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CONTRASTING INTRA-ANNUAL PATTERNS OF SIX BIOTIC GROUPS WITH DIFFERENT DISPERSAL MODE AND ABILITY IN MEDITERRANEAN TEMPORARY PONDS

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The temporal patterns of six biotic groups (amphibians, macroinvertebrates with active and passive dispersal mode, microcrustaceans, vascular plants and phytoplankton) and the responses of each biotic group to environmental variation (water, pond and landscape variables) were studied in a set of Sardinian temporary ponds. These biotic groups widely differed in dispersal ability and dispersal mode (active vs. passive). We predicted that both their temporal patterns and their underpinning environmental controls would be contingent on each group's dispersal capacity. Six temporary ponds were sampled three times: at the beginning (January), middle (March), and end (May) of the hydroperiod. For each biotic group, temporal variation in composition, species richness, among-pond similarities, and number of typifying taxa was evaluated. Moreover, a beta diversity partitioning procedure was used to obtain the relative contributions of the replacement and richness components to overall beta diversity. Finally, the effects of water, pond, and landscape variables on composition and taxa richness were analysed for each group. Different temporal patterns were observed among the studied biotic groups, and in some (but not all) cases these differences were explained by dispersal ability. Similarly, we observed that environmental controls were group-specific.