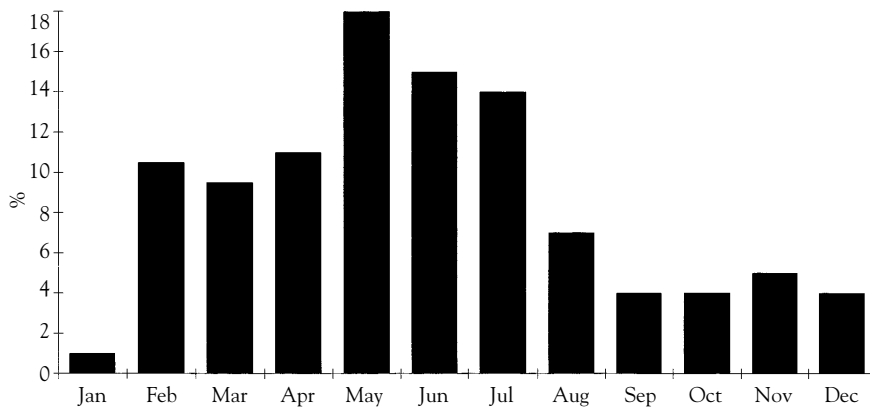


Figure 2 - Monthly distribution of births. (N = 118)

first study area data might have been affected by population changes, nevertheless shooting effort and bag size during this period have been constant and we have no evidence of any changes in population size or structure. The monthly distribution of births (n = 118) shows a typical seasonal pattern with 56% of the births concentrated between April and July (Fig 2). Anyway births took place all around the year and this confirms the observations of

“striped” piglets that have been done in all months.

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