

The Home Range of the Lanner *Falco biarmicus feldeggii*: influences of territory composition

Giovanni Leonardi

ABSTRACT

Five Lanner nesting sites were studied. Comparison of habitat use with the available prey biomass gave significant results only for high bushes.

Perhaps other prey items such as mammals or reptiles are also important in the trophic biology of the male Lanner.

INTRODUCTION

Since 1989 five Lanner's nest sites were studied in different parts of Eastern Sicily. The physical and biological features of one were analysed.

The Lanner has a variety of hunting techniques that are seemingly related to vegetation cover. Moreover this falcon is largely adapted to open spaces, i.e. low bushes, steppe meadows and cultivated areas.

Cultivated fields supported large amounts of small birds such as sparrows and larks, its possible prey. I conducted a study to determine the effects of the territory composition on the availability of Lanner prey together with the time budget of the male.

STUDY AREA AND METHODS

I censused the total numbers of birds in the study area on 10 occasions by walking across a precise route (Leonardi 1991; Lo Valvo 1988).

The home range sizes were calculated, based on sightings farthest from the nest site, and recorded on a UTM 1:25.000 topographic map (Bechard 1982).

Home range was divided into three main habitat types: high bushes (>2 m.), low bushes (< 1-2 m.) and steppe meadow (Lo Valvo 1986).

The vegetation of the study area consists largely of Olive (*Olea europaea*) grove with some interposed areas of *Opuntia ficus-indica*, whereas steppe meadows are represented by uncultivated fields.

RESULTS AND DISCUSSION

Table 1 shows the results of this study whereas Figure 1 shows the relative foraging use of the males in the different habitats of the five sites.

Figure 1. Foraging use by male Lanner Falcon in different types of habitat.

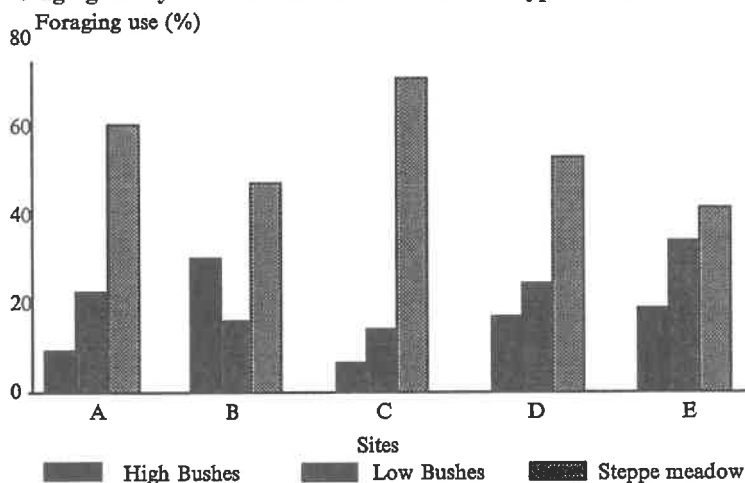


Table 1. Lanner home range structure.

Home range size (Site A)		Foraging use	24%
Total area	42 ha	Foraging use	64%
1. High bushes	20 ha	Site B	
2. Low Bushes	12 ha	Estimated biomass (gr./ha)	260.2
3. Steppe meadows	10 ha	Estimated biomass (gr./ha)	195.6
Climatic characters (Site A)		Estimated biomass (gr./ha)	280.4
Annual rainfall 600-800 mm.		Foraging use	32%
Annual mean temperature 12-14 °C		Foraging use	18%
Bird community		Foraging use	50%
No. of species	38	Site C	
No. of ind.	781	Estimated biomass (gr./ha)	201.4
No./ha 18.6		Estimated biomass (gr./ha)	230.3
Estimated biomass (gr)	58,070	Estimated biomass (gr./ha)	330.1
Estimated biomass (gr./ha.)	382.6	Foraging use	8%
Prey species (≤ 100 gr.)		Foraging use	16%
No. of species	27	Foraging use	76%
No. of probable prey species	14	Site D	
Estimated biomass (gr.)	11.464	Estimated biomass (gr./ha)	230.6
Estimated biomass (gr./ha)	272.9	Estimated biomass (gr./ha)	115.2
Prey biomass/Total biomass	0.20	Estimated biomass (gr./ha)	235.1
Prey species (1)	7	Foraging use	17%
Prey species (2)	4	Foraging use	28%
Prey species (3)	3	Foraging use	55%
Estimated biomass (gr.) (1)	4790	Site E	
Estimated biomass (gr.) (2)	2639	Estimated biomass (gr./ha)	244.3
Estimated biomass (gr.) (3)	2775	Estimated biomass (gr./ha)	220.3
Site A		Estimated biomass (gr./ha)	265.2
Estimated biomass (gr./ha) (1)	239.5	Foraging use	20%
Estimated biomass (gr./ha) (2)	219.9	Foraging use	35%
Estimated biomass (gr./ha) (3)	277.5	Foraging use	45%
Foraging use	12%		

Much of the males' diet consisted of species with sizes ≤ 100 gr. In fact prey species up to 100 gr. are caught exclusively in pair (Leonardi *et al.* 1992).

