1086-92-2076   **Brianna G. Payne*** (`brpayne@ucollege.edu`), 3800 South 48th Street, Jorgenson Hall 317A, Lincoln, NE 68506, **Shandelle M. Henson** (`henson@andrews.edu`), Berrien Springs, MI 49104-0350, **James L. Hayward** (`hayward@andrews.edu`), Berrien Springs, MI 49104-0410, **Libby C. Megna**, Berrien Springs, MI 49104-0410, and **Susana R. Velastegui Chavez**, Santa Domingo, Ecuador. *Temporal Dynamics of Galapagos Marine Iguana (Amblyrhynchus cristatus) haulout.* Preliminary report.

Galápagos Marine Iguanas (Amblyrhynchus cristatus) briefly forage in marine habitats but spend their remaining time hauled out on land. A wide range of diurnal activities, from social and thermoregulatory behaviors to sleep and food processing, occurs during haulout. To understand the dynamics of haulout and foraging in relation to environmental factors, we fit compartmental models derived from ordinary differential equations to field data from two sites on Cabo Douglas Isla Fernandina. The best haulout model accounts for 77–80% of observed variability at one site and includes the environmental variables solar elevation, heat index, tide height, and relative humidity. Using only the predictable variables solar elevation and tide height, the model still accounts for 72% of system variability. Although the environmental variables that predict haulout are not identical across sites, the methodology employed is a vital tool for parsing out otherwise unclear relationships between organisms and their environments. In the face of global change, the employment of these investigative tools from mathematics could positively impact conservation measures developed for this endemic species. (Received September 24, 2012)