

Dynamik einer Kammolch-Metapopulation (*Triturus cristatus*) auf militärischem Übungsgelände (Schmittenhöhe, Koblenz):

1. Phänologie, Wettereinfluss und Ortstreue

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Dynamics of a crested newt metapopulation (*Triturus cristatus*) at a military training area (Schmittenhöhe, Koblenz):

1. Phenology, climate impact and pond fidelity

In 1995 and 2001 we studied the phenology of seasonal pond use by a crested newt population (*Triturus cristatus*) inhabiting a military training area (Schmittenhöhe near Koblenz, Rhineland-Palatinate). Newts were detected in eleven out of 25 ponds and individually identified by recording the ventral pigmentation pattern. The total number of individuals recorded was 168 in 1995 and 347 in 2001 and that for each pond varied between 1 and 210 per study period. Newt frequency per census fluctuated between 0 and 54. The operational sex-ratio was always close to 1. Weather sex-specifically influenced newt abundance. However, fluctuations of temperature and precipitation accounted for only 19.4 % (1995) and 36.9 % (2001) of the total variance in male frequency and for 0 % (1995) and 16.5 % (2001) in the variance of female frequency. In males, frequency depended mainly on the precipitation two days before census, whereas in females temperature one or two days before census had a low influence. The effect of climate on frequency differed also qualitatively between the years. In 1995, the frequency of newts within the ponds increased following rainfall and rising temperature, whereas in 2001 frequency increased following drought and falling temperatures. Extended aquatic residence of males negatively affected body mass, whereas most females regained the body mass recorded before spawning at the end of the aquatic season. None of the individuals which were registered in 1995 was recaptured in 2001. The rate of inter-pond migrations during one study period was low (1.3–9 % of individuals). Thus, the crested newts of the Schmittenhöhe form a metapopulation consisting of three local populations (the western one became extinct before 2001) which interact mainly by the exchange of first breeders.

Key words: Amphibia, Urodela, Salamandridae, *Triturus cristatus*, phenology, local climate, frequency in ponds, migration.

Zusammenfassung

In den Jahren 1995 und 2001 untersuchten wir die Phänologie der saisonalen Gewässernutzung von Kammolchen (*Triturus cristatus*) auf einem Standortübungsplatz der Bundeswehr (Schmittenhöhe bei Koblenz, Rheinland-Pfalz). Molche wurden in 11 von 25 Tümpeln nachgewiesen und individuell anhand ihres ventralen Fleckenmuster identifiziert und registriert. Die Gesamtzahl der gefangenen Individuen war 168 im Jahr 1995 und 347 im Jahr 2001. Pro Tümpel und Jahr wurden zwischen 1 und 210 Tieren registriert. Die Anzahl der Tiere (= Häufigkeit), die pro Zensus in den untersuchten Tümpeln gefangen wurden, variierte zwischen 0 und 54. Das operationale