

Habitatnutzung von Amphibien in einem industriellen Quarzsand-Tagebau (Frechen, Nordrhein-Westfalen)

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Habitat selection of amphibians in a silica sand strip mine (Frechen, North Rhine-Westphalia)

Amphibian diversity was monitored from March to June 2011 in an extensive silica sand strip mine at Frechen (Northrhine-Westphalia, Germany) to document habitat use and local distribution of species. The strip mine includes three structurally distinct habitat types, an old-growth deciduous forest (about 130 years), the actual mining area and the recultivated former mining area with lakes and deciduous forests of up to 50 years. We detected seven anuran and three urodele species, all reproducing in the study area. Besides the expected forest-dwelling species such as *Bufo bufo*, *Rana temporaria*, *Rana dalmatina*, *Lissotriton vulgaris*, *Ichthyosaura alpestris* and *Salamandra salamandra* the thermophile water frogs *Pelophylax lessonae* und *Pelophylax esculentus* and the regionally rare pioneering toads *Epidalea [Bufo] calamita* and *Bufo [Bufo] viridis* were abundant. The most species-rich habitat was the recultivated area, followed by the mining zone which was mainly inhabited by natterjack toads and green toads. The old-growth forest, in contrast to the other habitats, lacked permanent breeding ponds and therefore was used mainly for foraging and hibernation. Still, it was occupied by a small population of *Salamandra salamandra* reproducing in a temporary pond, allowing successful reproduction only in wet years. Within the next 45 years, this population in the old growth forest will be destroyed by mining. Therefore, translocations of salamander larvae from the old-growth forest to the eldest forests of the recultivated area have been taking place since 1987. Our study indicates that these translocated salamanders were probably successful in establishing a reproducing population. Thus, there is a good chance that the local salamander population will survive the final destruction of the old growth forest by mining.

Key words: Amphibian diversity, recultivation, secondary habitat, pioneering species.

Zusammenfassung

In einen Quarzsandtagebau in Frechen, Nordrhein-Westfalen, wurde von März bis Juli 2011 ein fünfmonatiges Monitoring (Gewässernutzung, nächtliche Transektbegehungen) durchgeführt, um das Vorkommen und die Verbreitung der dort heimischen Amphibien zu dokumentieren. Besonderes Augenmerk lag hierbei auf der Nutzung der drei strukturell unterschiedlichen Teilgebiete Altwald (ca. 130 Jahre alter Laubmischwald), Abbauzone und Rekultivierung mit Tagebaufolgeseen und maximal 50 Jahre alten Forsten. Das Gebiet bot insgesamt sieben Anurenarten und drei Urodelenarten Lebensraum, alle Arten reproduzierten auf dem Betriebsgelände. Neben vorwiegend waldbewohnenden Arten wie *Bufo bufo*, *Rana temporaria*, *Rana dalma-*