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Short Note

Nest-site selection by Levaillant's Woodpecker *Picus vaillantii* in the Aurès Mountains of northeastern Algeria

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We investigated ecological factors that influence the presence of nests of Levaillant's Woodpecker *Picus vaillantii* in the Aurès Mountains of northeastern Algeria. Surveys carried out during the breeding season in 2018 and 2019, using point counts combined with extensive nest searching around each point at 72 random stations, allowed us to detect 44 nests against 28 unoccupied points. Using data on trees, deadwood, snags, canopy cover at the nest site, and elevation, we developed models reflecting landscape structure and forest composition. The results indicate that *P. vaillantii* prefers nesting in high-altitude forests and in dense canopies with high elevation. This reflects the importance of the forest composition, which is related to altitude, and the landscape structure, represented by the canopy cover, for the breeding of this species.

Sélection des sites de nidification du Pic de Levaillant *Picus vaillantii* dans le massif de l'Aurès du nord-est algérien

Nous avons étudié les facteurs écologiques qui influencent la présence de nids du Pic de Levaillant *Picus vaillantii* dans le massif de l'Aurès du nord-est algérien. Les relevés effectués au cours des saisons de reproduction de 2018 et 2019, à l'aide de points d'écoute combinés à une recherche approfondie des nids autour de chaque point dans 72 stations aléatoires, nous ont permis de détecter 44 nids contre 28 points inoccupés. En utilisant des données sur les arbres, le bois mort, les chicots, la couverture de la canopée sur le site de nidification et l'altitude, nous avons développé des modèles reflétant la structure du paysage et la composition de la forêt. Les résultats indiquent que *P. vaillantii* préfère nicher dans les forêts de haute altitude et dans les canopées denses à haute altitude. Cela reflète l'importance de la composition forestière, liée à l'altitude, et de la structure du paysage, représentée par la canopée, pour la reproduction de cette espèce.

Keywords: altitude, canopy cover, cedar forest, mountain habitat, North Africa, point count method

The Aurès Mountain range of northeastern Algeria is covered by the greatest area of xeric forests and southernmost cedar forests in North Africa. This region represents a crossroads of Mediterranean, continental and montane habitats (Quézel 1985). This geographical position, combined with local climate variability, supports rich floral and faunal variety, including several endemic bird species, such as Levaillant's Woodpecker *Picus vaillantii*, the only tree-cavity excavator in these habitats (Moussouni 2018; Badis and Hamdi 2022a). Levaillant's Woodpecker is the sister species of the European Green Woodpecker *Picus viridis* (Perktas et al. 2011). It is a resident of forest areas in Maghreb countries of northwest Africa. In Algeria, it occupies wooded places from the coast to the massifs of the Saharan Atlas range and the Aurès Mountains (Isenmann and Moali 2000).

Biodiversity monitoring is an effective tool for the management and conservation of forests (Magnusson et al. 2018). Because it is impossible to track all the taxa present in a forest ecosystem, scientists most often use representative groups as indicators of the health of the environment. The family Picidae (woodpeckers) is among the families most used in forest biodiversity measurements for several reasons. These species give clues to the biotic or abiotic state of a forest, reflect its diversity, and serve as a proxy for the impacts of changes in these ecosystems and their communities. In this context, quantifying woodpeckers can reveal early signals of decline in other components of the ecosystem, especially ecologically related species, which can be applied to forest management (Lindenmayer 1999; Caro 2010). Additionally, woodpeckers are key species whose presence and activity contribute to the proper functioning of the entire forest ecosystem (Paine 1995). This is essentially related to their ability to excavate tree holes to be used as nesting cavities. These cavities will later be reused by

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