235. INVESTIGATING BIODIVERSITY OF SUBLITTORAL SCIAPHILIC COMMUNITIES IN THE NE AEGEAN SEA, THROUGH THE USE OF A PHOTOGRAPHIC METHOD

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Biogeographical studies greatly depend on the existence of baseline information regarding the distribution and ecological characteristics of the species, communities or habitats under investigation. Existing knowledge regarding the distribution, community composition and structure of sublittoral sciaphilic assemblages (a habitat of high conservation value) is rather limited, especially in the Eastern Mediterranean, mainly due to the inherent difficulties of data collection by means of SCUBA diving. In the effort to enhance current understanding, a quantitative study of the megabenthic species composition of sciaphilic assemblages off Lesvos Island is realized by a non-destructive photographic method. Pictures of randomly placed quadrates (625 cm^2) are taken by means of high resolution digital cameras. The photographs are then analyzed through the use of photoQuad®, a new standalone custom software developed in MatLab environment, which enables processing and management of the photographic material, provides tools for the identification of species, creation of species libraries, estimation of coverage and numerical abundances, and other morphometric measurements. The current work presents preliminary data on the abundance and distribution of the main megabenthic species comprising the sciaphilic communities of this N.E. Aegean area, and introduces an advanced methodological tool that may potentially facilitate future studies on the ecology and biogeography of this difficult to approach habitat.

236. GEOGRAPHIC RARITY AND EXTINCTION RISK: ARE RESTRICTED SPECIES DISPROPORTIONATELY EXTINCTION-PRONE?

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It is commonly accepted that locally restricted (e.g., endemic) species are at greater risk of extinction than are more regionally widespread species. This principle can be true owing to two distinct reasons. First, probabilistically, locally restricted species are more prone to extinction because of a lack of geographic redundancy. In the most extreme case, an endemic species will go extinct if it is extirpated from a single location, whereas more common species will still occur elsewhere if extirpated from a single location. Second, ecologically, locally restricted species may be more prone to extinction because they tend to occur in lower abundances and cannot benefit from rescue effects from other populations. The probabilistic explanation for extinction-proneness is self-evident based on chance, while the ecological explanation suggests that populations of geographically-rare species are disproportionately subject to local extirpation, which leads to disproportionately high extinction rates. It has previously been difficult to disentangle these two explanations. Here, I describe a simulation procedure that can disentangle the roles of probability versus ecology in the extinction of widespread versus restricted species and I apply this to a unique dataset of amphibian extirpations and extinctions. The results suggest that the extinction rates of geographically-restricted species is primarily driven by probability, thus endemic species were not disproportionately at risk of extirpation in this study. In contrast, more common species are driven extinct more frequently than probability would dictate.