

Zur Biologie der Geburtshelferkröte (*Alytes obstetricans*) in Kalksteinbrüchen des Niederbergischen Landes (Nordrhein-Westfalen)

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Biology of the midwife toad (*Alytes obstetricans*) in limestone quarry areas of the Niederbergisches Land (Northrhine-Westphalia)

The study presents phenological, biometrical and ecological data on *Alytes obstetricans* which were mainly observed in the spring 1999 and 2000 while taking care of an amphibian fence. In both years seasonal activities started in March (13.3.1999, 18.3.2000). The first male carrying fresh egg clutches was found on 2.4.1999, and the first males with mature egg clutches on 8.5.1999 and 5.5.2000. Those larvae, originating from early clutches, may metamorphose within the same year. In 1999, 2000 and 2001 metamorphosis started at the end of July and lasted until the end of September, exceptionally until 18th of October. The later ones hibernate and emerge in the next year between the end of May and the end of June. The snout vent length of 79 males ranged from 3.1 to 4.6 cm ($b = 3.95$ cm). Females ($n = 55$) become larger and ranged from 3.6 to 5.0 cm ($b = 4.27$ cm). Juveniles ($n = 230$) measured 1.6 to 2.9 cm ($b = 2.35$ cm) after having completely absorbed their tails. The average number of eggs, carried by the males was 50.9 (min. 18, max. 126, $n = 64$). Forty percent of the clutches had more than 50 eggs and likely result from two females. Within the quarry, small pools exposed to the sun proved to be the preferred habitats for reproduction. There were both permanent water bodies and very shallow pools which were endangered by drying up. Deep, cold quarry ponds served as habitats for larvae too. Within the spawning ponds studied, larvae of midwife toads were associated on an average with 3.2, and as many as 7 further amphibian species. Frequently co-occurring species were *Triturus alpestris*, *Bufo calamita* and *Triturus vulgaris*. Comparisons with older studies indicate populations of the midwife toad are still well distributed within the quarries of the region. Nevertheless, species status has worsened. Calling groups with more than hundred males actually are unknown. Reasons for species decline may result in modern technologies of limestone mining, commercial use of the areas following mining activities, questionable aims of cultivating, changing of environmental conditions (e. g. water and thermal aspects) due to natural succession which occurs upon cessation of mining activities.

Key words: Amphibia, Anura, Discoglossidae *Alytes obstetricans*, phenology, biometry, clutch size, habitat preferences, species association, limestone quarry areas, predation, species decline.

Zusammenfassung

Es werden Beobachtungen zur Phänologie, Biometrie und zum Populationsaufbau der Geburtshelferkröte vorgestellt, die 1999 und 2000 an einem Amphibienfangzaun rund um ein Abgrabungsgewässer sowie an einem Ersatzgewässer in einem Kalksteinbruch in Wuppertal ermittelt und 2001 durch weitere Daten ergänzt wurden.