

Colonization and abundance of amphibians in recently created temporary ponds in a Mediterranean region.

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ABSTRACT

Wetland loss, fragmentation and isolation of populations, among other factors, have been responsible for losses of amphibians at local and regional scales. 33% of Mediterranean amphibian species are currently in various levels of decline. Many of these species depend on temporary ponds for breeding, egg-laying or the juvenile stage of development. Restoration of destroyed ponds and creation of new water bodies was suggested as a good measure to prevent local population decline and to sustain species at regional scale favoring the maintenance of a metapopulation structure. To evaluate the effectiveness of these actions in a Mediterranean landscape nine ponds (3 recently created ponds; 6 reference) in Girona (NE Iberian Peninsula) were monitored during the 2007 breeding season to assess colonization of recently created wetlands by amphibians, compare the amphibian fauna to that reference wetlands and document the effectiveness of new habitats. New ponds were surveyed with a continuous drift fence equipped with pitfalls and funnel traps which completely encircle the ponds. This methodology not only allows us to evaluate amphibian colonization if not also estimate amphibian diversity, abundance, population structure and potential contribution of temporary pond-breeding amphibians to secondary production and to the transfer of matter and energy between aquatic and terrestrial habitats in seasonal Mediterranean ponds. Six amphibian species colonized recently created pond, whereas a total of 11 species were detected in reference ponds. The most abundant species in new ponds were *Bufo calamita* and *Discoglossus pictus*, typical opportunists and temporary pond-breeders, showing a great capacity of colonization of these habitats and with abundant and well structured populations. The results of this study indicate that new temporary wetlands are valuable habitat for at least a subset of the amphibian fauna of this region their first year. Future studies can give information about colonization of other amphibian species during the maturation ponds process when incorporating floating, submerged or emergent plants species required for some amphibian species, and how amphibian community succession is doing during wetlands maturation.