

MICROHABITAT CHOICES OF *ARCHAEOLACERTA BEDRIAGAE*: LOCAL PREFERENCES AND ADAPTATIONS

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Archaeolacerta bedriagae is a rock lizard confined to large rocky outcrops of Sardinia and Corsica. This species shows some specialized characters probably associated with rock-dwelling, climbing vertical surfaces and hiding in small refuges (Arnold, 1998, Bull. Nat. Hist. Mus. Lond. 64: 63-89). In spite of the possible correlation between some morpho-functional traits and the peculiar autoecology of this species, only few papers examined in detail the habitat use of *A. bedriagae* (e.g. Vanhooydonck et al., 2000, Funct. Ecol. 14: 358-368).

In this research the micro-habitat choices made by 224 individuals of six populations (two from Corsica and four from Sardinia) inhabiting insular, coastal and mountain sites were examined. The values of the following 15 environmental variables regarding the First Sight Point of specimens (FSP) and the circular surface ($\varnothing=1\text{m}$) surrounding the FSP were measured: *height of FSP from the ground level (HFG)*, *inclination of the FSP (INCL)*, *exposure of the FSP (EXP)*, *distance of FSP from the nearest plant (DFP)*, *distance of FSP from the nearest hold (DFH)*, *percentage of rock coverage in the surface surrounding the FSP (%ROCK)*, *percentage of ground coverage in the surface surrounding the FSP (%GROUND)*, *percentage of grass coverage in the surface surrounding the FSP (%GRASS)*, *percentage of shrubs coverage in the surface surrounding the FSP (%SHRUB)*, *percentage of trees coverage in the surface surrounding the FSP (%TREE)*, *maximum vegetation height (MVH)*, *number of very small holds (size<3cm) in the surface surrounding the FSP (NXSH)*, *number of small holds (size<20cm) in the surface surrounding the FSP (NSH)*, *number of medium holds (20cm<size<50cm) in the surface surrounding the FSP (NMH)*, *number of large holds (size>50cm) in the surface surrounding the FSP (NLH)*. The same measurements were also recorded on 175 descriptive points, selected at regular intervals along random linear transects throughout the same sites where the previous 224 observation points were recorded, in order to investigate micro-habitat availability in the studied sites. The presence of autocorrelation among these variables was tested (Spearman correlation test: $P<0.003$) and, in order to minimize the effect of autocorrelation, five variables (HFG, DFP, %ROCK, MVH, NXSH) were excluded from the following analyses.

Some differences between the Corsican and Sardinian descriptive points are statistically significant (Mann-Whitney U Test: $P<0.005$), in particular as concerns DFH ($U=2068.50$; $Z=4.36860$; $P=0.000013$), %GRASS ($U=2598.00$; $Z=-3.25486$; $P=0.001135$) and NSH ($U=2031.00$; $Z=-5.37006$; $P=0.000000$). On the contrary, the observation points of both islands are pretty similar, and only one variable (NLH) resulted significantly different ($U=3345.50$; $Z=3.55341$; $P=0.000380$). Six of the ten used variables appear significantly different between the observation points and the descriptive points. In particular, values of INCL and NLH are higher in the observation points than in the descriptive points (respectively: $U=15455.00$; $Z=3.71673$; $P=0.000202$, and $U=13716.00$; $Z=5.88406$; $P=0.000000$). On the contrary, values of DFH, %GROUND, %GRASS and NSH are lower in the observation points than in the descriptive points (respectively: $U=15952.00$; $Z=-3.15435$; $P=0.001609$ - $U=16884.50$; $Z=-5.55281$; $P=0.000000$ - $U=15890.00$; $Z=-4.55477$; $P=0.000005$ - $U=15935.00$; $Z=-4.38747$; $P=0.000011$). According to these results, though Sardinian and Corsican sites are quite different one another, lizards select micro-habitats rather similar in both islands showing specific preferences throughout its range, independently from differences among sites and habitat availability. Within generically rocky sites, *A. bedriagae* specifically selects distinct points particularly steep and

close to potential holds, with scarce ground and grass, a low number of small refuges and numerous large crevices.

Key words: *rock lizard, Sardinia, Corsica, microhabitat choices.*