

**Abstract of Sébastien Ficheux' PhD Thesis,
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Population dynamics and genetics of European Pond Turtle (*Emys orbicularis*)

Dispersal, characterized by the movements of individuals in space leading to gene flows, allows populations to connect. The study of dispersal has become of essential importance to predict the consequences of global changes on population structures and dynamics. Species with limited dispersal, such as Chelonians, are particularly threatened by these phenomena. Our study analyzed the dispersal of the European Pond Turtle (*Emys orbicularis*), in decline in Europe, in a context of fragmented habitats and determined the causes of this behavior through the analysis of population dynamics and genetics. Our results demonstrate that the slow generation time in *Emys orbicularis* (about 12 years) may slow the genetic erosion by drift. This slow erosion is accentuated with large populations even in highly fragmented habitats. At the same time, selection would have favored philopatry in females in habitats with few nesting site and low density of individuals because they have the advantage of territoriality. In contrast, the cost of dispersal decreases for males because this behavior reduces the chances of inbreeding. The European Pond Turtles seem very sensitive to intra-specific competition. The relaxation of adult density-dependence allows for a significant recruitment of juveniles. This dynamic promotes a surprisingly rapid response of the population after a major disturbance, especially given that Chelonians are long-lived animals with a late age of maturation and are expected to have a slow rate of resilience adaptation.

Keywords: capture-mark-recapture, conservation, density-dependence, dispersal, dynamics, *Emys orbicularis*, fragmentation, genetics, metapopulation.

Contact: sebastien.ficheux@hotmail.fr