Leatherback Hatchling Fitness

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Objective

- To determine what factors affect leatherback hatchling fitness on land.

Introduction

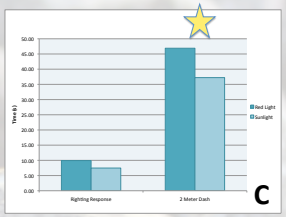
- Leatherback hatchling fitness on land is essential for their success in entering the ocean without being predated.
- Two ways fitness on land may be measured are by how fast hatchlings crawl, as well as how fast their righting responses are when they are flipped onto their carapaces.
- Hatchlings from certain nests may have slower righting response times along with slower crawl times, both of which would increase the odds of predation and hinder the success of hatchlings reaching the ocean.

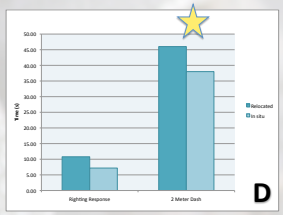
Methods & Materials

- Leatherback hatchlings were collected from *in situ* (natural) and relocated nests as part of a long-term project at Sandy Point National Wildlife Refuge.
- A circle was drawn in the sand with a two-meter radius. Hatchlings were released at the center and timed for a two-meter crawl (Fig. A).
- A standardized divot was made in the sand, where hatchlings were placed on their carapace. Time was recorded from the moment each hatchling was released until it righted itself and began crawling (Fig. B).

Results

- Hatchlings crawled significantly faster during sunlight tests than after dark using red lights (Fig. C)(Student's *t*-Test, $t = 2.70$, df = 37, $p = 0.010$). Righting response was not affected by light source.





- Hatchlings from in situ nests crawled significantly faster than hatchlings from relocated nests (Fig. D) (Student's *t*-Test, $t = 2.22$, df = 36, $p = 0.033$). Righting response was not affected by nest type.

Discussion

- In general, hatchlings tested under natural light conditions were faster than those tested under artificial light conditions.
- Hatchlings from natural nests were faster and righted themselves more quickly than those from relocated nests, thus indicating that leaving nests in a natural location may benefit hatchling fitness.

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