



Report of the  
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Conservation and research networking on short-beaked common  
dolphin (*Delphinus delphis*) in the Mediterranean Sea

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## Short-beaked common dolphins in the Gulf of Corinth are Critically Endangered

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Cetaceans having restricted ranges and disjunct distributions can become isolated and are especially vulnerable to anthropogenic impacts. Further divergence can occur as groups become resident within discrete and geographically separated subareas. Short-beaked common dolphins *Delphinus delphis* in the Ionian Sea are genetically different from those of other Mediterranean and Atlantic areas, and those living in the Gulf of Corinth (GOC)—a 2,400 km<sup>2</sup> semi-enclosed deep inlet of the Ionian Sea—may have diverged even further. We investigated the status and geographic range of common dolphins in the GOC based on five years (2011–2015) of survey effort from small boats. We used photo-identification and a robust design capture-recapture approach to estimate dolphin abundance based on 60,592 high-resolution digital images. Common dolphins were always found in mixed-species groups with striped dolphins *Stenella coeruleoalba*. Striped and common dolphins averaged 94.5% and 1.6%, respectively, whereas the remaining 3.9% were animals of intermediate pigmentation (likely hybrids). Abundance was estimated as 22 common dolphins (95%CI 16–31), 55 'intermediate' animals (95%CI 36–83), and 1,324 striped dolphins (95%CI 1,158–1,515). Dedicated survey effort totalling 21,435 km yielded no evidence of movements across the entire western quarter of the GOC, which leads to Mediterranean waters through a shallow strait. Common dolphin movements appeared to be limited to the central portion of the GOC, largely within an area of approximately 900 km<sup>2</sup> where waters are 500–900 m deep. Studies conducted since the mid 1990s also produced no records in the shallow westernmost portion of the GOC, or in the adjacent Gulf of Patras and Prokolpos Patron. A population viability analysis incorporating demographic and environmental stochasticity indicated that, within a three-generation time, common dolphins in the GOC are likely to either go extinct or remain below the IUCN Red List threshold of 50 mature animals. Such trend was predicted irrespective of potential negative impacts resulting from hybridisation (e.g. genetic and demographic swamping) or anthropogenic threats (including overfishing, industrial pollution and noise disturbance). Under standard criteria provided by the IUCN Red List to assess extinction risk, common dolphins in the GOC constitute a geographically and otherwise distinct conservation unit (subpopulation) with little or no demographic exchange, which qualifies as Critically Endangered based on 1) small population size (point estimate 22 individuals); 2) limited dispersal and extent of occurrence; 3) reproductive isolation; 4) occurrence within a geographically and ecologically distinct area in which a single threatening event can rapidly affect all individuals; 5) low (<50) predicted abundance of mature animals in a three-generation time; 6) suspected hybridisation with a 60-fold larger population of striped dolphins; and 7) extant anthropogenic impacts. Management action is urgently needed to prevent eradication of common dolphins from yet another part of the Mediterranean Sea—a region where these animals have been classified as Endangered since 2003.