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Investigating the biodiversity and current status of the historically renowned oyster beds of Qatar

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The “Pearl Oyster” *Pinctada radiata* has long been associated with the nation of Qatar. Historically pearl oysters were harvested in huge quantities in the Arabian Gulf with Qatari pearls making up a large percentage of the fishery. However, following the discovery of oil in Qatar, combined with the emergence of Japanese cultured pearls onto the market, the Qatari pearl fishing industry diminished considerably.

Oyster beds are recognized globally as hotspots of species diversity. The beds provide numerous primary ecosystem services such as nursery habitat for juvenile fish, major pelagic benthic coupling, water filtration and substrate stabilizing eco-engineers. It was therefore important that the demise in interest of this once iconic mollusk, such a rich part of Qatar’s culture and heritage, was addressed. It was the lack of information on the current status of the oyster beds in Qatar’s marine waters, and their associated biodiversity, that prompted the start of a targeted research program at the Environmental Science Center (ESC) at Qatar University.

The current research project is focused on three key components:

- The current ecosystem health, biodiversity, population structure and demographics of the “Pearl Oyster” *Pinctada radiata* within the Qatari Exclusive Economic Zone.
- The current status of the standing stock of *Pinctada radiata*.
- The potential for oyster reef restoration using applied stock enhancement strategies and habitat expansion.

The research was undertaken with a biogeochemical and biological cruise onboard the ESC’s marine research vessel, the R/V Janan, when ten offshore oyster sites were visited. Sampling was carried out on historically productive oyster beds as well as the periphery of the bed. This allowed for inter and intra comparison of biodiversity of the oyster beds.

Preliminary results have shown a dramatic decline in “Pearl Oyster” densities with inter and intra bed biodiversity now displaying similar indices. This is undoubtedly a matter of concern that will need urgent remedial action.

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