
RANASPAIN

<p style="color: rgb(210, 45, 64); font-size: 22px; text-align: center;">UN SDGs</p>



<p style="color: rgb(210, 45, 64); font-size: 24px;">Barbora Thumsová</p>

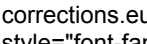
<p style="color: rgb(210, 45, 64); font-size: 20px;">Origin and emergence of ranavirosis in two highly endangered species in Spain</p>

<p style="color: black; font-size: 18px;">Faculty of Science</p>

<p style="color: black; font-size: 18px;">Asociación Herpetológica Española</p>

Emerging diseases pose a serious threat to amphibian populations worldwide. Mountain amphibians are particularly vulnerable due to their isolation, exposure to extreme conditions, and the effects of climate change. Over the past two decades, viruses of the *Ranavirus* genus (Rv) have caused mass mortality and population declines in protected areas across Europe. However, their origin, patterns of emergence, and long-term consequences for vulnerable amphibian populations remain poorly understood. This project will investigate the emergence and spread of Rv in two Spanish national parks, Ordesa y Monte Perdido and Sierra de Guadarrama, where recent outbreaks have affected two threatened amphibian endemics of Iberia and the Pyrenees: *Rana iberica* and *Rana pyrenaica*. These species show signs of increasing Rv prevalence; however, basic data on their population size, disease history, and epidemiology are lacking. This project combines field monitoring with molecular diagnostics, whole-genome sequencing, and laboratory experiments to address these gaps. Samples of amphibians and fish from the field and museum collections will be analyzed to reconstruct the timeline of Rv emergence and to assess the role of introduced salmonids in its spread. Population size will be estimated using mark-recapture models, and infection patterns will be analyzed across time, species, and environments. A temperature-controlled experiment will test how thermal shifts affect infection and mortality. The goal is to identify conditions that reduce disease risk in wild and captive settings. In collaboration with the Spanish Herpetological Society, the results will be translated into monitoring protocols, mitigation strategies, and policy guidance to support the conservation of these threatened amphibians and improve the response to emerging wildlife diseases.

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 **N.B.** Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.