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Are Lionfish set for a Mediterranean invasion?



Shevy Rothman

As we leave the Mediterranean Sea at the end of the summer, we look at the rapid changes wrought on its biota. Our favorite seaside may be undergoing major upheaval by the time we return. A recent spate of records of lionfish from Israel, Lebanon, Cyprus Turkey, Greece and Tunisia serves as clear evidence of a major population explosion.

The introduction of the highly venomous Indo-Pacific lionfish into the western Atlantic is one of the most disastrous marine invasions to date. The lionfish spread across the tropical western Atlantic and Caribbean Sea was swift. A census of lionfish in the Florida Keys National Marine Sanctuary revealed a rapid rise in their frequency of occurrence, abundance, and biomass, with a three- to six-fold between 2010 and 2011 alone. Their predation caused a 65% decline in native fish biomass over two years on heavily invaded reefs in the Bahamas and altered marine ecosystems with cascading effects on coral reef food-webs and benthic community structure. But whereas the western Atlantic population was founded by individuals accidentally released from an aquarium, the lionfish in the Mediterranean are considered to have entered through the Suez Canal from the Red Sea. Major enlargements of the Suez Canal (2010, 2015) have enhanced its potential as a “corridor”, allowing increasingly greater numbers of organisms through – including the lionfish. Complex changes in the Mediterranean marine environment have undoubtedly increased its susceptibility to invasion by modifying its hydrologic and biological properties.

A couple of years back the outpouring of lionfish records from Lebanon, Cyprus and Crete was inconceivable. In fact, a study combining remote sensing and computer modelling assured us that connectivity among potential lionfish habitats in the Mediterranean is low and unfavorable to wide dispersion of lionfish larvae. Alas, the lionfish had been unaware of this research.

No action has been taken to control the founder populations, no risk analysis performed as to possible threats to Marine Protected Areas (The Mediterranean countries adopted an “Action Plan concerning species introductions and invasive species in the Mediterranean Sea” in 2003 (<http://www.unep.org/regionalseas/publications/brochures/pdfs/invasive.pdf>). The preamble to that Action Plan states that “it is imperative to take immediate steps to prevent the introduction of non-indigenous species, control the spread of those already introduced and endeavor to mitigate the damage they cause to the marine ecosystem.” (UNEP-MAP-RAC/SPA 2005). Pious official declarations aside, no action was taken. **The lionfish will be there next summer.**

Bella Galil, National Institute of Oceanography, Israel

<http://eu.oceana.org/en/blog/are-lionfish-set-mediterranean-invasion#>