

# The plight of Mediterranean common dolphins



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As a child I played with plentiful seahorses, crabs and starfish on the beach of the Venice Lido, Italy, where I was born in 1963. Those lovely Adriatic Sea invertebrates are long gone: now, only a desolated shore remains. As I played on the beach, other marine species had been fading away, out of sight. Short-beaked common dolphins, whose amazing grace had blessed the Mediterranean for millennia, were vanishing from Adriatic and other waters.

The Adriatic Sea is one of the few Mediterranean areas with information on the historical occurrence of cetaceans, and this data can be used as a baseline to evaluate their present occurrence. Two dolphin species used to be widespread and abundant in northern Adriatic waters: short-beaked common dolphins and bottlenose dolphins. Surprising as it may seem, these animals were regarded as pests deserving systematic extermination at the beginning of the 20th century, and described as "man's worst enemies", "ichthyophagous monsters", or "phony and noxious pirates". In retaliation for fishing gear depredation or presumed competition, killings and systematic extermination campaigns were conducted for over a century, with thousands of dolphins being slaughtered. By the 1960s, these killings had depleted bottlenose dolphin populations and virtually eradicated common dolphins from the Adriatic. In subsequent

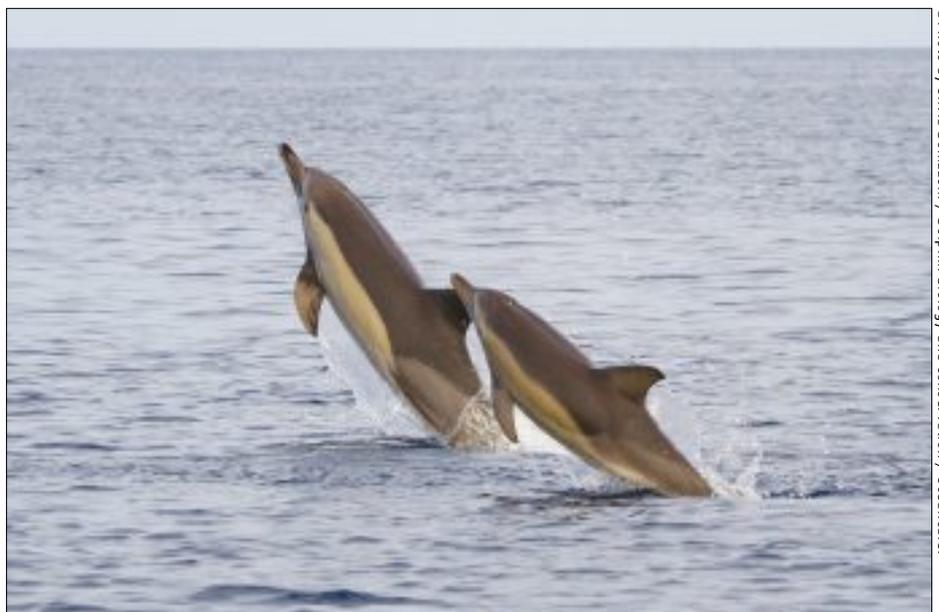
years, rapidly increasing habitat degradation and overfishing of common dolphins' key prey prevented recovery and contributed to the almost complete disappearance of this species. Today, the few isolated animals that may be still observed in Adriatic waters are nothing but the ghosts of a sea that used to be their home.

Historical literature and osteological collections indicate that common dolphins were widespread and abundant throughout the Mediterranean region, including in areas where they are now absent or rare. The causes are poorly understood but studies conducted so far suggest that, apart from direct killings in historical times, common dolphins have declined largely as a result of three factors: 1) reduced availability of prey caused by overfishing and habitat degradation; 2) incidental mortality in fishing gear (also called bycatch); and 3) sea temperature changes resulting from global warming, and the consequences thereof.

Research on common dolphins has been limited, in part due to their low occurrence, and there has been no systematic effort to assess and monitor their abundance and

distribution in the entire Mediterranean Sea. Useful information, however, comes from areas where these animals still occur and have been studied through a variety of methods. My colleagues and I have been part of this endeavour. We have studied dolphins in the northern Adriatic since the late 1980s, but recorded only a few common dolphins. Personally, I have encountered these animals only three times, including one individual who had joined a group of bottlenose dolphins and was "adopted" by them. That was going to be my last encounter with common dolphins in the Adriatic: to see more of them I had to move away from the shores of Italy and Croatia, and travel to the Ionian Sea coasts of Greece. There, I have contributed to a study conducted in an area where common dolphins were still relatively abundant... but not for long.

