
Are stormwater ponds partitioning measures effective and relevant for amphibians?

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Abstract

With roads construction, stormwater ponds are created in a sanitation purpose, water treatment, and containment of any accidental pollution. These environments are not intended to serve as habitats; hence partitioning measures are installed to prevent animals to access to them. In a context of intensive farming landscape, land consolidation has led to the removal of most wetlands. Moreover, as basins are potential habitats for species deprived of their environments, it is not rare to find animal communities into the basins, including amphibian, particularly sensitive to pollutants.

The effectiveness and relevance of partitioning measures designed to stop amphibians from entering the basins is thus questioned regarding their impact on amphibians development.

The richness and abundance of amphibians were collected using POPamphibian protocol on more than eighty stormwater and natural ponds. Explanatory variables are water physico-chemical parameters including levels of pollution, surrounding land use (like suitable habitats and corridors) and characteristics of basin including partitioning measures.

Amphibians have been found in most basins at different stages of development, so partitioning measures do not seem effective. No effect of pollution level was observed. The surrounding environment is the best predictive variable of presence of breeding. However, it is difficult to attribute the decline of the offspring to pollution or natural predation pressure.

In conclusion, partitioning measures are neither effective nor relevant in the context of an intensive farming landscape. We invite roads manager to remove partitioning measures from stormwater ponds or/and to create substitution puddles close to them.

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