

Manifiesto: Association of Oceanologists of Mexico, A.C.

The Mexico Oceanologists Association (ASOCEAN) is a professional non-governmental organization that brings together academics, technologists, entrepreneurs and environmental consultants focused on studies in different areas of the marine sciences. Founded by graduates of the Oceanology Department from the Autonomous University Of Baja California in 1985, it has approximately 900 members including: Oceanologists, Biologists, Geologists, Aquaculture, Environmentalists and other specialists from marine science schools around the country.

ASOCEAN was created with the initiative, commitment and mission to advocate for the integral and rational use of the Mexican seas. The National Board of Directors and Members of this association consider it necessary to express, through this open letter, our opinion on the current problems of the Upper Gulf of California:

1) The Gulf of California, from its mouth to the delta of the Colorado River, is one of the most biologically diverse areas in the world. Its environmental conditions favor high productivity and support the life of abundant flora and fauna. In fact, it has been designated for its exceptional biological wealth as the "Aquarium of the World". The upper gulf is a relatively isolated and shallow region, located in the northernmost end of the Gulf of California. In this region there are a number of species unique on the planet, such as the vaquita marina, totoaba, curvina golfina, a delta clam and some coastal vegetation varieties. In addition, a wide diversity of resident and migratory species make use of this zone for feeding, reproduction and breeding, among them marine mammals, turtles, sharks, birds and numerous species of micro and macro invertebrates.

2) The Upper Gulf of California is characterized by high levels of primary productivity. This is caused by the high levels of nutrients displaced by intense tidal dynamics, from the southern gulf to the delta zone. However, we would like to emphasize the fact that this region has been altered by various anthropogenic factors. These factors include changes in habitat, overexploitation of fishery resources, unsuccessful monitoring of fisheries regulations, and illegal trade in species of high commercial value that have put some species into the category of critical danger. The most threatened and protected species under Mexican and international standards are the vaquita and totoaba; threatened species are the dolphin curvina and the delta clam. This threat is due to a multifactorial problem with great human influence. First, the reduction of freshwater flow due to the damming of the Colorado River has reduced the coverage of the delta wetlands and its estuarine condition by 90%. This reduced flow is now coupled with poorly monitored fisheries exploitation, lack of understanding of environmental education, and lean economic livelihood alternatives for communities in the Upper Gulf of California.

3) Data from the vaquita population indicate there is reduced genetic variability likely due to the reduction in population size. Further, research shows that this loss of diversity did not occur recently, but has remained constant during many generations, meaning that for some species this is a conventional behavior. Although there are clear examples of populations that, after a severe reduction in numbers, have recovered relatively successfully and are now much more abundant (the North Sea Elephant and the California Condor), it is important to emphasize that neither the

diversity or the socio-economic context of the habitat of the recovered species is comparable to that currently facing the vaquita. This leads us to recommend a comprehensive plan for the conservation and sustainable use of the ecosystem resources of the Upper Gulf.

4) The National Oceanographic Community, through ASOCEAN, recognizes that the population problem of the vaquita is real. It requires comprehensive and urgent work to find its solution, without sparing investment and research efforts of a community committed and focused on the problem.

5) We also recognize that thanks to the effort and commitment of the communities of legal fishermen, universities, research centers and the Mexican government, the population of a fishing resource with great economic potential and considered to have been in danger of extinction—the totoaba has shown encouraging signs of recovery. The species now exhibits high levels of genetic diversity and an effective population size, large enough to preserve this diversity in the long term. Currently, with the knowledge that has accumulated on the breeding and rearing in captivity of this species, the technology for its cultivation has been successfully developed. We are convinced that this species can be an example of conservation and sustainable development for the Upper Gulf of California. We recognized that a sport fishing program is a viable alternative, as proposed recently by SEMARNAT. In the short term, coupling strictly regulated fishing, together with a totoaba repopulation and breeding programs from the management units for conservation (UMA) of the fishery species. This strategy should be undertaken with a view to long-term commercial fishing on a low scale with fishing gear that does not endanger the vaquita and other non-target species. Taken together, these actions would bring significant income to communities, sources of employment, tourism development and, in addition, a net-free habitat for the vaquita and other mega fauna species of the Upper Gulf of California.

The social and environmental issues of the Upper Gulf of California represent a great opportunity to demonstrate that we, as Mexicans, are able to manage our natural resources to meet the sustainable development goals to which Mexico has committed. To this end, it is urgently required that the various actors, including the social sector, the academic sector and the government sector join forces in an organized way to develop an exemplary agenda in order to achieve the sustainability of development in the region. Therefore, the Mexican Oceanographic Community, through ASOCEAN, proposes the creation of an “Integral Agenda for the Sustainability of the Upper Gulf of California”. The Agenda should be compromised on three components: ambitious monitoring, conservation and long-term social development, for the benefit of fishing, aquaculture, tourism and academic activities, through the sustainable use of coastal and marine resources in the region.

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