Assessment and prospects for the impact of invasive fish on native European amphibians

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The emergence of invasive species presents significant threats to native biodiversity, aggravated by climate change and human activities. Particularly concerning is the transcontinental spread of invasive predatory fish species like *Perccottus glenii* and *Lepomis gibbosus* into European wetlands, local freshwater biodiversity. To assess the potential impacts by 2050 and 2090 of these predatory fish on European newts, we conducted GIS modeling based on standard Species Distribution Models (SDMs). Our models forecast: 1) an increase in the range of the two thermophilic invasive fish species; 2) significant declines in most native amphibians' natural ranges by 2090, influenced by invasive predatory fish; 3) more specifically for native European newts (*Triturus cristatus & Lissotriton vulgaris*), higher loss in their breeding habitat when coexisting with the invasive fish, due to an increase in habitat overlap with invasive *P. glenii* in Eastern Europe (44% to 66% by 2090, respectively). Field observations reveal that these predators injure adult newts and consume their eggs and larvae, contributing to population declines of protected amphibian species. Consistent with our findings, field monitoring in Latvia and Ukraine confirms decreased newt occurrences where these alien fishes expand. Creating Geographically Isolated Wetlands (GIW) is crucial for amphibian conservation, as they harbor greater diversity and abundance while preventing predatory fish expansion. Urgent action is needed to protect amphibians, particularly newts, through reconstruction of GIW and simultaneous control of invasive predators. We thank for their support the projects EMYS-R (https://emysr.cnrs.fr) under the BiodivRestore ERA-NET Cofund (GA N°10100377), PAUSE (ANR-23-PAUK-0074), Mobile complex 16-00-F02201-000002 and Nr.lzp-2021/1-0247.