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Yan Wang and **Junping Shi***, Department of Mathematics, College of William & Mary, Williamsburg, VA 23187-8795. *Dynamics of a Reaction-Diffusion Benthic-Drift Model with Strong Allee Effect Growth.*

The dynamics of a reaction-diffusion-advection benthic-drift population model that links changes in the flow regime and habitat availability with population dynamics is studied. In the model, the stream is divided into drift zone and benthic zone, and the population is divided into two interacting compartments, individuals residing in the benthic zone and individuals dispersing in the drift zone. The benthic population growth is assumed to be of strong Allee effect type. The influence of flow speed and individual transfer rates between zones on the population persistence and extinction is considered, and the criteria of population persistence or extinction are formulated and proved. (Received September 14, 2019)