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Short communication

# Competitive interactions between artificial lighting and natural cues during seafinding by hatchling marine turtles

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### Abstract

Artificial lighting disrupts the nocturnal orientation of sea turtle hatchlings as they crawl from their nest to the ocean. Laboratory experiments in an arena were used to simultaneously present artificial light (that attracted the turtles toward "land") and natural cues (a dark silhouette of the dune behind the beach) that promoted "seaward" orientation. Artificial lighting disrupted seaward crawling in the presence of low silhouettes, but not high silhouettes. Low silhouettes provided adequate cues for seaward crawling when the apparent brightness of artificial light was reduced. Based upon these results, we postulate that artificial light disrupts orientation by competing with natural cues. Current restoration practices at nesting beaches emphasize light reduction. However at many sites some lights cannot be modified. Our results suggest

that pairing dune restoration (to enhance natural cues) with light reduction (to the extent possible) should significantly improve hatchling orientation, even at nesting beaches where lighting cannot be entirely eliminated.



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## Keywords

Sea turtle; Orientation; Photopollution; Habitat restoration

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