

# WIAS

## Annual Conference

# 2025

SESSION I. Room: Bach 2 16.20-17.20 hrs

## **Limited effects of culling on the behaviour of invasive lionfish (*Pterois miles*) in the Mediterranean Sea**

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Invasive species pose serious threats to the ecosystems that they invade. To reduce the consequences of invasions, efforts are made to control invaders and evaluating the effects of such efforts is paramount. Lionfishes (*Pterois volitans* and *Pterois miles*) are native to the Indo-Pacific Ocean and pose a major threat to local ecosystems in the invaded Atlantic Ocean and Mediterranean Sea. Culling via spearfishing is a widespread measure to limit lionfish population size in invaded ranges. However, lionfish alter their behaviour after repeated culling, potentially decreasing the effectiveness of future culls. Previous studies on lionfish in the Caribbean have shown that they are less bold after repeated culling. However, the impact of culling on lionfish in their newest invasive range, the Mediterranean, remains enigmatic. To determine the behavioural changes in response to culling in this second area of invasion, we tested for effects of culling on the behaviour of lionfish in Cyprus, a region heavily impacted by the lionfish invasion in the Mediterranean. We compared the response of lionfish to an approaching free diver holding a metal pole (imitating a spear fisher) between protected areas where spearfishing is prohibited and areas where culls are frequently conducted. We also assessed whether activity, hiding pattern, and site fidelity differed between these culled and unculted sites. Overall, we found limited effects of culling, indicating surprising resistance to culling-induced behavioural changes in Mediterranean lionfish.