

## **Activity patterns and microhabitat use of the wall lizard *Podarcis bocagei* inhabiting agricultural stone walls**

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### **Abstract:**

Lizard biology is strongly linked to the spatial structure of their environment, since lizards are sedentary and depend on habitat complexity for thermoregulation, hydroregulation and antipredator defence. Agricultural stone walls are their most commonly occupied habitats, providing them with food, shelter and thermoregulating surfaces. Management may affect microhabitat structure, with uniformized concrete walls and the trimming of surrounding vegetation leading to a reduction of the available shelter. Here we analyzed the daily activity patterns and microhabitat use of *Podarcis bocagei* wall lizards occupying agricultural walls. From May to July 2022, lizard surveys based on visual encounters were performed in corn (*Zea mays*) fields in Vairão, NW Portugal, following line transects along stone walls. Each observation included information on the lizard class (adult male, female or immature), time of day, height above ground, epiphytic vegetation and number of holes. Associations between the environmental variables were examined through a multiple correspondence analysis. Results show a tendency for different patterns of activity between the morning and afternoon periods, suggesting that lizards thermoregulate during the first hours of the day, avoid activity during the heat of midday, and forage in the afternoon. Immature individuals occupied more open sections of the wall, with small or no holes and sparse vegetation. Males and females show no difference in activity or preferred microhabitat structure. Lizards avoided sections with no vegetation, and were seldom observed at ground level. They were most often observed near smaller holes than larger holes, possibly avoiding these locations due to predation from larger predators such as *Timon lepidus*. Studies in nonpristine areas suggest guidelines on how reptiles may cope with humanized landscapes and, ultimately, provide clues on how agriculture practices and biodiversity conservation could be better harmonized.