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Dispersal heterogeneity and the spreading speeds of marine invasions.

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We propose a structured integro-difference equation model for an invasive marine species with a pelagic larval stage and examine the role of dispersal heterogeneity on the spreading speed. The spread of the green crab up the northwest coast of the Atlantic is used as a case study. We find that the relationship between spreading speed and demographic and dispersal parameters is similar to the relationship found in Fisher's equation. We also find that temporal variation in dispersal results in a faster spread rate than predicted by a time-averaged dispersal kernel. This is joint work with Lin Wang, Myriam Barbeau and Ali Gharouni.

Primary author: Prof. WATMOUGH, James (University of New Brunswick)

Presenter: Prof. WATMOUGH, James (University of New Brunswick)

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