

Dolphin depredation of bottom-set fishing nets in the Gulf of Corinth, Mediterranean Sea

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In the Gulf of Corinth (GOC), a 2,400 km² semi-enclosed embayment in Greece, three odontocete species occur within 11 km of the nearest coast. Striped dolphins *Stenella coeruleoalba* are abundant (1,420 animals, 95%CI 1,275-1,566) and live in mixed groups with 26 short-beaked common dolphins *Delphinus delphis* (95%CI 13-39) and 58 individuals of intermediate pigmentation, indicating hybrids (95%CI 38-79). Additionally, in 2011-2014 we estimated fewer than 40 common bottlenose dolphins *Tursiops truncatus* per year, of which some are transient. We investigated dolphin distribution and interactions with fisheries through (1) boat-based visual surveys totalling 16,289 km; (2) dolphin follows encompassing 1,663 km (296 h); and (3) 98 interviews with small-scale fishers deploying bottom-set nets across 29 ports. Based on survey data, multiple geographic, bathymetric, oceanographic and anthropogenic variables were incorporated in generalized additive models (GAMs) and generalized estimation equations (GEEs) to describe dolphin presence, taking into consideration intensity of survey effort and sea state conditions. Modelling indicated that bottlenose dolphins strongly prefer the shallower waters of the northern GOC (as well as areas near finfish farms, that only exist in the north). Conversely, striped, common and apparent hybrid dolphins prefer deep waters in the central and southern GOC. Depredation by presumed dolphins was reported by 69 fishers (70.4%). Fishers in the northern sector of the Gulf reported significantly greater damage ($\chi^2=22.21$, $p<0.001$). Perceived economic loss averaged €1,398/boat/yr in the north (SD=1,950, range 0-10,000), and €81/boat/yr in the south (SD=254, range 0-1,000): a significant difference ($p<0.001$, Mann-Whitney U=154). Our results suggest that despite a high abundance of striped dolphins near southern ports, these animals (or common dolphins) were unlikely to depredate nets. Depredation occurred primarily in the north, where bottlenose dolphins and fishing effort overlap. Interviews and sighting records indicate that loggerhead sea turtles *Caretta caretta* contributed to depredation in both areas.