



News Release

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Contact: Cindy Knapman
Phone # (808) 956-7410

Aliens in Hawai'i

Ta'ape, introduced in the 1950's, has spread across the archipelago

Ta'ape, or bluestriped snapper, was introduced half a century ago by the Hawai'i Division of Fish and Game. It is suspected of depleting native fishes, has been shunned by local fishermen and, new studies show, may have brought a nasty parasite to Hawai'i.

Two genetically distinct lineages of ta'ape were introduced to Oahu – one from the Marquesas Islands in 1958 and three years later, one from the Society Islands. Studies by Dr. John Randall revealed that ta'ape quickly became established and spread across the entire archipelago, and now can be found at high densities on many reefs in Hawai'i including in the Papahānaumokuākea Marine National Monument (Monument) in the Northwestern Hawaiian Islands (NWHI).

While it was clear that ta'ape had spread throughout the islands, no studies had been conducted to determine if both introductions were successful. Using advanced genetic technology, Michelle Gaither, University of Hawai'i Sea Grant College Program-supported graduate student, demonstrated that ta'ape collected from across the archipelago have DNA fingerprints from both Marquesas and Society Islands.

In a paper published this month in the international journal *Molecular Ecology*, Gaither and colleagues report that both introductions have been reproducing, interbreeding, and spreading. Gaither explains “the ta'ape in the NWHI have genetic diversity as high as the original introduction site on Oahu, indicating that large numbers moved rapidly into the Monument. This large-scale colonization represents the worst case scenario for managers seeking to halt the spread of invasive species. Exotic animals introduced around the main Hawaiian Islands can spread to the protected waters of the Monument in the equivalent of a biological tsunami.”



Photo by Luiz Rocha.

A major concern is that ta‘ape may have introduced a nematode, a parasite that attaches to the lining of the stomach in fishes. Dr. Greta Aeby, a researcher at the Hawai‘i Institute of Marine Biology (HIMB), has demonstrated that the ta‘ape parasite occurs in at least six native fishes, including three goatfish. At high densities the nematode can cause severe damage to intestinal tissues of their host and have been found as far north as French Frigate Shoals. As fishing pressure depletes stocks of native fish such as ehu, onaga, and opakapaka the population size of the introduced ta‘ape continues at high levels, without much fishing pressure.

The ultimate consequences of the introduction are still unknown but Gaither and Aeby are racing to understand the impact of this species on our native ecosystem. “Ultimately we cannot put this malevolent genie back in the bottle” says Gaither, “Marine invasions are nearly impossible to stop. However, by documenting this case we hope to elevate awareness in both management agencies and homes across Hawai‘i. Our message is simple: don’t put alien species in Hawaiian waters.”

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