{rokbox title=|Notched box-plots of the differences in the levels of COI nucleotide diversity :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-use-nucleotide-diversity-mitochondrial-gene-as-early-diagnostic-conservation-status-animal-species-petit-marty-et-al-2020-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-use-nucleotide-diversity-mitochondrial-gene-as-early-diagnostic-conservation-status-animal-species-petit-marty-et-al-2020.jpg{/rokbox}

Natalia Petit-Marty, **Maite Vázquez Luis** and Iris E. Hendriks, 2020. **Use of the nucleotide diversity in COI mitochondrial gene as an early diagnostic of conservation status of animal species.**
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Abstract: Species assessed as threatened by the International Union of Conservation of Nature (IUCN) show evidence of declining population sizes. Genetic diversity is lost by this decline, which reduces the adaptive potential of the species and increases its extinction risk in a changing environment. In this study, we collected an extensive dataset of nucleotide diversities in the COI (Cytochrome C Oxidase subunit I) mitochondrial gene for 4,363 animal species assessed by IUCN and found significantly reduced levels of diversity in threatened species of long-lived animal classes. Then, we built up a comparative frame by acquiring the 95% confidence interval (CI) of mean values of COI nucleotide diversity in bootstrapped samples of nonthreatened species. Finally, we tested the comparative frame with data from the endangered bivalve species, *Pinna nobilis*. We conclude that nucleotide diversity in COI is a good proxy for a first evaluation of the conservation status of species populations, where previous knowledge is lacking and census is difficult to perform .

Keywords: adaptive potential, biodiversity conservation, COI DNA Barcode, extinction, genetic diversity, IUCN, *Pinna nobilis*