

ABSTRACT**Seasonal, lunar and tidal variation in reproduction of the endangered
hawksbill marine turtle (*Eretmochelys imbricata*) in Barbados**

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Seasonal, lunar and tidal variation in reproduction of the hawksbill marine turtle (*Eretmochelys imbricata*) in Barbados were investigated over the 4-year period, 1989 to 1992. Nesting seasonality was not related to either rainfall or wind velocity, but most nests were laid in months when air temperature was highest. Temperature may be a proximate cue triggering reproduction, but may also directly influence reproductive success, since there was a weak tendency for hatching success to be higher in warmer months. Hatching seasonality was not strongly influenced by either temperature or rainfall, but most hatching occurred in months of lowest wind velocity. Lower wind velocity may increase hatchling survival if calmer surface waves enhance hatchling mobility and foraging efficiency. Temperature may directly influence hatching success but may also control the timing of nesting such that most hatching occurs when wind velocities are lowest and hatchling survival highest. More nesting occurred near first and last quarter moons (neap tides) than near full and new moons (spring tides), but

hatching frequency did not differ significantly between lunar phase. More nesting and hatching occurred by night than by day, and both nocturnal nesting and nocturnal hatching occurred more frequently before than after midnight. Neither nesting nor hatching occurred more frequently around either diel high or low tides. It is suggested that nesting in marine turtles may only show diel tidal periodicity at locations and lunar phases which are characterised by extreme diel tidal ranges.