

PST19 - Local and landscape drivers of pond-breeding amphibian diversity at the Northern Mediterranean

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Most amphibian species are highly dependent on available aquatic habitats and surrounding environments. In this study, we determined which factors influence amphibian diversity in a Mediterranean ecosystem defined by a mosaic of natural areas and traditional farmland. We sampled 60 temporary and permanent ponds in northeastern Portugal, determining amphibian species richness and assemblage composition. Within local (5 and 50 m buffers) and landscape (500 m buffer) scales, we analysed the relationship between these measures and environmental factors describing wetland characteristics, surrounding land cover, habitat heterogeneity, and local road density. Both species richness and assemblage composition were mainly influenced by local factors. Species richness had a positive correlation with pond hydroperiod, habitat heterogeneity and scrub cover within 5 m, and was negatively correlated with bare ground coverage and road density within 50 m. Coniferous forest was the only variable explaining species richness at 500 m, with a positive correlation. Hydroperiod was the most relevant factor determining assemblage composition, along with aquatic vegetation and some land cover variables. Traditional farmland did not negatively impact amphibian diversity, and instead might provide habitat heterogeneity and breeding sites for amphibians. Our results support the view that biodiversity can coexist with traditional farming activities and provide practical information for amphibian conservation and habitat management. In similar landscapes, efforts to maintain the diversity of amphibian communities should focus on preserving wetlands and local habitat.