Opinion Piece: On the Conservation of European Cetaceans and Life at Sea

Giovanni Bearzi, *Dolphin Biology and Conservation, Italy*

A commitment to "cetacean conservation" carries the basic assumption that it is *possible* to conserve cetaceans. As the assumption goes, conservation can be achieved by eliminating (or at least mitigating) the threats resulting in population decline and displacement, as well as those causing damage to individual animals. When it comes to direct mortality generated by whaling and other deliberate takes, conservation strategies turn out to be relatively straightforward: all that really needs to be done is reducing the killings. If those killings stop, most cetacean populations should be able to recover and be spared from eradication.

Cetacean conservation, however, becomes a much more challenging and ambitious task when the threats originate from widespread human encroachment and consumption patterns. The question then is: can the well-meaning scientists and managers protect whales and dolphins from human impacts that tend to be global and pervasive? And more importantly: *how* can cetaceans be effectively protected from calamities such as the widespread loss of marine biodiversity caused by intensive fishing, ever-increasing ship traffic, anthropogenic noise and other forms of pollution, or the changes resulting from ocean warming and acidification?

In these cases, cetacean conservation blurs into the much wider objective of influencing and reshaping human behaviour. Maintaining a focus on cetaceans while addressing the deeply rooted and complex human dynamics that ultimately endanger these animals is, indeed, a daunting task. We simply cannot deal effectively with a crisis unless we confront the economic, social and political reality that generated it. As they enter such a territory, conservation practitioners must be willing to approach new disciplines, liaise with other experts (for instance, environmental lawyers), and explore new and more effective communication and outreach strategies (Bearzi, 2020).

Because complexity is inherently hard to tackle, many are tempted to give precedence to the most obvious and discernible offences. Direct and tangible threats to cetaceans are easier to document and communicate, as compared to pervasive threats resulting from convoluted webs of ecosystem-level dynamics. For instance, if some whales become stranded with plastic bags in their stomach, or carry wounds caused by ship propellers, they may attract scientific interest and get the occasional press coverage. By contrast, threats that are more subtle and indirect in nature are often overlooked, or dismissed altogether—even when they affect entire populations.

One glaring example is the over-exploitation of marine life caused by intensive fishing, which combines with the damage inflicted by "ghost" nets and destructive fishing gear. Indiscriminate fishing is known to cause major changes to marine ecosystems, resulting in dramatic alterations of marine food webs. When food webs are "fished down", top predators are often the first to be affected—either because fisheries target them directly, or because overfishing depletes their prey resources. When cetaceans are forced to live in waters impoverished by fishing, within areas where their prey has been depleted, the scientists may not find direct evidence of cetacean mortality: whale and dolphin populations will simply move away, or else stay, devote more time and effort to foraging, and reproduce less effectively. With time, the least resilient cetacean species will fade away, sometimes to be replaced by more opportunistic and flexible ones—with net losses in terms of diversity.

Preserving ecosystem health and ensuring that whales and dolphins persist and thrive within reasonably pristine habitats is the most fundamental management goal. Historically, however, the practice of cetacean conservation has been driven by a desire to spare whale populations from over-hunting, and at times by a longing to protect individual animals and improve their welfare. Let's be clear on one point: efforts to reduce the direct mortality of cetaceans and improve their welfare certainly have value, and they must be supported. And yet, in our globalized world, we have become painfully aware that cetacean conservation can fail miserably if the larger scenario is overlooked. Pretending to protect cetaceans while neglecting their habitat and their prey does not represent a far-reaching conservation strategy.

Marine Protected Areas (MPAs) make superb conservation tools, and have the potential of sparing some trouble to whales and dolphins occurring within their range (Hoyt, this Report). Regrettably, in European waters these areas often turn out to be paper parks that provide little protection. A recent article (Dureuil *et al*., 2018) has shown that human impact, and fishing in particular, may increase within European MPAs. All too often, management action within protected areas may be farcical, to the point of banning windsurfing while allowing bottom trawling and high-

intensity noise from oil and gas prospection. And in many cases, the surface covered by MPAs is so small that they hardly make a difference to wide-ranging whales and dolphins. For instance, only 6% of the Mediterranean Sea is currently protected, and a mere 0.2% benefits from truly meaningful protection (Claudet *et al*., 2020). Robust marine conservation targets are clearly far-off.

