Nesting site variability of The American horseshoe crab (*Limulus polyphemus*) and implications egg development within Long Island sound.

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Limulus polyphemus, the American horseshoe crab, is a foundational species in their environment and plays a vital role in their ecosystems. The population of *L. polyphemus* in Connecticut has dramatically declined within the last twenty years due to overharvesting and loss of spawning habitat. Research regarding horseshoe crab nesting habits and the development of clutches must be conducted to better conserve this species. Horseshoe crabs have been observed nesting on rocky beaches, sandy beaches, and in marshes, so research was conducted to determine how habitat affects horseshoe crab egg development. We hypothesized that there would not be a significant difference in egg development based off nesting habitat. Two different habitats were surveyed in Long Island Sound, marsh and sandy beaches from June 2022 through July 2022. Nests were marked and a small portion of the clutch was taken ~7 and ~21 days after they were laid. Preserved eggs were observed for physical traits including color and size to track the development. Initial results show significantly larger eggs in marsh habitat early in development, but no difference in egg size later in development. More research and continued monitoring are needed to further understand how habitat might impact horseshoe crab egg development.

Key terms: Horseshoe crab, nesting habitat, egg development