

Bilanz eines Langzeitmonitorings von 1985–2019 an einem Amphibienfangzaun in Hattingen (NRW)

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Taking stock of a long-term monitoring from 1985–2019 at an amphibian fence in Hattingen (NRW)

This study reports on the results of 35 years of long-term monitoring at a mobile amphibian fence erected annually between 1985 and 2019 in the Felderbach valley in Hattingen (NRW). The study area is located at about 110 m a. s. l. in the outskirts of the city of Hattingen at the northern edge of the south-westphalian mountainous region. On a long-term average, the 230 m long trapping fence was erected on 1.3. and built off after a standing time of 39 days. Seven amphibian species with a total of over 100,000 migrating specimens were recorded at the fence. Quantitatively, the common toad (*Bufo bufo*) dominated with > 85 % of the records, while the palmate newt (*Lissotriton helveticus*) and the grass frog (*Rana temporaria*) were already much rarer with 9.5 % and 3.5 %, respectively. Other species recorded were Alpine newt (*Ichthyosaura alpestris*), smooth newt (*Lissotriton vulgaris*), and single fire salamanders (*Salamandra salamandra*) and midwife toads (*Alytes obstetricans*). Significant population fluctuations were recorded over the years. Within 8 years, the amphibian population initially increased from about 400 to over 6,000 animals, which then remained at a high level for several years, only to drop again to about 1,000 specimens by 2002. After renewed fluctuations, the population has currently stabilized at about 2,000 specimens. The only species that has noticeably benefited from the protection measures is the common toad, while the populations of the other species are stable or declining compared to the beginning of the project. In retrospect, the question arises as to the proportionality of effort and success of a project in which dozens of people volunteered many thousands of hours, especially since the originally intended construction of a permanent amphibian protection facility is not foreseeable. While the overall conservation successes are sobering, the success of the accompanying environmental education activities is estimated to be all the higher and more sustainable. About 2,000 children were able to gain direct experience of nature at the amphibian fence, which has a deep emotional sustainability and can hardly be achieved in this form by schools or kindergartens.

Key words: Long-term monitoring, amphibian fence, environmental education, *Bufo bufo*, *Lissotriton helveticus*, *Rana temporaria*.

Zusammenfassung

Die Studie berichtet über die Ergebnisse eines 35-jährigen Langzeitmonitorings an einem zwischen 1985 und 2019 im Hattinger Felderbachtal (NRW) alljährlich errichteten mobilen Amphibienfangzaun. Das Untersuchungsgebiet liegt auf ca. 110 m NN im Außenbereich der Stadt Hattingen am nördlichen Rand des südwestfälischen