

# Lionfish invading the Mediterranean Sea

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A lionfish specimen photographed in the Mediterranean. Credit: Maria Papinikola

Rising sea temperatures in the Mediterranean are encouraging alien lionfish species to invade and colonise new territories with potentially serious ecological and socioeconomic impacts.

Evidence collated from divers and fishermen reveals that in the space of

a year, the poisonous predators have colonised Cyprus - and these may be at the vanguard of a pan-Atlantic Ocean invasion following the widening and deepening of the Suez Canal.

The report, published in *Marine Biodiversity Records*, was written by Mr Demetris Kletou, of the Environmental Research Lab, in Limassol, Cyprus; and Professor Jason Hall Spencer, of the School of Marine Science and Engineering at Plymouth University.

"Until now, few sightings of the alien lionfish *Pterois miles* have been reported in the Mediterranean and it was questionable whether the species could invade this region like it has in the western Atlantic," says Mr Kletou. "But we've found that lionfish have recently increased in abundance, and within a year have colonised almost the entire south eastern coast of Cyprus, assisted by sea surface warming."

Lionfish are generalist carnivores and can feed on a variety of fish and crustaceans, with large individuals preying almost exclusively on fish. They spawn every four days, year-round, producing around two million buoyant gelatinous eggs per year, which can ride the ocean currents and cover large distances for about a month before they settle.

Their success at invading new territories stems from a combination of factors such as early maturation and reproduction, and venomous spines that deter predators, and they can quickly colonise reefs and reduce biodiversity in the area.

The research team collated information on reported encounters in coastal waters from divers, spearfishers and fishermen, and conducted interviews, gathering photographic and video evidence, and recording the date of the sighting, and the location. In addition, governmental officers of the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Rural Development and Environment, in

Cyprus, shared information and specimens captured in nets by local coastal fishermen.

The results show that the lionfish *P. miles* has colonised almost the entire south eastern coast of Cyprus, from Limassol to Protaras in just one year. At least 24 new and confirmed sightings of 19 individuals were recorded, such as three pairs found on a wreck near Cape Kiti.

Professor Jason Hall Spencer said: "Groups of lionfish exhibiting mating behaviour have been noted for the first time in the Mediterranean. By publishing this information, we can help stakeholders plan mitigating action, such as offering incentives for divers and fishermen to run [lionfish](#) removal programmes, which have worked well at shallow depths in the Caribbean, and restoring populations of potential predators, such as the dusky grouper. Given that the Suez Canal has recently been widened and deepened, measures will need to be put in place to help prevent further invasion."

**More information:** Demetris Kletou et al, A lionfish (*Pterois miles*) invasion has begun in the Mediterranean Sea, *Marine Biodiversity Records* (2016). [DOI: 10.1186/s41200-016-0065-y](https://doi.org/10.1186/s41200-016-0065-y)

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