

Der Moorfrosch (*Rana arvalis*): Erscheinungsvielfalt, Verbreitung, Lebensräume, Verhalten sowie Perspektiven für den Artenschutz

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The moor frog (*Rana arvalis*): diversity of morphs, distribution, habitats, behaviour, and perspectives for species conservation

The moor frog (*Rana arvalis*) inhabits the largest territory of all Eurasian true frogs (Ranidae), and its east-west extension spans more than 7200 km, from northern France to beyond Lake Baikal. Within this area, the moor frog shows pronounced morphological and autecological (aquatic and terrestrial) variation, and at least in southeastern Europe a large amount of genetic variation. Nevertheless, no geographic subspecies can be delineated except the partly disputed *R. a. arvalis* and *R. a. wolterstorffi*. The latter inhabits a small area in the Pannonian region, whereas the former covers the remainder of the distribution range. The genetic-taxonomic status of marginal populations in the Balkans (Slovenia, Croatia) and the Ukraine remains as yet unresolved. A special feature of the moor frog is the purple or blue colouration of males during the breeding season, whose origin as well as function is as yet unknown. In northern Scandinavia, as well as some southern populations, this colouration is missing or only observed in some years. Suitable habitats for the moor frog are very diverse, and encompass moor edges, heath ponds, riverine forests, meadows and pastures, and even dry pine forests. Regional habitat specialisations are noted towards the margins of the distribution area, whereas the moor frog is rather a generalist in core areas. Habitat specialisation in the densely populated western border of its distribution constitute a major threat, as only unsuitable areas remain following habitat destruction. *Rana arvalis* is therefore in part highly endangered or at risk of extinction in France and southwest Germany, and sustainable and comprehensive conservation programmes are thus urgently necessary. Large-scale agricultural extensification measures and the creation of new breeding sites are key towards establishing connectivity between remaining populations and a restoration of their habitats. Additionally, further research into the species' conservation biology is necessary.

Key words: Amphibia, Ranidae, *Rana arvalis*, distribution, variability, blue colouration, habitats, regional habitat specialisation, conservation status, conservation measures, research activities.

Zusammenfassung

Der Moorfrosch (*Rana arvalis*) bewohnt das größte Areal einer eurasischen Art der Echten Frösche (Familie Ranidae). Die West-Ost-Ausdehnung des Verbreitungsgebietes reicht von Nordfrankreich über mehr als 7200 km bis hinter den Baikalsee. In diesem riesigen Areal variiert die Art außerordentlich stark in Bezug auf morphologisch-ekologische Merkmale, die aquatischen und terrestrischen Habitats sowie in Südosteuropa in Hinblick auf mitochondriale Haplotypen. Trotzdem lassen sich mit