The case of the Adriatic Sea is particularly instructive. It is one of the most intensively trawled areas, worldwide. For decades, it has been exposed to over-exploitation and destructive fishing practices that have combined with the effects of climate warming, pollution, geoseismic prospecting, maritime traffic, and a variety of other human impacts. Fish communities have suffered sharp declines (for instance, elasmobranchs have declined by more than 90%; Ferretti *et al*., 2013), and the once-abundant common dolphins *Delphinus delphis* have nearly vanished (Bearzi *et al*., 2004). The loss of biodiversity has been exacerbated by the mechanical and biological damage to the seabed caused by destructive fishing methods (primarily beam trawls, otter trawls, and hydraulic dredges), known to cause dramatic alterations of the seabed and reduce the biomass and biodiversity of benthic ecosystems. In the overexploited northern and central portions of the Adriatic only bottlenose dolphins *Tursiops truncatus* persist. The persistence of bottlenose dolphins, however, is no reason for complacency, as the overall scenario clearly has shifted from a pristine "sea of plenty" to a highly degraded and fished-down ecosystem where only the sturdy stands the ghost of a survival chance.

Protecting bottlenose dolphins (and whatever fauna has managed to persist within areas devastated by human impact) makes a worthwhile management objective. However, preserving these animals should not mean losing sight of true environmental recovery. Emphasis on the most proximate threats to cetaceans is good—but it shouldn't divert attention from the most ubiquitous and pervasive basin-wide offences. In the Adriatic and other dismal European scenarios, transitioning to a respectful and sustainable use of marine resources is bound to be difficult. And yet it is not impossible, as long as we keep our collective focus on management action leading to a real improvement of environmental conditions, which must include a serious reduction of destructive human impacts.

Sadly, our environmental baselines and perceptions continue to shift towards ever more impoverished oceans (Pauly, 2019). As a consequence, we may end up considering as healthy (or "least concern", in the IUCN Red List terminology) those cetacean populations that have merely not declined across the past several decades—as if a human life span makes a meaningful conservation baseline. We must counter this "shifting baselines syndrome" and commit to rewilding our seas by restoring environmental quality and richness, so that cetaceans won't be merely allowed to survive, within waters hosting a smidgen of the life they used to host just a few generations ago.

This Report, produced by OceanCare in partnership with cetacean science and conservation authorities, is inspired by the above-mentioned credo that it is, indeed, possible to protect cetaceans while also preserving their habitat. Such an ambitious task must rest upon a rigorous use of the available science, as well as multi-disciplinary efforts, appropriate lobbying and strategic media campaigns.

As a whole, the Report shows that the main threats to cetacean populations in European waters have been documented rather compellingly, and conducting more research is no longer the highest priority. The highest priority is, instead, implementing and enforcing the conservation actions outlined in a plethora of scientific articles and management plans. The Report recalls that European whales and dolphins have long been the target of conservation agreements, but precious few concrete actions were taken. The remarkable information presented here will make stakeholders, politicians and anyone who cares aware of past management failures, and better informed on the actions that desperately need to be taken.

References

Bearzi, G. (2020) Marine biology on a violated planet: from science to conscience. *Ethics in Science and Environmental Politics*. 20: 1-13. doi: 10.3354/esep00189.

Bearzi, G., Holcer, D. and Notarbartolo di Sciara, G. (2004) The role of historical dolphin takes and habitat degradation in shaping the present status of northern Adriatic cetaceans. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 14(4): 363-379. doi: 10.1002/aqc.626.

Claudet, J., Loiseau, C., Sostres, M., and Zupan, M. (2020) Underprotected marine protected areas in a global biodiversity hotspot. *One Earth*. 2(4): 380-384. doi: 10.1016/j.oneear.2020.03.008.

Dureuil, M., Boerder, K., Burnett, K.A., Froese, R. and Worm, B. (2018) Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot. *Science*. 362(6421): 1403-1407. doi: 10.1126/science.aau0561.

Ferretti, F., Osio, G.C., Jenkins, C.J., Rosenberg, A.A. and Lotze, H.K. (2013) Long-term change in a meso-predator community in response to prolonged and heterogeneous human impact. *Scientific Reports*. 3: 1057. doi: 10.1038/srep01057.

Pauly, D. (2019) Vanishing fish: shifting baselines and the future of global fisheries. Greystone Books, Vancouver.