The comparison of habitat use with the available prey biomass gave significant (≤ 0.05) Spearman Rank correlation coefficient of 0.9 only for high bushes.

Although the male Lanners spent most of the time in the steppe meadows, there was no correlation with the bird prey abundance (in terms of biomass).

I concluded that the high percentage of high bushes in five Lanner sites supported a good number of potential prey species.

Finally I think that in the steppe meadows there are other important prey items such as mammals, reptiles and invertebrates in addition to birds.

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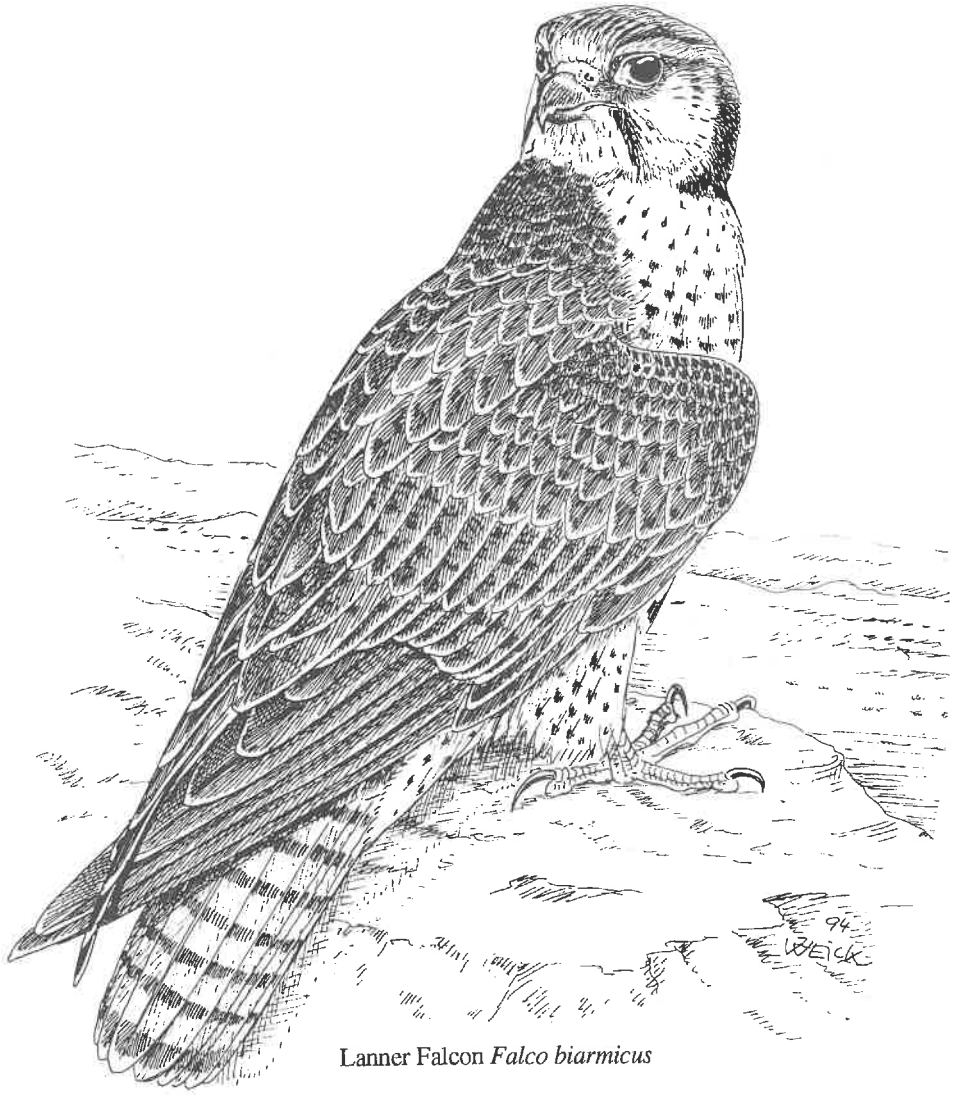
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Giovanni Leonardi
Via Santangelo Fulci, 28
95127 Catania
Italy



Lanner Falcon *Falco biarmicus*