Schauwecker, Paul, "Improved Hatching Success of Olive Ridley Turtle (*Lepidochelys olivaceae*) Nests in Sun-Sterilized Beach Sand." Advisor: Michael McCoy. Colorado College. 2010. 18pp.

Hatching success of olive ridley turtle nests at arribada beaches is generally very low, and it is thought that bacteria and fungi reduce hatching success. I investigated the increase of hatching success of clutches placed in sterilized beach sand compared to untreated beach sand, which has greater concentrations of bacteria and fungi, during the dry season at Playa Ostional, an arribada beach on the Nicoya Peninsula, northwestern Costa Rica, between March and May 2010. All clutches were placed in a hatchery to cool the sand temperature sufficiently for embryonic development. Sand temperature within the hatchery was significantly cooled using black plastic as a shading material ($P=0.0012$), adding windows to the hatchery to increase airflow ($P <0.001$), and high tide inundation ($P<0.001$.) Analysis currently shows mean embryonic development of clutches in sterilized sand was greater than clutches in control sand ($P=0.0027$). Results also indicate percent hatching success was greater in sterilized beach sand than in control sand, but not significantly so (0.3608). Conclusions regarding embryonic development and hatching success in sterilized sand compared to untreated beach sand are currently limited due to small sample size. Further data will be taken in the coming week to provide more significant results regarding hatching success and embryonic development. If sun-sterilized sand is indeed shown to have higher hatching success than untreated beach sand, the Ostional community could sun-sterilize a portion of the beach to see if hatching success of *in situ* nests also increases. They could build on this study by using fungicides to further sterilize the beach sand. Simply put, in order to increase hatching success on marine turtle nesting beaches worldwide, conservationists should lower bacterial and fungal concentrations of beach sand by sterilizing it.