We studied common dolphins intensively in the Inner Ionian Sea for more than a decade. In the beginning they seemed to be doing fine. There were about 150 animals being regularly observed within a small coastal area around the island of Kalamos. Within ten years, however, those animals experienced a tenfold decline and became a rare



Two short-beaked common dolphins breaching synchronously in the Gulf of Corinth, Greece.

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sight. While our initial goal was to investigate common dolphin ecology and behaviour, we were eager to identify the reasons behind their decline. We spent years analysing scientific data and found that ecosystem damage was largely caused by overfishing by a small, but voracious, fleet of mid-size industrial fishing boats. Decline of common dolphins was related to excessive fishing of their key preys, particularly anchovies and sardines. Based on a series of papers published in peer-reviewed scientific journals, we proposed clear management measures and action plans that were delivered to policy makers through ACCOBAMS (the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea, and Contiguous Atlantic Area)—to no avail. Though common dolphins had declined within a Natura 2000 Site of Community Importance due to obvious fishery mismanagement and overexploitation, no action was taken and repeated calls to prevent the eradication of a protected marine mammal species went unheard. If a few common dolphins still occur in this area, it's because of their resilience.

Later on, we started studying dolphins in another area of Greece, the Gulf of Corinth. This is a semi-enclosed inland embayment where waters 500–900 m deep are found close to the coast. Here, common dolphins were reported to occur in mixed-species groups with striped dolphins. We wanted to know how many common dolphins survived within the basin, and whether they were doing well. Sadly, and for the third time in my professional life, I was about to witness a decline. Through years of intensive survey and photo-identification effort, we were able to estimate population numbers of dolphin species occurring in the entire Gulf. It turned out that striped dolphin numbers were high: about 1,300 individuals. Conversely, estimates of common dolphin abundance yielded only about 20 individuals, plus another 50 being classified as “intermediate” (because of their overlapping striped/common dolphin pigmentation indicating hybrids). Apart from the low number of common dolphins, the bad news was that the ratio of “pure” common dolphins versus intermediate dolphins dropped dramatically over time, suggesting that the former could no longer be a viable population capable of surviving under the present environmental conditions. Common dolphins in the Gulf of Corinth constitute a geographically distinct conservation unit (technically a “subpopulation”) with little or no demographic exchange. They face a high risk of extinction due to their small population size, limited extent of occurrence, reproductive isolation, suspected hybridisation with a much larger population of striped dolphins, and significant anthropogenic impacts. We concluded that under the criteria provided by the IUCN Red List

to assess extinction risk, common dolphins in this area qualify as Critically Endangered. Not a pleasant finding indeed.

Wherever one looks, Mediterranean common dolphins appear to be absent or declining. I would be eager to hear convincing news of recovery as a result of improved conservation management, but it hasn't happened so far. Common dolphins remain relatively abundant in the westernmost portion of the basin (the Alborà Sea), but even there recent evidence provided by Spanish scientists suggests that common dolphin habitat is shrinking due to increasing sea surface temperatures—likely an effect of climate change.

We study them passionately but it feels like nobody really cares, as if these animals do not matter.

But they do matter, and not only because they are so beautiful and an essential part of the Mediterranean natural and cultural heritage. Like men, no common dolphin is an island. Their decline and disappearance is a clear symptom of mismanagement of marine resources. This will ultimately result in loss of biodiversity, poor ecosystem resilience, and economic and cultural misery. Thousands of artisanal fishers in Greece and elsewhere have already realised that—together with common dolphins—it is their



A short-beaked common dolphin together with two striped dolphins in the blue waters of the Gulf of Corinth, Greece, where the two species co-occur in mixed groups.

Are these marine mammals going to disappear from the Mediterranean Sea? Should we rename them short-beaked uncommon dolphins? Will traces of their historical abundance only remain in ancient pottery, frescoes, mosaics, and museum collections? Indeed, if there was any serious political will to protect them, supported by public demand, common dolphins could be saved. Some groups still survive in the Alborà Sea, around Malta, in the southeastern Tyrrhenian Sea (particularly around Ischia), in the Greek waters of the Aegean and the Ionian, off southern Israel, as well as in areas of Turkey, Libya and Tunisia. Conservation biologists in the Mediterranean Sea are doing their best to study and protect these animals in the face of geopolitical complexity, socio-economic or naval interests, political indifference, and a generally poor determination to address the problem with more than just words and paperwork (the so-called “marine conservation on paper”). Skilled and dedicated researchers are striving to investigate present threats and identify management measures, despite shortage of funding afflicting virtually anyone who commits to study and protect Mediterranean cetaceans.

legacy and their very subsistence that are fading away. I was lucky to watch common dolphins swim around my boat; future generations might only have chances of viewing them on smartphone screens.

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