

# Langzeituntersuchung der Braunfrösche (*Rana arvalis*, *R. temporaria*, *R. dalmatina*) im Aischgrund in Mittelfranken (Bayern) unter besonderer Berücksichtigung des Moorfrosches

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## Long-term study of brown frogs (*Rana arvalis*, *R. temporaria*, *R. dalmatina*) in the Aischgrund in Middle Franconia (Bavaria) with special reference to the moor frog

For the second largest Bavarian moor frog population in the Central Franconian carp pond landscape of the Aischgrund in the district of Erlangen-Höchstadt, monitoring has been carried out for 26 years (1996–2021) as part of an ABSP implementation project, which has been continued since 2011 as a project to implement the Bavarian Biodiversity Strategy of the Government of Central Franconia. The original objective was the habitat protection of selected moor species such as moor frog and moor dragonflies as well as the success control of implemented maintenance measures. In the context of the annual spawning clump count for the moor frog, grass frog and agile frog were also considered. After an initial population decline of the moor frog, targeted maintenance and development measures led to a considerable increase and multiplication of the initial population by 2012. In the last 10 years, however, the moor frog and grass frog suffered severe population declines to fractions of their former population sizes, despite largely unchanged habitats at first glance. The reason for this was increasing drought, although climate change was not the only cause of amphibian decline. Further factors are: nutrient mobilization and eutrophication due to repeated drying of spawning waters and moor soils that used to be permanently wet; significant increase in pH value; increased nutrient and probably also pollutant enrichment due to unchanged high inputs from agriculture. Already existing pressures on the ecosystem are intensified by climate change, influence each other and have a negative impact on all amphibian species. The agile frog, unlike the grass frog, was least affected by drought, except in very hot years. The grass frog disappeared completely from 2012 onwards in large parts of the study area.

**Key words:** Amphibia, *R. arvalis*, *R. temporaria*, *R. dalmatina*, long term study, Middle Franconia, Germany.

### Zusammenfassung

Für die zweitgrößte bayerische Moorfrosch-Population in der mittelfränkischen Karpfenteichlandschaft des Aischgrundes im Landkreis Erlangen-Höchstadt wird seit 26 Jahren (1996–2021) im Rahmen eines ABSP -Umsetzungsprojekts ein Monitoring durchgeführt, welches seit 2011 als Projekt zur Umsetzung der Bayerischen Biodiversitätsstrategie der Regierung von Mittelfranken fortgeführt wird. Ursprüngliche Zielsetzung war die Lebensraumsicherung von ausgewählten Moorarten wie Moorfrosch und Moorlibellen sowie die Erfolgskontrolle von durchgeführten Pflegemaßnahmen. Im Rahmen der jährlichen Laichballenzählung beim Moorfrosch