

# Bestandsgrößen von Grasfrosch–Laichgesellschaften (*Rana temporaria*) im nordwestdeutschen Tiefland – Auswertung von Laichballenzählungen an 448 Gewässern

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## Grass frog (*Rana temporaria*) population sizes in the lowland of North-western Germany – analysis of spawn clump countings at 448 breeding sites

Counting spawn clumps is a well proved method for quantifying grass frog populations. Between 1981 and 1996 in this way 448 spawning sites of the grass frog in North-western and Western Lower Saxony were investigated. The results are represented and analysed statistically. For this purpose, four different completely surveyed areas (UG 1 to 4; see fig. 2) are considered separately and as a whole (about 511 km<sup>2</sup>). Small population sizes with 1–10 and 11–20 spawn clumps are dominant (33.3 resp. 22.7%; see tab. 1 and fig. 3) – this is a similar result as shown e.g. by SCHLÜPMANN & GÜNTHER (1996). 19% of all spawning sites have more than 50 clumps, 9% more than 100, 3% more than 200. The biggest crowd of spawn clumps (more than 1 500) was found in a shallow pool of only 25 m<sup>2</sup> in the district of Osnabrück (UG 3; see fig. 2 and 5). The average number of spawn clumps per breeding site amounts to 41; the average number of spawning sites per square-kilometre is 0.8 – that means 33 clumps/km<sup>2</sup>. That value is slightly less in comparison to some other parts of Germany (e.g. Westphalia) – possible reasons are discussed. Within the various areas (UG 1 to UG 4) the results are very heterogeneous. Especially the maritime marshland of area UG 2, which either is settled (city of Emden) or intensively used for farming, obviously is not well suitable for the habitat needs of grass frogs. On the other hand, zones with a high share of meadowland and pools (watering-places for cattle) in the interior country are colonized abundantly by the species.

**Key words:** Amphibia, Anura, Ranidae, *Rana temporaria*, spawning site, spawn clumps, semiquantitative method of data collection, population size (abundance), population density, Lower Saxony.

### Zusammenfassung

Laichballenzählungen, die der Verfasser zwischen 1981 und 1996 an insgesamt 448 Reproduktionsgewässern des Grasfrosches im Nordwesten und Westen Niedersachsens im Rahmen verschiedener feldherpetologischer Untersuchungen durchgeführt hat, werden statistisch aufbereitet und analysiert. Für quantitative und flächenbezogene Auswertungen wird das entsprechende Datenmaterial von vier flächendeckend kartierten Teilarealen (UG 1–4; vgl. Abb. 2) mit einer Gesamtfläche von ca. 511 km<sup>2</sup> herangezogen. Die Zuordnung der Laichplätze zu Laichballen-Mengenklassen zeigt eine klare Dominanz kleiner Laichgesellschaften (1–10 sowie 11–20 Laichballen; vgl. Tab. 1 und Abb. 3), was mit den Ergebnissen anderer Erhebungen tendenziell übereinstimmt. Laichballenansammlungen von mehr als 50 Stück sind mit 19% zwar nicht selten, aber auch nicht allgegenwärtig; mehr als 100 Laichballen wiesen 9% der