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The Effect of Predation on the Fecundity of Two Subtidal Snails with Differing Reproductive Strategies

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THE JOHN WESLEY POWELL STUDENT RESEARCH CONFERENCE - APRIL 2006

Poster Presentation P66

THE EFFECT OF PREDATION ON THE FECUNDITY OF TWO SUBTIDAL SNAILS WITH DIFFERING REPRODUCTIVE STRATEGIES

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A great deal of diversity exists in reproductive strategies among gastropod snails. These animals exhibit a variety of reproductive methods including broadcast spawning, release of planktonic larvae, and encapsulation of eggs. Females of Fusitriton oregonensis lay a flat round egg mass that they then guard against potential predators for 7-8 weeks until the eggs hatch as free-swimming veliger larvae. Crawl-away juveniles of Neptunea lyrata hatch 8-12 months after laying from a tall cylindrical egg mass that is not guarded. I tested the effects of predation by urchins (Strongylocentrotus droebachiensis), and two sea star species (Evasterias trochelii and Pycnopodia helianthoides) on these two different egg cases. I exposed egg cases of F. oregonensis to the predators both with the adult snails present and with them experimentally removed. I found that none of the predators consumed any of the guarded egg cases. The urchins, however, had a significant impact on the unguarded egg cases. I performed the same experiment with the naturally unguarded egg cases of N. lyrata. None of the predators consumed any of the egg cases in this experiment. Clearly, the guarding behavior of Fusitriton oregonensis was an important aspect of their reproduction, whereas the egg cases of Neptunea lyrata were likely protected by other methods.