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Project Title: How fires affect tadpoles in a Brazilian protected area?

From January to June, I was working on the review article for my doctorate. This is the summary of the article that is under review.

Effect of fire and water contaminants on the morphology, survival, development, and performance of tadpoles – a systematic review

Abstract

The use of fire and contaminants in the vicinity of aquatic systems has the potential to induce significant alterations in the properties of this water resource, consequently affecting the life of aquatic organisms such as anuran larvae. Here, we conducted a comprehensive review of studies that assessed tadpole responses to both the effects of fire and water contaminants, specifically pesticides. Our objectives were: (1) to analyze how fire and water contaminants affect tadpole morphology, survival, development, and performance; and (2) to examine the methods used in the selected studies. Article retrieval was performed using combinations of keywords on two electronic databases (Scopus and ScienceDirect), filtering according to the study's scope. We found 1021 articles, of which 50 were selected based on their relevance to the review's theme. Of the 50 studies, 34% are from South America, 30% from Europe, 14% from Asia, 10% from North America, 8% from Oceania and 4% from Africa. The vast majority of studies, seventy-eight percent, reported statically significant effects of contaminants on tadpoles, with thirty-eight reporting negative effects. The contaminants Glyphosate and Atrazine were the most frequently studied. The morphology was the biology attribute most affected by these impacts. In total, thirty-eight tadpole species were examined, with the most widely studied species being *Xenopus laevis*, *Bufo bufo*, and *Boana pulchella*. Our results highlight the need for restrictions on contaminant levels in aquatic ecosystems and for more studies evaluating the effects of these environmental impacts on amphibian species, both in their larval and adult stages.

Keywords: Anuran larvae. Wildfire. Contaminants. Morphology. Survival. Development.