

Die Gelbbauchunke im Schutzgebiet Binsfeldhammer im Raum Aachen (NRW): Gewässernutzung, Populationsgröße, demographische und morphologische Parameter

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The yellow-bellied toad in the natural reserve Binsfeldhammer in the Aachen area (NRW): preferred water bodies, population size, demographical and morphological parameters

In 2017, we investigated the population of *Bombina variegata* in the natural reserve Binsfeldhammer with regard to preferred water bodies, population size, demography, morphology and nutritional condition. The yellow-bellied toads are using ponds on three floors of the former quarry. Out of four pond types (ponds constructed with polyethylene, concrete or pond foil and natural temporary ponds), only polyethylene and concrete ponds were used for reproduction in 2017, the other pond types only for residence. This is most likely caused by the relatively simple maintenance (removal and cleaning in winter) of these ponds types (in contrast to the ponds made out of foil), which reduces predator and vegetation densities. In the hot summer 2017, all the natural temporary ponds (ditches) dried out too fast to be used for reproduction by the population. The estimated adult population only marginally differed from the photographically identified adults (81 identified, estimated 84 adults). The sex ratio is almost balanced and at all three floors of the former quarry reproduction took place. The residual index, which should be regarded for yellow-bellied toads, did not indicate significant differences with regard to the nutritional conditions of individuals from different floors, suggesting that the habitat quality of the floors is comparable. The results suggest that polyethylene and concrete ponds, which are easy to clean, should be preferred when constructing reproduction ponds for yellow-bellied toads. Also some deeper ponds should be constructed or – where possible – a water management of consisting ponds conducted with regard to hot and often also dry summers, which will increase in the future.

Key words: *Bombina variegata*, quarry, amphibian conservation, LIFE-project, capture-mark-recapture, body indices, nutritional condition.

Zusammenfassung

Wir untersuchten im Jahr 2017 die Akzeptanz verschiedener Kleingewässer, die Populationsgröße, die Demographie, die Morphologie sowie den Ernährungszustand einer Population von *Bombina variegata* im Schutzgebiet Binsfeldhammer im Raum Aachen (NRW). Die Gelbbauchunken nutzten Gewässer auf drei verschiedenen Sohlen des ehemaligen Steinbruchs. Von vier verschiedenen Gewässertypen (Polyethylen- und Betonbecken, Folienteiche sowie im Gebiet natürlich entstehende Temporär-gewässer) wurden im Jahr 2017 nur Polyethylen- und Betonbecken zur Reproduktion