

## Die Salamanderpest und ihr Erreger *Batrachochytrium salamandrivorans* (*Bsal*): aktueller Stand in Deutschland

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### The salamander plague and its pathogen *Batrachochytrium salamandrivorans* (*Bsal*): current status in Germany

The emergence of the chytrid fungus *Batrachochytrium salamandrivorans* (*Bsal*) represents a dramatic new threat to European amphibians. This skin pathogen causes skin lesions and ulcerations in European salamanders, eventually causing their death. *Bsal* first emerged in the Netherlands and Belgium where it caused mass mortality in populations of fire salamanders (*Salamandra salamandra*). As the affected sites were situated at less than 10 km distance from the German border, the occurrence of the pathogen was also to be expected in the adjacent Eifel region in Germany. Monitoring work to elucidate the possible occurrence of *Bsal* in Germany was started in 2014 by the universities of Trier and Braunschweig, along with the Biological Stations in Düren and Aachen. Salamanders and newts were systematically swabbed and screened for *Bsal* in the Northern (in the state of North Rhine-Westphalia, NRW) and Southern Eifel (Rhineland-Palatinate, RP). The sampling was complemented by 186 fire salamander swabs from other parts of NRW, Lower Saxony and Thuringia. While *Bsal* could not yet be detected in 2014, positive individuals were found at no less than four sites in the Northern Eifel in 2015. This number increased in the Northern Eifel to ten in 2017, distributed over almost the entire study region. At three further sites with formerly large fire salamander populations, almost no individuals could be observed in the study period, providing evidence for drastic declines. Besides fire salamanders, *Bsal*-infected individuals were also found for all newt species in the Northern Eifel and adjacent areas north of it (*Ichthyosaura alpestris*, *Lissotriton helveticus*, *L. vulgaris*, *Triturus cristatus*), partly in sites outside of the range of fire salamanders. In the Southern Eifel, no *Bsal*-positives were detected, but at numerous sites where fire salamander populations had been recorded in the 1990s, neither adults nor larvae could be found. Furthermore, in 2017, a second outbreak was confirmed around the city of Essen (in NRW, but > 70 km from the Eifel), including massive fire salamander mortality events, and it is unknown how the pathogen has reached this area. Clearly *Bsal* is on its way to become one of strongest and most imminent threats to the amphibian diversity of Europe. By expected range expansions from its current nuclei in the Netherlands, Belgium and Germany, but also driven by amphibian imports from its probable native range in Asia, this fungus might well