First in-depth herpetological surveys of the Vulture Regional Park (Basilicata, Italy), reveal a new diversity hotspot for Southern Italy

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GENERAL INFORMATION

Species name: *Salamandrina terdigitata, Salamandra salamandra, Triturus carnifex, Lissotriton italicus, Bombina variegata, Bufo bufo, Bufotes viridis, Hyla intermedia, Rana dalmatina, Rana italica, Pelophylax sp., Trachemys scripta, Chalcides chalcides, Anguis veronensis, Tarentola mauritanica, Podarcis siculus, Podarcis muralis, Lacerta bilineata, Natrix tessellata, Natrix helvetica, Hierophis viridiflavus, Zamenis lineatus, Elaphe quatuorlineata, Vipera aspis*

Geographic area: Vulture Regional Park, Basilicata, Italy. The Regional Park comprises the following municipalities (all of them within the province of Potenza): Atella, Barile, Ginestra, Melfi, Rapolla, Rionero in Vulture, Ripacandida, Ruvo del Monte, San Fele

Period: March 2024 - September 2025

Type of data: Occurrences and environmental parameters

Reference to the dataset: https://doi.org/10.5281/zenodo.18901937

ABSTRACT

Data Descriptor.

The present dataset was compiled during two field surveys (the first between March and August 2024; the second between March and September 2025) and integrated with records derived from citizen science initiatives. It includes presence data for 11 Amphibian species (total records: 205) and 13 Reptile species (total records: 443) within the study area, encompassing the Vulture Regional Park and adjacent territories. Field surveys were held implementing V.E.S. (visual encounter surveys), active search in potential breeding sites and acoustic surveys. Occurrence data were subjected to spatial thinning using a minimum distance of 100 meters to reduce spatial autocorrelation, reducing the 779 observations in the original database to 648. Environmental data were sourced from the "La Carta della Natura d'Italia" (Bagnaia et al., 2009) - information system while references about altitude were extracted with the Geographic Information System. Amphibian breeding habitat was categorized as the type of breeding site (natural lotic, natural lentic, artificial).

Southern Italy in general, and Basilicata in particular, stands out for the low number of scientific contributions focusing on Amphibians and Reptiles, the dataset presented here provides a substantial contribution to improving current knowledge of these two taxa.

METHODOLOGY

An initial survey was carried out in 2023 (September and October) with the primary goal of identifying potential breeding sites for Amphibians. This survey was carried out by first consulting the RSDI portal of the Basilicata Region and focusing on the shapefiles and maps present therein including: a) IGM maps at 1:25,000 scale, b) CTR maps 1:5,000, c) Orthophotos; with the identification of hydronyms and point and linear symbols relating to the presence of water (wells, cisterns, water troughs, fish ponds, streams etc.). This allowed us to identify over 400 sites potentially suitable for hosting amphibians. Following the cartographic analysis, field visits were conducted to ground-truth the selected locations and assess their actual suitability (i.e. water availability) and accessibility. After visiting sites in 2023, those identified as suitable (n. 261) were visited at least once during 2024 monitoring season. Individuals were identified to species level (except for the genus *Pelophylax*) either by direct observation or through capture, rapid examination, and immediate release (permission obtained from MASE in derogation from the provisions of Articles 8 and 10 and pursuant to Article 11 of Presidential Decree 357/97). Reptile diversity was documented mainly with Visual Encounter Surveys along transects or through active search in suitable habitats. The 2024 survey (March to August) was conducted with a systematic approach by the authors V.G.R., L. P., A.S. and G. P., records from 2025 (March to September) were collected with a more opportunistic approach by R. B. and also included records from citizen science efforts (collected through the social media Facebook (www.facebook.com) and validated by R.B.). Occurrence data in the field were recorded with the software QField (QField project, version 1.10.0) on Android devices. From the field data collected with QField we extracted environmental data (Carta della Natura d'Italia) and altitude in G.I.S. environment (QGIS Desktop 3.22.11) and thinned the records of the same species using a minimum distance of 100 meters in order to reduce spatial autocorrelation reducing the 779 original records to 648.

DATASET DESCRIPTION

Our database consists of 8 columns including the following attributes: *i*) species' scientific name according to the "Species list of the European herpetofauna" (Speybroeck et al., 2020); *ii* and *iii*) geographic coordinates X and Y (WGS 84 / UTM zone 33N); *iv*) observation date; *v*) category of wetland breeding site distributed as follow: A = natural lotic site (river, stream, irrigation channel); B = natural lentic site (pond, lake, temporary pool, flooded meadow/woodland); C = artificial site (cistern, drinking through); exclusively for amphibian species records); *vi*) habitat type according to the "La Carta della Natura d'Italia" (Bagnaia et al., 2009); *vii*) habitat type name in English; *viii*) altitude.

