

Shifts in phenotypic plasticity constrain the value of seabirds as ecological indicators of marine ecosystems.



Marine ecosystems are critically challenged by human activities, urgently calling for better management practices. It has been proposed that conspicuous top predators such as seabirds may be used as ecological indicators. This approach requires intimate knowledge of relationships connecting seabird parameters to other ecosystem components (i.e., population plasticity, underlined by individual reaction norms), information which remains scarce. Furthermore, if seabirds are to be used as long-term indicators, the strength of the average plastic response in a studied population has to be sustained through time and space. This second aspect has so far been startlingly neglected, although previous studies underline shifts in the plasticity of seabird traits and detail the tools allowing an evolutionary and ecological study of plasticity in bird populations. Building upon these advances, we argue that gradual or sudden spatiotemporal changes in seabird phenotypic plasticity should not be neglected when designing monitoring schemes. We conclude that seabirds are best used as qualitative sentinels, rather than as quantitative indicators.

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