

Species Richness of Native Plants in Protected Areas

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ABSTRACT:

Non-native species (NNS) are species introduced into a new ecosystem by deliberate or accidental transportation. NNS can alter fundamental ecological properties, such as the dominant species in a community, an ecosystem's physical features, nutrient cycling, and plant productivity. In some cases, NNS are serious and ongoing causes of species decline and habitat degradation. NNS often thrive with the help of human disturbance and, minimal or no predator or parasite impacts in their introduced range. Because humans (via farming, grazing, logging, etc.) have not heavily altered the wet plant forest community within the National Park of American Samoa (NPSA) we expect native species to exceed non-native species richness on average within the park.

To test this hypothesis we measured species richness of native and non-native plants in standard quadrants randomly placed throughout the park on the islands of Tutuila and Ta'u. A total of 29 plots were sampled on Tutuila and 12 plots on Ta'u Island. All species within each 50m x 20m plot were enumerated and identified as native or non-native. This year's sampling is ongoing, so the data analyzed here is from 2013 sample.

The plots surveyed back in 2013 on Ta'u formed 29.3% of the NPSA plots. While Tutuila formed 70.7% of the plots surveyed. The survey on Tau showed the area is dominated by 89.4% (474) native species, 8.9% (47) non-native species and 1.7% (9) unknown species. While the survey on Tutuila showed that the area is dominated by 89.1% (1,334) native species, 9.3% (140) non-native species, and 1.6% (23) unknown species. The data supports the hypothesis that areas not heavily altered by humans are rich in native species.

Keywords: Non-native species, species richness, human disturbance

ACKNOWLEDGEMENTS:

The STEP-UP High School program is supported by the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health, Grant Number: R25DK78386-12.