REFERENCES

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Speybroeck, J., Beukema, W., Dufresnes, C., Crochet, P.-A., et al. (2020): Species list of the European herpetofauna: 2020 update by the Taxonomic Committee of the Societas Europaea Herpetologica. Amphibia-Reptilia, **41**: 139–189.

SUMMARY OF DATA

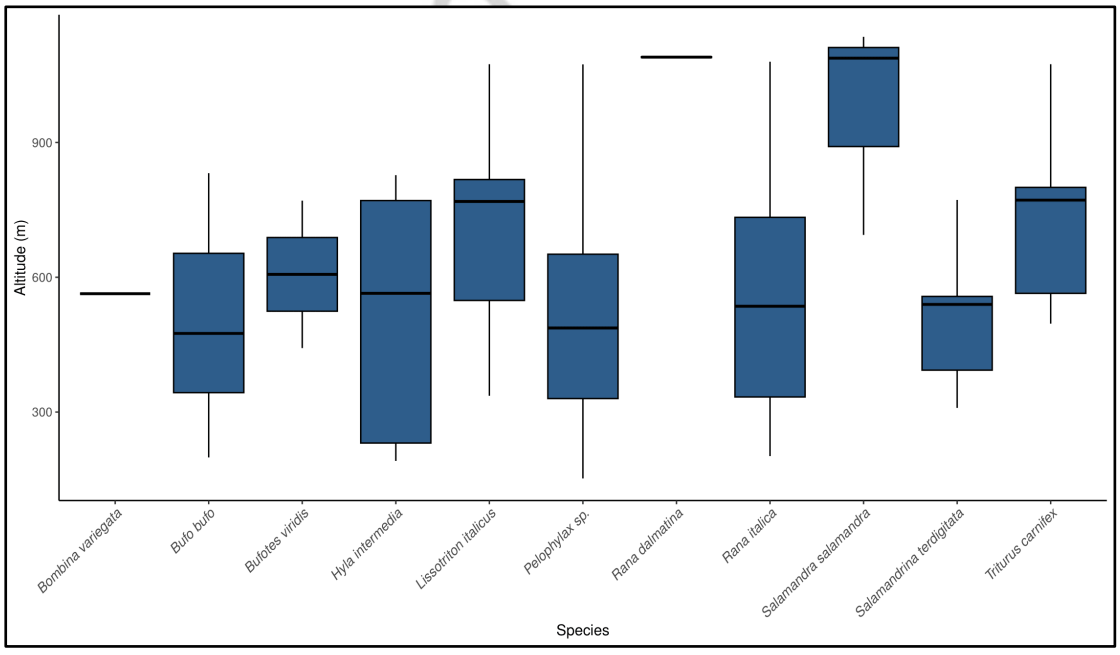

Figure 1 *Altitudinal distribution of recorded amphibian species in Vulture Regional Park between March 2024 and September 2025).*

