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**Combining Ecology and Aquaculture for *in situ* marine conservation initiatives:
Seahorse in Gran Canaria Island (NE Atlantic) - a case study.**

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The seahorse populations have suffered a worldwide progressive decline trend in the last decades. In particular the knowledge about African populations of seahorses are poor understood even if some species are heavily trade. The information concerning seahorse wild stocks in Canary Islands is insufficient to make an assessment of their risk of extinction based on their distribution and population status. Therefore their conservation and sustainable management need an interdisciplinary approach based on Ecology and Aquaculture as main research tools.

Thus, population assessment was conducted in Gran Canaria Island (NE Atlantic) to estimate different ecological data related to wild seahorse stocks such as abundance, population structure or species diversity. Accordingly, specific conservation actions based on spatial and temporal distribution of populations surveyed could be recommended, leading to their sustainable management. Concerning breeding in captivity, different experiments were carried out related to first feeding regimes in offspring or spawning quality in broodstock of seahorse species observed in these latitudes. Hence, the optimization of seahorse culture techniques as a conservation action, could allow decreasing pressure over wild stocks, enlarging the knowledge about some biological topics that cannot be studied in the wild and also if necessary to replace wild-caught animals.

Data obtained through this multidisciplinary approach data were combined to design and carry out a pilot-scale controlled release using tagged captive-reared seahorses. This study provided useful cues about acclimatization of animals to wild conditions and could be employed as a reference for future studies developed in the same areas or even as a guideline to assess future stock enhancement strategies employed as an ultimate resort when previous conservations initiatives failed.

The combination of both Ecological and Aquaculture tools will avoid the natural resources depletion and it will make the difference in the conservation status of threatened species such as seahorses.