

**Schiel, F.-J. & R. Buchwald (2015): Hatching phenology of Odonata species inhabiting temporary and permanent water bodies (Odonata: Lestidae, Aeshnidae, Libellulidae) - International Journal of Odonatology 18 (2): 1-19.**

### **Abstract**

The hatching phenology of 15 Odonata species was studied under seminatural conditions to find out how the hatching modes of typical species of summer dry temporary waters (vernal ponds) differ from those of species inhabiting both permanent and temporary waters. We attempt to answer the following questions. (1) Do vernal pond species hatch earlier in the year than congeneric permanent water species? (2) Can hatching in vernal pond species be delayed under unsuitable environmental conditions, like drought? (3) Can eggs of vernal pond species survive for more than one year? Larvae of vernal pond species, *Aeshna affinis*, *Lestes barbarus*, *L. dryas* and *Sympetrum flaveolum*, hatched significantly earlier than their permanent water counterparts *A. mixta*, *L. sponsa*, *L. virens*, *L. viridis*, *S. danae*, *S. depressiusculum*, *S. meridionale*, *S. sanguineum*, *S. striolatum* and *S. vulgatum*. Only one vernal pond species, *L. macrostigma*, did not show this early hatching. In both vernal pond and permanent water species hatching succession of different clutches of each species varied, which may reflect genotypic differences. In both vernal pond species and permanent water species hatching was delayed when eggs were kept on moist filter paper - simulating drought - instead of being put into water. The hatching success of two vernal pond species and of four out of five studied permanent water species was reduced significantly by keeping eggs on moist filter paper. Survival of eggs for more than one year could not be proved under temperature conditions resembling those in nature.