1003-92-1121   **Shandelle M. Henson*** (`henson@andrews.edu`), Department of Mathematics, Andrews University, Berrien Springs, MI 49104, and **James L. Hayward** and **Smruti P. Damania**.
Modeling the Diurnal Distribution and Behavior of Marine Birds and Mammals.

Marine birds and mammals move between various habitats during the day as they engage in behaviors related to resting, sleeping, preening, feeding, and breeding. The per capita rates of movement between these habitats, and hence the habitat occupancy dynamics, often are functions of environmental variables such as tide height, solar elevation, wind speed, and temperature. If the system recovers rapidly after disturbance, differential equation models of occupancy dynamics can be reduced to algebraic equations on two time scales. Identification of environmental factors that influence movement between habitats requires time series census data collected in both the absence and presence of disturbance. (Received October 04, 2004)