P5 - The effect of predation risk, food availability, and shelters on reproduction of lizards

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Reproductive investment, i.e. the average number of offspring produced by an organism, is one of the fundamental characteristics of a species. Among other things, it predicts a species' resilience to environmental disruption: taxa that produce more offspring are able to recover more quickly from environmental perturbations and survive long-term environmental change. Despite the clear importance of this trait, ecologists do not have a good understanding of the primary drivers shaping the reproductive investment of each species. To answer this question, we compared the reproductive efforts of numerous island populations of the Aegean Wall Lizard (*Podarcis erhardii*), which differed in multiple key environmental characteristics. We tested three hypotheses, namely that reproductive investment (measured as clutch size, clutch volume and mean egg volume) is: 1) positively associated with predation risk ['*Predation Risk Hypothesis*']; 2) positively associated with the presence of reliable vegetation cover that provides shelter ['*Gravid Female Protection Hypothesis*'], and 3) limited by (and hence positively correlated) with food availability ['*Food Limitation Hypothesis*']. Analysis of the data showed strong support for the Predation Risk Hypothesis. The result not only sheds light on which fundamental forces shape reproductive investment in island vertebrates, but can also help set conservation priorities by identifying which populations are most at risk of extinction based on easily quantifiable island characteristics (number of sympatric predator species).