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B. Veena Shankara N. Rao*, Department of Mathematics, Mail Stop 3368, Texas A&M University, College Station, TX 77843. *A spatiotemporal population dynamics model to track density and average mass of brown shrimp.*

Structured population models are used for modeling changes in the density of individuals over time and other factors such as age, mass, developmental stage and space. Mass is a particularly useful measure of condition of a population. Our approach to modeling mass dependent population dynamics introduces mass as an additional dependent variable. We develop a parabolic-hyperbolic system of coupled nonlinear partial differential equations to track density and average mass of the population at location 'x' and time 't'. Our model provides an insight into the identification of key processes controlling populations over various space and time.

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