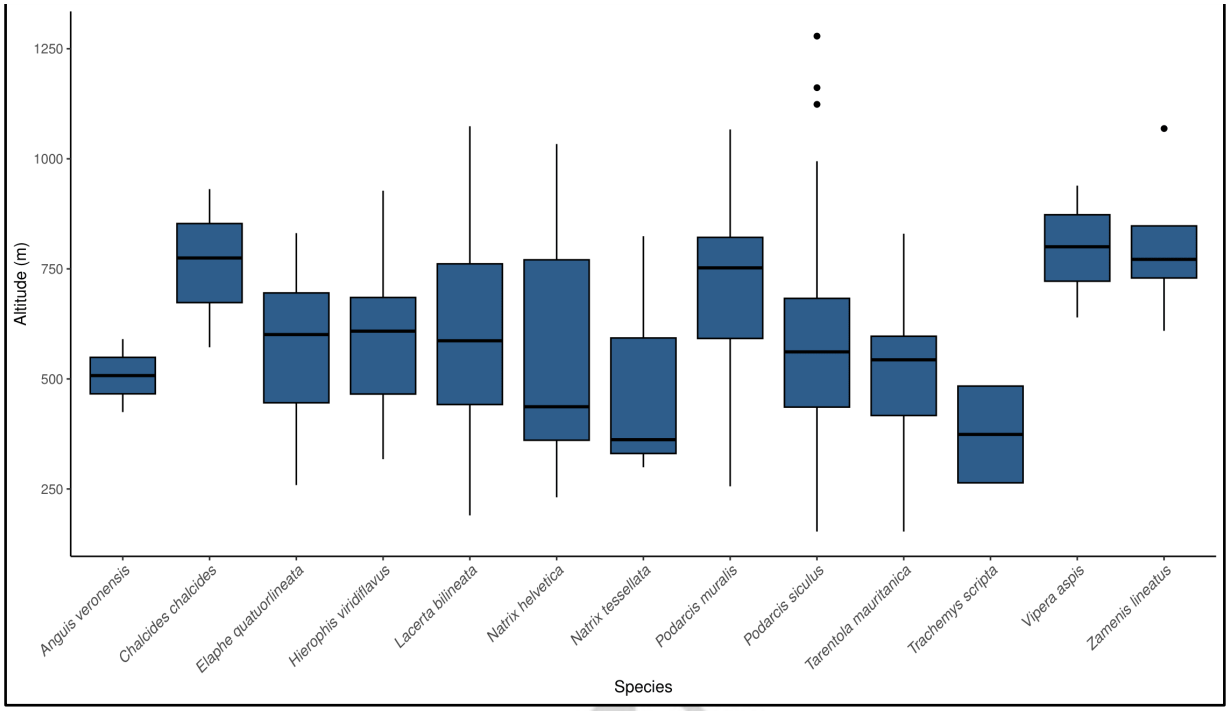

Figure 2 *Altitudinal distribution of recorded reptile species in Vulture Regional Park between March 2024 and September 2025)*

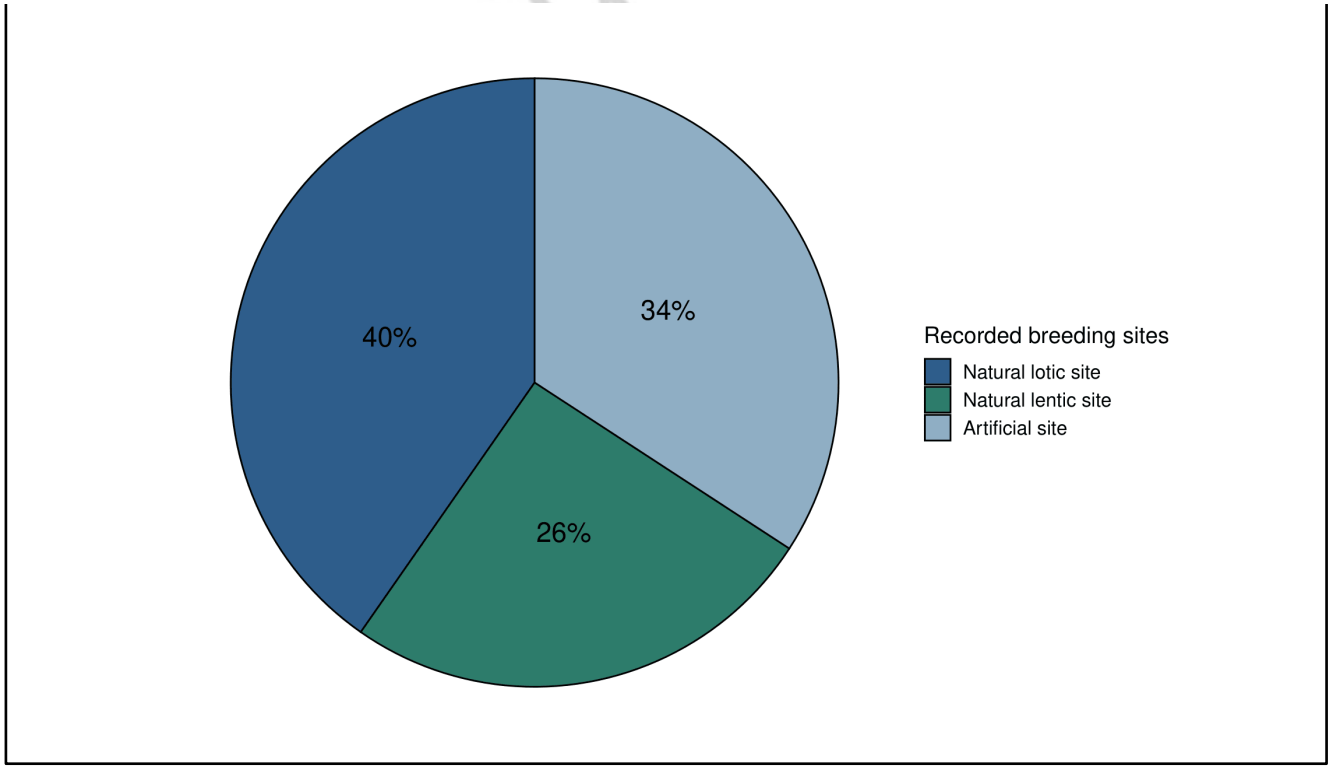

Figure *3Breeding wetland type for amphibian species in Vulture Regional Park*