

Presence, Abundance, and Distribution of Common Invasive and Non-Native Species in the Florida Keys National Marine Sanctuary

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Florida's warm, humid climate makes it an incredibly hospitable location for life. Boasting an already well-established range of native biodiversity, any newly introduced species can also easily find a way to survive and thrive. These types of plants and animals are known as non-native species. Non-native species can be further classified as invasive if they are detrimental to native species and play a deleterious role in impacting their newly established ecosystems. Lacking natural predators to keep their populations in check, both non-native and invasive species can outcompete residents that provide valuable ecosystem services, potentially fueling the extinction rate of the native species. Here, this poster will focus on the potential occurrence and abundance (or absence) of five (5) non-native and invasive marine organisms in the NOAA Florida Keys National Marine Sanctuary (FKNMS), as well as one species of seagrass, which is known to occur just outside the FKNMS boundary at this time. Primarily, *Pterois spp.*, commonly known as lionfish, are an invasive species from the tropical waters of the Indo-Pacific. The combination of their venomous spines and appetite to eat anything that can fit in their mouth makes them pose a significant threat to sanctuary resources. In FKNMS, two species of lionfish, *Pterois miles* and *Pterois volitans*, have been known to occur at various depth ranges and across different habitat types. Additionally, this poster will also analyze the distribution of four non-native and potentially invasive coral species: *Tubastraea coccinea*, *Tubastraea faulkneri*, *Unomia spp.*, and *Xenia spp.* To obtain this data, scuba surveys are presently being conducted and will continue until the end of the Summer of 2025. Both natural and artificial reef locations will be investigated to describe and quantify the distribution and abundance of these species within FKNMS. If encountered during a dive, size, age, and surface area/quantity estimations will be recorded and tracked over time. If possible, these species will also be removed and taken back to the lab for further analysis. Understanding how these species interact with plants and animals can give insight into how harmful they can be to the local environment. By the time of the conference in the Fall of 2025, the datasets collected will be analyzed, and a formal discussion will be presented along with recommendations for future research and potential management strategies. The information learned from this study could have direct sanctuary management and policy-making implications by potentially increasing regulations of marine transportation methods, which commonly serve as the source of invasive species, as well as providing an initial reference for researchers interested in studying these species further within FKNMS.