Dispersal of American Horseshoe Crab (*Limulus polyphemus*) Larvae

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**Abstract**

Knowledge of early life history stages of the American horseshoe crab, *Limulus polyphemus*, is very limited. The goal of this study was to monitor horseshoe crab larval abundances over multiple tidal and lunar cycles to better understand larval dispersal patterns. Larvae were collected at night using a plankton net and kept in the laboratory to record how many days they stayed in the swimming larval stage. The highest densities of larvae were recorded during ebb tides and around the time of full moon. Most larvae molted into first stage juveniles a week following collection. These results suggest that most of the larvae are swimming downstream, possibly reaching coastal areas, before molting into juveniles. Identifying these settlement areas will be crucial to stock enhancement efforts.

**Objective**

To compare densities of trilobite larvae over tidal and lunar cycles to gain a better understanding of dispersal patterns and potential settlement sites in Great Bay, NJ.

**Trilobite Larvae Densities Change with Tidal and Lunar Cycles**

On average (n=6) density was five times higher during the ebb tide.

75% of larvae (n=178) molted into first juvenile stage within 6-12 days.

**Conclusions**

1. Larvae swimming during ebb tide (downstream) are likely to reach coastal areas before settling as non-swimming juveniles.
2. Larvae collected during full moon were probably from nests deposited a month earlier during peak mating times.
3. Larvae kept in the laboratory had at least one more week in the plankton before settling as juveniles.
4. Studying dispersal patterns could help identify settlement areas. Future work should include collections of larvae in coastal areas to determine if larvae leave the bay.

**References**


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