

# ecologia mediterranea



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exception, enough retrospective information has been collected to reconstruct a strong and quick contraction of the geographic range of the Iberian lynx during the second half of the 20<sup>th</sup> century (Rodríguez and Delibes, 2002). Lynx maps at five-year intervals were built with reports of sightings and deaths directly attributed to humans, mainly gunshots, traps, road casualties and kills by dogs. The mortality ratio, defined as deaths/total reports, was used as a measure of the intensity of non-natural mortality (Rodríguez and Delibes, 2004).

The Iberian lynx strictly depends upon a single trophic resource, the European rabbit. High lynx mortality was observed in areas where rabbits and other small game were a valuable resource, as compared with estates managed for big game. Furthermore, rabbit populations have suffered pronounced declines in western areas of the lynx core range, which may have prompted higher lynx mobility and, consequently, increased exposure to non-natural mortality.

Local relative lynx abundance was fairly stable over time, and did not show an inverse relationship with mortality ratio. Therefore, it is unlikely that spatial variation of lynx abundance was influenced by the intensity of non-natural mortality. Contrary to what would be expected from edge effects, in small lynx populations we did not find higher mortality ratios than in larger populations.

The mortality ratio decreased over time, but there is indication that significant reduction of lynx deaths may be related more to changes in land uses (emergence of big game plus changes caused by human migration to urban areas) than to the legal protection of the Iberian lynx in 1973. Losses to leg-hold traps decreased over the study period which may reflect decreasing extraction of rabbits with traps as well as a parallel general reduction of predator control, performed mostly with snares in recent times. Road casualties arised as an important cause of mortality only after 1980.

The suggested relationship between land uses (and associated hunting regimes) and the risk of lynx mortality may be applied to the selection of sites for lynx reintroduction. Provided that illegal predator control is eradicated, reintroduction attempts would give best results in the eastern half of the former lynx core range, which is naturally favourable for rabbits. In the long-term, management oriented to the enhancement of rabbit abundance should lead to a sustainable exploitation of rabbit populations compatible with coexisting lynx populations. Alternatively, low mortality risks occur in big game estates, but appropriate habitat management is required there to increase rabbit density above the threshold necessary to make reintroduced lynx populations viable.

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## Where did the Mediterranean's common dolphin go ?

The World Conservation Union (IUCN) has recently described the Mediterranean “subpopulation” of short-beaked common dolphins as Endangered in its Red List of Threatened Animals. This listing highlights how urgent it has become to do something to prevent the complete disappearance from the area of a species that until recently was considered “common” in the Mediterranean. Indeed, common dolphins were one of the most abundant cetacean species – and possibly the most abundant of all cetaceans living in the Mediterranean – until as recently as the 1960s. So, what prompted such a rapid decline? Why did these incredibly beautiful animals leave, die or otherwise disappear? We don't know for sure.

A recent review of their status suggests that the decline may be at least partly the result of large-scale habitat changes over the past 30-40 years, and particularly the reduced availability of key prey caused by overfishing and habitat degradation. Other factors that may have contributed to the species' decline include contamination by man-made chemicals, potentially resulting in debilitating effects on their health and ability to reproduce successfully, and incidental mortality in fishing gear, especially gill nets.

Environmental changes such as those associated with global warming also may have played a role, for example by influencing the amount or distribution of the dolphins' prey. Although the exact cause or causes are uncertain, there is no doubt about the fact that a large-scale population decline has occurred, and that common dolphins now survive only in relatively small portions of their former Mediterranean range. These latter include the Alborán Sea, in the western Mediterranean, where thousands of animals are still present, and the northern Aegean Sea, where data are scarce but it appears that densities remain fairly high.

The relative importance and interplay of potential threats such as prey depletion, contamination and bycatch are not well understood, so designing and implementing appropriate measures to counteract them is a daunting task. Calling for “more research” (and then yet some more) feels inadequate, perhaps even irresponsible.

Although continued monitoring of the last surviving common dolphin communities is important, what we know right now may be sufficient to gain some understanding of the problems and should provide the basis for at least a few precautionary actions. If there is to be any hope of preserving viable numbers of common dolphins throughout much of their historic range in the

Mediterranean basin, it will require the timely implementation of carefully planned measures.

This is why the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS), with support from WDCCS and from ASMS (Marine Mammal Protection), have endorsed a project for the conservation of Mediterranean common dolphins that was presented by the Tethys Research Institute during the first meeting of the ACCOBAMS Scientific Committee. This 26-month project will include the preparation of a Conservation Plan, the analysis of 10 years of existing data, and the design of a web site dedicated to Mediterranean common dolphins. These initiatives are aimed at defining priority actions to protect this endangered dolphin population in key parts of its range.

In some cases, it is now very difficult to conduct meaningful field studies on the species because only rare, scattered individuals remain. However, a thorough review of the existing historical literature may teach us a lot. For instance, in places such as the northern Adriatic Sea, research based on both literature and field surveys has shown that common dolphins and bottlenose dolphins used to be seen regularly in the region. Today, only the latter remain. Why are there no more common dolphins? At least as far as this region is concerned, it appears that the decline was triggered by intensive hunting, particularly in the 1950s when dolphins were slaughtered off the former Yugoslavia because of the perceived high levels of competition with local fisheries. Bounties had been offered to promote the killing of dolphins in the Adriatic beginning in the 19th century.

Early hunting campaigns may not have had a major impact on the reportedly abundant dolphin populations, but in the first half of the 20th century institutional campaigns aimed at complete extermination increased in intensity and resulted in the deaths of many hundreds of dolphins. The animals were depicted as “ichthyophagous monsters”, “noxious pirates” and “man’s worst enemies.”. By the time such systematic campaigns came to an end, probably in the early 1960s, Adriatic dolphins must have been severely depleted. Unfortunately, habitat degradation was well underway by then, and it quickly became a source of concern

for all of the Adriatic wildlife. Overfishing, eutrophication, anoxia, sea-floor degradation and chemical contamination are some of the threats that have faced the northern Adriatic ecosystem in the last 30 years. It appears that although the remarkably resilient bottlenose dolphins manage to survive at their current low densities, common dolphins – still present in the northern Adriatic until the 1970s – were unable to cope with yet another threat, and disappeared.

What can we do besides lament the disappearance of these magnificent creatures? Sadly, not as much as we would like to. For instance, the forces that cause climate change and chemical contamination are unlikely to be influenced in a major way by concern for common dolphins in the Mediterranean. Our current lifestyle choices, entrenched patterns of overconsumption, human overpopulation and political gamesmanship militate strongly against the types of changes needed to reverse what are essentially global trends. However, at a time when the stark evidence of wide-scale overfishing and the consequent need for immediate and decisive measures to reduce fishing pressure is finally capturing the attention of European decision makers, the goal of conserving common dolphins may converge with, and in fact add to, the momentum building in the direction of improved ecological conditions for the benefit of both humans and wildlife. In this context, the decline of common dolphins provides one more signal that our collective actions can have large-scale, unforeseen, unintended, and intractable consequences.

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*For more information read:*

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