

Rapid range extension of the Ponto-Caspian amphipod *Dikerogammarus villosus* in France: potential consequences

L. Bollache^{1*}, S. Devin², R. Wattier¹, M. Chovet³, J.-N. Beisel², J.-C. Moreteau² and T. Rigaud¹

With 2 figures and 1 table

Abstract: Non-indigenous species are increasingly recognized as altering local communities in newly colonized areas. In some north European freshwater systems, the Ponto-Caspian invasive crustacean *Dikerogammarus villosus* (Amphipoda) is implicated to have such an effect, with general monitoring of its progress and general impact required. The present study contributes to this monitoring. *D. villosus* was observed in 2003 in all the major French rivers prospected (i. e. Rhine, Meuse, Moselle, Saône, Rhône, Seine, and Loire), a European region previously overlooked for its colonization. This species was also detected in some tributaries of the rivers Saône and Seine, and in Geneva Lake. The dynamics of this colonisation, inferred from samples made at different dates, show a rapid expansion westward, from its first appearance in the Saône in 1997. The colonised rivers are connected with the more important French harbours, which may facilitate future invasion of new countries. In two sites, *D. villosus* rapidly became the dominant crustacean species after its appearance. A comparison of the amphipod fauna between 2003 and ancient surveys also shows that some native species tend to disappear in the East of France. These data suggest an ongoing homogenisation process of amphipod assemblages.

Key words: invasions, *Dikerogammarus villosus*, gammarids, French hydrosystem.

¹ **Authors' addresses:** Equipe Ecologie Evolutive, UMR CNRS 5561 Biogéosciences, Université de Bourgogne, 6 boulevard Gabriel, 21000 Dijon, France.

² Equipe de Démécologie, UR LBF, Université de Metz, Campus Bridoux, avenue du Général Delestraint, 57070 Metz, France.

³ DIREN Centre, Service de l'eau et des milieux aquatiques, 5 avenue Buffon, BP 6407, 45064 Orléans Cedex 2, France.

* Author for correspondence; E-mail: loic.bollache@u-bourgogne.fr